

THE CAMBODIAN BEHAVIORAL SURVEILLANCE SURVEY, FIRST ROUND: 1997

Final Report by
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I. Introduction

Sexually transmitted diseases (STDs) including AIDS are spreading at an alarming rate in Cambodia. Recent studies have shown that as many as 41% of Cambodian female sex worker (FSWs) are infected with HIV¹. STDs/HIV are not only increasing among this group, STDs/HIV are spreading very fast to other Cambodian people. The last HIV sentinel surveillance in Cambodia in 1995 found 39.3% seroprevalence in FSWs, 7.1% in military/police men; and 3.2% in pregnant women. These HIV infections rates are among the highest found in such populations in Asia, exceeding those from Thailand where 1.8% of pregnant women and 19.1% of FSWs were reported to be HIV positive². Thus, Cambodia now has one of the highest rates of STD/HIV in the world. To control this epidemic, the National AIDS Program (NAP) 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 are also starting STD/HIV prevention and treatment programs in Cambodia yet no reliable systems for following behavior change are yet in place.

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 disease such as smoking, physical activity, eating patterns, alcohol consumption, violence and risky sexual behavior. In the United States, there are as many as six different surveys conducted either annually or on a regular basis to follow a range of health behaviors including a monthly Behavioral Risk Factor Surveillance System run by the Centers for Disease Control (CDC)³. The rise of the global HIV epidemic has led 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, the USAJD-funded AIDSCAP Project launched a series of studies in developing countries that are hoped to provide a foundation for the establishing regular surveillance of sexual behavior in those countries called the Behavioral Surveillance Survey (BSS). These surveys are designed to be conducted on an annual basis to provide data on changes of sexual behavior over time. This report describes the first round of the Cambodian BSS completed in Cambodia in June 1997.

II. What is a Behavioral Surveillance Survey (BSS)?

A BSS is a series of surveys carried out every year in the same group. A major goal of BSS is to monitor and track high-risk sexual behaviors in selected target groups on a regular and systematic basis. The questions focus on the main behaviors that put people at risk for HIV infection. The uses of BSS:

- Targeting prevention programs

BSS can show which population subgroups have high risk behaviors and help decide how to design prevention programs across target groups

- Identifying specific behaviors in need of change

HIV risk behaviors can occur with different types of sexual partners (like commercial sex workers, casual partners such as girlfriends, or long term partners such as wives). Asked

correctly, questions in BSS can point to which relationships need intervention to decrease risk. For example, in many countries condom use has become the norm among men and commercial sex workers. But still very few people use condoms with non-paying casual partners.

- Providing indicators of success and identifying persistent problem areas
- Since BSS is repeated, it can identify changes in the behavior of groups that may be due to intervention programs. Though not designed to evaluate specific programs, BSS can illustrate that certain behavioral goals of sets of programs are being met. Also, risk behaviors which do not change over time in spite of interventions may suggest that other types of programs are needed.
- Serving as an advocacy and policy tool
- The numbers from BSS can be used for advocacy and policy. For example, findings can be interpreted for journalists so they can be printed in newspapers or on the radio. Also, results can be used to convince politicians and funding organizations of the need for more attention for HIV prevention.

Although HIV has spread extensively in Cambodia, experience in other Asian countries like Thailand shows that behavior can change in a relatively short period of time: toward lower risk in some situations and toward higher risk in others. BSS will warn NAP and NGO program managers if new risk behavior patterns arise and help with the evaluation of prevention programs. Because Cambodia had planned to implement a major, national offensive against HIV in 1997 with support from the World Bank, French Cooperation, European Union and other donors, it was decided to begin the BSS in 1997.

III. Which Behaviors Are Risky?

People become infected with STDs through risky sexual behavior. Risky behavior means behavior that exposes individuals to STD/HIV. Studies in other countries have identified behaviors risky for STD/HIV including sex with many different people, sex at a very young age, sex with a partner who has sex with many different people, sex without using a condom to a non-monogamous partner, intravenous drug use, sex for money and sex for drugs. The distribution of these behaviors and clustering in certain socially defined groups of people allows for the identification of different "risk groups." STD epidemiology traditionally defines three groups where behavior drives the spread of STD/HIV in a population: the core, the bridge, and general population. These groups will be described in detail in the next section.

The essential data needed for all risk "groups" are:

- (1) The recent number of different sexual partners in this "group", on average;
- (2) Condom use for each of these recent sexual encounters.

The data from BSS can be used to develop targets for changing these behaviors

and with data to evaluate the effectiveness of education and other interventions in achieving these targets.

The spread of STD/HIV can be stopped by changing the behaviors that put people at risk for STD/HIV. Therefore, prevention programs are trying to change Cambodian people's sexual and social behavior. In order to evaluate how these programs are working, it will be necessary to see if the risky behaviors are reduced in the Cambodian population over time. The purpose of BSS is to measure how behavior that is risky for STD/HIV changes in the Cambodian population over time. The BSS will show if sexual behavior in Cambodia is changing across different groups, which will help to understand if the prevention programs are working.

IV. STUDY POPULATION

The Cambodia BSS provides a description of the sexual behavior of people who are members in each of the three groups: the core, the bridge, and the general population. By following the behavior changes in this group we will understand the progress of STD/HIV in Cambodia.

Sound formative research on sexual behavior previously conducted in Cambodia by anthropologists and NGOs on a number of different studies has allowed for the identification of STD/HIV risk groups. The actual prevalence of the specific risk behaviors have not been systematically studied across groups. Comparisons of behaviors by groups is important to gauge the future direction of an STD/HTV epidemic in Cambodia.

A. Core Groups: In most countries, there is a disproportionately large number of STDs that result directly or indirectly from a small subgroup of the people experiencing infection known as the "STD core group"⁴. The core group concept has gained credence among those involved in STD/HTV prevention and research and has been identified in various countries and populations. A "core group" is defined as a highly vulnerable group of individuals characterized by high rates of partner change (often with each other), longer duration of STD infection often related to poor access to acceptable health care, and highly efficient transmission of infection per exposure, all contributing to high rates of STDs⁵. It is assumed that the prevention of STDs in these groups will lower a community's STD rate more than prevention among other groups or the general population.

In Cambodia, the core group has been identified as brothel based FSWs and urban men belonging to the police and military. Men engaged in these professions were selected to represent the male core group because they are known to be frequent commercial sex clients and have demonstrated elevated rates of HIV and STD. The 1996 HIV Sentinel Surveillance found 5.5% of police and 5.95% of military were HIV positive. Moreover, their reported use of commercial sex is much higher than that reported in any other group of men in other studies in Cambodia as the Cambodia Prevalence and Behavior Study found 50.1% had commercial sex in the previous month and 81.3% in the past year⁶. Female sex workers, on the other hand, are often seen to represent a core group of women throughout the world. Women engaged in low-fee commercial sex obviously have more partners and greater sexual activity than the rest of the

population by necessity - their livelihood depends on their level of sexual activity. Cambodian FSWs are no exception. Moreover, the commercial sex industry in Cambodia is organized around "brothels", commercial sex establishments that employ women to sell sex. Descriptive research has been conducted with FSWs in Cambodia and verifies the risky nature of their sexual activity. Moreover, epidemiological data on FSWs reveals that up to about 39% of FSWs having either gonorrhoea or chlamydia⁷ and 41% of FSWs are HIV positive⁸ in Cambodia.

It should be noted that although the BSS research team recognized that there are many Vietnamese FSWs in Cambodia who may have an important role in the spread of STD/HIV infection, they were not included in the BSS study. The Vietnamese not only represent a minority of all FSWs in Cambodia but the difficulty of translating questionnaires and locating bilingual interviewers made it not feasible to include them. Additionally, only FSWs working in brothels were interviewed to insure a consistent approach to sampling. Therefore, only Cambodian brothel based FSWs will be interviewed on an ongoing basis in the BSS. It is hoped that specialized surveys in groups of Vietnamese FSW will be conducted to supplement information in the BSS.

B. Bridging Groups: The transmission of STD/HIV beyond core groups into the general population has been shown to be based on patterns of mixing by individuals who have sexual intercourse with different types of individuals⁹. As STD/HIV spreads in a country, it moves from the core groups into the general population through people who act as a bridge because they have sexual partners both in the core groups and in the general population. Individuals with both core and non-core partners may therefore play a critical "bridging" role for HIV/STD transmission in countries such as Thailand by linking a low prevalence population of spouses (wives) and other non-core women to a high prevalence population of women who work in commercial sex. In a recent study in Thailand, as many as 16.8% of low income men and 25.1% of truck drivers were identified to be a "bridge" between FSWs and low risk women in the past six months¹⁰. The most common type of bridge in this study was found to be married men who had sex with prostitutes. Women can also serve as a bridge if they have multiple partners of high and low risk, however, there are few studies of such women in Asia (Havanon).

The bridge population was defined in Cambodia as men and women likely to have both commercial and non-commercial partners which may include those who exchange sex for money but are not engaged in commercial sex as a full-time profession. Women who work as beer promoters ("beer girls") in Cambodia are believed to have many sexual partners, including some that are commercial. We suggest they are equivalent to cocktail waitress in other countries or "indirect sex workers". Some beer promoters, though not all, work as indirect sex workers. Others, however, many have "boyfriends" or "sweethearts" within relationships that are non-monogamous. Moreover, some beer promoters may have more than one "sweetheart" at one time and still other beer promoters have serial relationships.

The male bridge group was identified to be men working as moto-taxi and cyclo-taxi drivers. Their access to cash and mobility is believed to provide them greater access to commercial sex than other low income men. Taxi drivers congregate at depots and moto drivers (motorcycle taxi drivers) are easily spotted by their common brand of motorcycle and baseball cap.

C. General/Low Risk Groups: Another important measure of the speed and breadth of HTV spread used in determining the stage of the epidemic is the prevalence level in a low risk group of sexually active individuals: typically married women of reproductive age. In Cambodia, research on the general population have shown relatively low rates of commercial sex use among men in occupations other than police or military¹¹. Additionally, the STD/HIV Prevalence and Resistance Study revealed negligible rates of risky sexual behavior among women attending reproductive health services and the sexual behavior of these married women is not expected to change, nor will they be the targets of sexual behavior change programs given their low risk profile. Prevalence of GC/CT in such women was found to be 5.0%¹² and with HIV 3.2%¹³. Nevertheless, the prevalence of HIV among such women is still higher than found in most other countries in low risk populations in Asia.

For the Cambodian BSS a segment of the general population of women that is likely to experience changes in sexual behavior and norms regarding sexual activity over time was selected for inclusion in the BSS. These are young women between 18-30 years working in a low-pay profession such as factory work. Working women were sampled from a variety of occupations such as daytime market vendors, factory workers, sanitation crew, hotel and restaurant workers. For males, vocational students were chosen because they were presumed to be less prone to sexual risk taking given their higher education and social status.

The BSS groups all represent different levels of risk for STD/HIV in Cambodia. Consideration of vulnerability to HIV and ease of access also influenced the selection of groups. In addition, changes in trends of risk behavior of these groups should be sensitive to effective national program interventions. These groups of individuals are common in the more urbanized parts of Cambodia and changes in trends of risk behavior of these groups should be sensitive to effective national program interventions.

V. STUDY SITES

The BSS was conducted in five major cities in five different provinces. BSS was conducted in the following cities: Phnom Penh, Battambang, Siem Reap, Sihanoukville, and Kampong Cham. Cities are seen as pockets of high risk behavior and places where behavior change programs may be targeted. Moreover, social change tends to originate in urban areas where communications are better and social interaction high. Therefore, sexual behavior change may also be expected to occur first in cities.

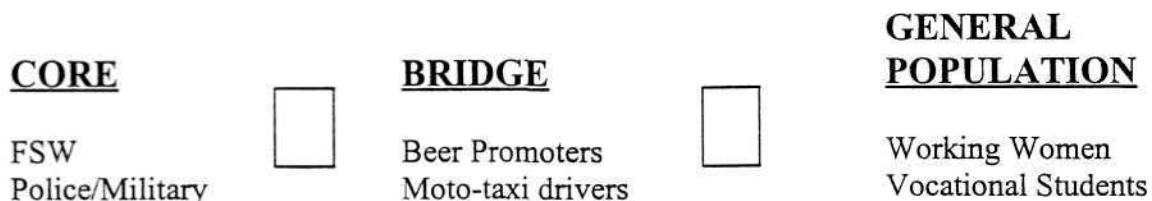


Figure 1. BSS Risk Groups

VI. SAMPLING PROCEDURES:

The number of respondents for each group was determined based on the estimated level of key risk behaviors (such as percent with multiple partners) and the degree of confidence required to detect a significant change in behavior over time. An ADDSCAP matrix for determining sample size given the above assumptions was applied and the AIDSCAP Evaluation Manual # 4 describing the basic principles of conducting a BSS in the context of a comprehensive HIV prevention program served to guide the sampling and data collection procedures to maintain consistency with BSS in other countries.

Table 2. Sample Sizes: Projected and Actual

	Projected	Actual
FSWs	240	245
Police/Military	375	407
Beer Promotion	550	581
Moto Drivers	550	570
Working Women	1350	1370
Vocational Students	1350	1183
Total	4,415	4,356

Of the projected sample, 98.7% of target was achieved.

A cluster design was employed to sample for each group. Cluster sampling is an efficient way to collect survey information when it is impossible or not practical to make a complete list of everyone in a target population. As a first step, clusters which are naturally occurring units, were identified for each group. The clusters for FSWs were brothels, and for police/military men were departments and battalions. For beer promotion women, the beer companies that employ the

women each served as a cluster. Heavy traffic street corners such as surrounding central markets were clusters for motodriver and vocational schools were the cluster for vocational students. Finally, factories served as clusters for working women in cities that had factories, as well as government agencies employing women in manual labor, large hotels, and markets with vendors. All clusters and the number of individuals in each cluster were listed. Clusters were then randomly selected from the list and all members of the selected cluster interviewed until the target sample size was reached for that group. For each of the five groups, the proper channels and local authorities were used to gain access to the survey populations.

Interviews were conducted face-to-face by gender-matched interviewers described below. Supervisors were present to encourage a private setting for the interview - though this was not always achieved. All questionnaires were checked in the field by supervisors to improve data quality before the data was entered. Data entry was done in the NAP office in Phnom Penh in EXCEL. Analysis was done in SPSS/PC and STATA.^a

At the time of data collection for BSS in March 1997 there was some concern that the core groups (Military/Police/ and brothel based FSWs) were being "overstudied". A number of studies had just been conducted in the same cities with these same groups and the NAP was concerned that other research had been done in these groups that was duplicative. Moreover, both NAP staff at the provincial level may have been fatigued from so much recent research. Therefore, an attempt was made to collaborate with other studies such as The Evaluation of Peer Group Education funded by GTZ. For the first round of the BSS, data from other sources will serve for the FSWs in Battambang (the GTZ study and the AIDSCAP STD/HIV Prevalence and Etiology Study). The questionnaire for GTZ was then amended by adding 8 questions essential for BSS and these were included in the data collected from FSWs in Sihanoukville and Kampong Cham. Thus, the BSS did not collect data in the first round from FSWs in Battambang, Sihanoukville, or Kampong Cham. Future rounds of the BSS will include FSWs but will collaborate with other studies as much as possible by including additional questions, but while maintaining the core questions for BSS consistent.

The final numbers of risk group members interviewed by site are in Table 3 below.

Table 3. Risk Groups By City

	Phnom Penh	Battambang	Sihanouk -ville	Kompong Cham	Siem Reap	Total
FSWs	124	NA	NA	NA	121	245
Police/Military	57	94	93	81	82	407
Beer Promotion	164	114	116	110	77	581

^a Additional information on the interview process is provided in a following section.

Moto Drivers	112	112	116	112	117	570
Working Women	267	271	280	281	271	1370
Vocational Students	438	261	62	282	138	1183

VII. QUESTIONNAIRES

Experience with the BSS in other countries has found that a questionnaire that takes 15 to 20 minutes per respondent is best. Too short a questionnaire was found to not allow respondents to have a chance to get comfortable with the interviewer, which is necessary to before the interviewer can ask personal details of sexual behavior. Too long a questionnaire was found to make the field work and data processing too expensive and slow and places a greater burden on respondent participation. The topics included demographic information such as each person's age, marital status, education, what they think their friends behavior is, and where they go for treatment for STDs. But most of the BSS questions asked about behavior such as number of different sex partners by type and condom use. Certain parts of the questionnaire were the same for all groups while other segments were specific to the subgroup. Questions and wording were adapted from existing, pre-tested data collection tools used in STD/HIV Prevalence and Behavior Study.

Pretests: Since an interest was expressed to utilize self-administered questionnaires for the BSS general population groups, this approach was pretested by interviewing face to face an equal number of men and women from a vocational school as were administered a written questionnaire. The result was that men seemed to give comparable answers when either interviewed or writing, whereas the women left many responses blank. Moreover, the pretest revealed that vocational schools are not good settings to interview women about sexual behavior (not one woman admitted to being sexually active - which, judging from the responses of males, is not likely). The vocational students represent the best group to use self-administered questionnaires, however, since they are of high educational level and thus have adequate reading comprehension needed to fill out a written form. Therefore, self-administered questionnaires were used for collecting BSS data only from men from vocational schools and all other groups (male and female) received a face-to-face interview. Women working in hotels, factories and government employment were selected to replace vocational female students, but were interviewed face to face.

Pretests were also conducted with moto and cyclo drivers, FSWs and beer promoters and questionnaires were revised repeatedly. The final versions of the questionnaires represented a fourth generation of the original forms insuring clarity in question style and recording format.

In the pretests, the topic of boyfriends/girlfriends/sweetheart in Cambodia emerged as a subject that is poorly understood by researchers. The definitions of these terms among different groups

is not clear, yet it does seem likely that such terms have different meanings across groups. For example, men may refer to a FSW that they have sex with more than once as a "girlfriend". Beer promoters, on the other hand, may call "boyfriends" regular partners that are non-commercial but there may be an exchange (goods or services) for sex that is involved in these partnerships. Therefore, a "boyfriend" of a beer promoter may be different from a "boyfriend" of a working woman. The definitions of such terms need clarification in more indepth research. Nevertheless, it is important to track over time how the dynamics of such casual or non-marital and non-commercial sexual partnerships change over time within groups. Recent data suggesting a rise of sexual activity with girlfriends among men in Thailand and concurrent decline in commercial sex points to a need to track such trends in Cambodia.

VIII. DATA COLLECTION TEAM

Supervision: Five supervisors, four from the NAP national office in Phnom Penh and one from the Ministry of Health Venerology and STD Center, made up a coed supervisory team led by a team leader. All supervisors underwent a training on behavioral research, kinds of studies done and for what purpose.

As additional training, supervisors acted as interviewers in the first set of pretests of the questionnaires, conducting the interviews themselves and refining field protocols for interviewing. Thus, all supervisors were experienced interviewers from previous studies but also with the questionnaires for this particular study. As supervisors for BSS, these individuals were expected to instill good standards of data collection.

Interviewers: In a previous USAID-funded project on STD prevalence in Cambodia, joint survey teams successfully interviewed men and women across a range of sex behavioral variables in three provinces. A similar approach was adopted for the BSS. Interviewers from each of the five sites attended an Interviewer Training Course in Phnom Penh the week of March 25. There were 27 participants, 17 women and 10 men recruited from Ministry of Health departments in each province that was a BSS site. The mean age of the women participants was 32 years and 29% were not married (5/17). The men were slightly older, with a mean age of 35 and 20% not married (2/10). The participant list is included in this report as Attachment B.

Half the training was didactic on the purpose of the BSS, importance of confidentiality, interviewing on sexual behavior, interviewer skills and rules, and the study population. This part was conducted interactively with the participants and was alternated with classroom interviewing practice. The other half of the training was outside the classroom where all participants were taken out to practice interviewing in the field. The field practice was heavily supervised (all five supervisors accompanied the participants) and they were divided into male and female groups. The men were taken to different markets and practiced interviewing moto-taxi drivers on the street. The women were taken to a red light district (Tuol Kork Dike) where they conducted interviews in brothels with FSWs. On another day, practice was at a beer company where beer promotion women were interviewed and the men went to a different market. After each field practice, there was a debriefing and guided discussion of the fieldwork experience that allowed for clarification of the questionnaires, followed by more didactic training. The practice interviews served as final pre-tests of the questionnaires as well and the interviewers'

suggestions and issues were incorporated into the final versions.

IX. RESULTS

A. Basic Demographics for All Groups

BSS captured a relatively young population, although there are more older men than women in all risk levels. The age distribution of military/police men was the same as moto-taxi drivers, ranging from 18-55 years with 75% age 35 or less. The vocational students, as expected, were younger ranging from 13-41 years and the mean was substantially lower than for the other groups of men, 24 years versus 31 years. The mean age of the women was much lower, with the youngest being FSWs at 21.9 years, followed by beer promoters at 22.5 and working women at 23.3 years (Table 5). Moreover, the women in all groups were evenly distributed ranging from 18-34 years of age with 75% less than age 25 across all groups, although slightly higher for working women (27 years). The young age of this sample is reflected in the low percentage of individuals with children. The police/military and moto-taxi drivers have the highest frequency of children (78% and 86%) but are also older as reported above and much more likely to be married (Table 5). Almost equal percentages of women across the core, bridge, and general population report at least one child (respectively 31%, 29%, 30%). This suggests that childbearing does not vary greatly by social context. Young, low income women seem to bear children at relatively the same rate regardless of their occupation.

Table 5. Basic Demographics

	Brothel FSW	Military/ Police	Beer Promoter	Mototaxi Driver	Working Woman	Vocation Student
Mean Age	21.9	31.3	22.5	31.3	23.3	24.0
% Married	51.2%	67.0%	22.2%	85.4%	27.9%	23.2%
% Arranged Marriage	--	81.0%	68.3%	84.9%	75.9%	--
Age first married (mean)	17.1	19.9	18.3	21.9	21.0	24.9
% ≥ 1 child	31.4%	78.4%	29.0%	85.5%	29.8%	—
% ≤ 6 yrs School	93.1%	28.8%	59.6%	37.6%	53.7%	0%

Most of the men in the core group and bridge group were already married (67% and 85%) and a surprisingly high percentage of FSWs reported being married (51%) as shown in Table 5. Most of the women in the bridge and general population were still single (only 22% and 28% married) as were most vocational students (only 23% married). High percentages of married individuals

in all groups reported having an arranged marriage with men reporting the most arranged marriages, 81% police/military and 85% of moto-taxi drivers, but many beer promoters (68%) and working women (76%) also had marriages arranged by their family.

The greatest difference between the groups is seen in education level shown in Table 5. No formal education is more common for FSWs (42.9%), followed by beer promotion women (9.1%) and working women (5.3%). In contrast, there is no more than 2% of men with no education in any group. When the percent of individuals with six year of schooling or less (primary school) is considered, the differences by group persists. Again, the FSWs lag tremendously behind the others with 93.1% having only primary education followed again by beer promoters (59.6%) and working women (53.7%). More moto-taxi drivers had only primary education (37.6%) then police/military (28.8%) and by definition all vocational students had more than a primary education.

B. Sexual Activity Across Groups

To explore the actual levels of risk between groups, it is important to compare basic measures of sexual behavior that are shown in Table 6. Differences between variables within each risk group were tested for statistical significance using Chi Square. The mean age at first sexual activity is youngest for sex workers (17.6 years, median 17 years) followed by beer promoters (18.4 years, median 17.8 years). The age of first sex is then strikingly close for the all groups of men with means of 21.8 years military/police, 20.9 years moto-taxi drivers, and 21.6 years for vocational students. The age at first sex for working women is closer to the men (mean age of 20.7 years) than to the higher risk groups of women who clearly represent departures from normal sexual behavior in Cambodia.

What is strikingly different across the groups in Table 6, particularly for the women, are the percentages that have sexual experience (measured by those who provided an age of first sexual intercourse as greater than 0). There were few missing responses to this question. It was assumed that all FSWs are sexually active and as verification 100% responded with an age of first sex. Almost all police/military men (99.0%) and moto-taxi drivers (97.7%) reported an age of first sexual activity. The greatest difference, however, is between beer promoters (of whom 70.7% had ever had sexual intercourse) and the general population men and women. Much lower percentages reported ever sex among the low risk groups; 39.8% of working women and 57.5% of male vocational students.

Table 6. Intimate Relationships and Sexual Behavior

	Brothel FSW	Military/ Police	Beer Promoter	Mototaxi Driver	Working Woman	Vocational Student
% Report Age of First Sex	--	99.9%	70.7%	97.7%	39.8%	57.5%
% Sweetheart Ever	---	63.1%	---	64.7%	15.9%	35.3%

% Sweetheart Past Year	50.6 %	19.6%	50.1%	10.8%	8.9%	23.0
Age First Sex (mean)	17.6	21.8	18.4	20.9	20.7	21.6
Age First Condom (mean)	21.0	22.9	20.5	19.1	23.1	22.2
FP Method Use	96.3%	NA	52.8%	NA	70.3%	NA
% Condom use for FP	91.4%		11.4%		3.1%	
% Ever tested HIV	36.5%	27.5%	20.5%	11.1%	5.5%	11.4%

It is important is to look at the sexual experience among those who have never been married. For example, only 22.2% of beer promoters reported being currently married, with a surprisingly high percentage reported being divorced or separated (32.2%). That leaves 45.6% of beer promoters who have never married (263 women). Among the beer promoters who have never been married, 36.9% reported having had sexual intercourse (97/263). Among vocational students never married, 46.9% reported having sex (396/844) and only 5.5% (47/860) of never married working women report an age of first sexual experience. These numbers are as expected, with higher levels of sexual activity in the beer promoters who are shown to have much riskier sexual behavior than other urban Cambodian woman of the same age. Also as expected, the working women reported less sexually activity than their male peers, who are having pre-marital sex at almost ten times their rate. Figure 2 demonstrates pre-marital sexual activity for the middle and low risk groups. High risk men and women are not in the figure since virtually all are sexually active.

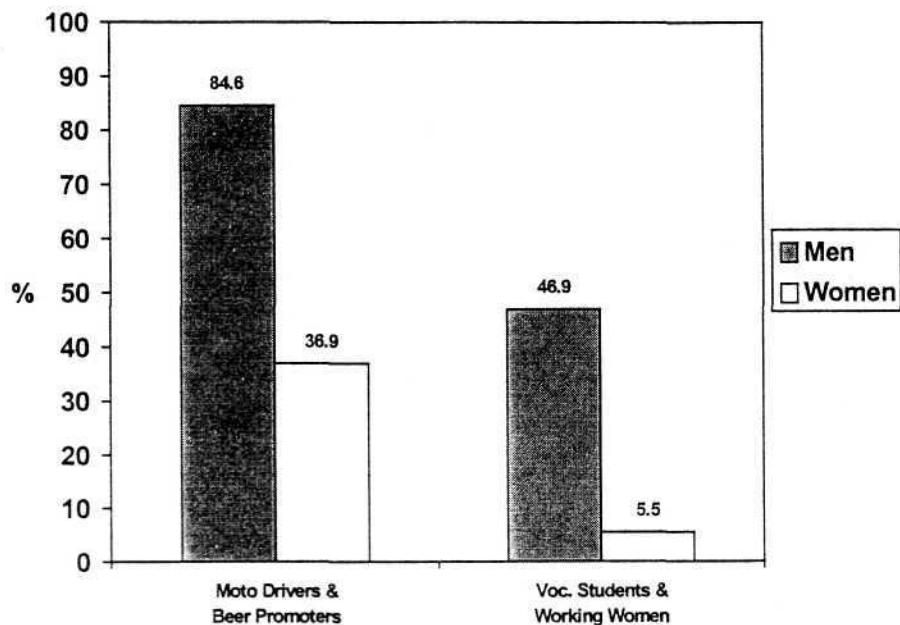


Figure 2. Percentage of Never Married Individuals Sexually Active

C. Non-Marital Partnerships: "Sweethearts"

Little is known in Cambodia about types of sexual partnerships that are non-marital and non-commercial. The double standard regarding sexual activity between unmarried young men and women in Cambodia and the expectation of virginity only for unmarried females described in anthropological study of urban Cambodians¹⁴ is certainly not a cultural anomaly as it is found in almost all Asian cultures. What is a bit distinctive for Cambodia is that the anthropological study claims it is "...unthinkable in the Cambodian cultural context for there to be open sexual relationships, apart from the episodic acts with sex workers, between young couples." The norms about sexual behavior for unmarried women describe an expectation that women have only formal partnerships such as a fiancé or a husband. In the study mentioned above, however, young urban women reported having "sweethearts" and "lovers" with whom they are sexually active. Therefore, it was considered possible and important for the BSS to measure the existence of such partnerships among unmarried young people in Cambodia.

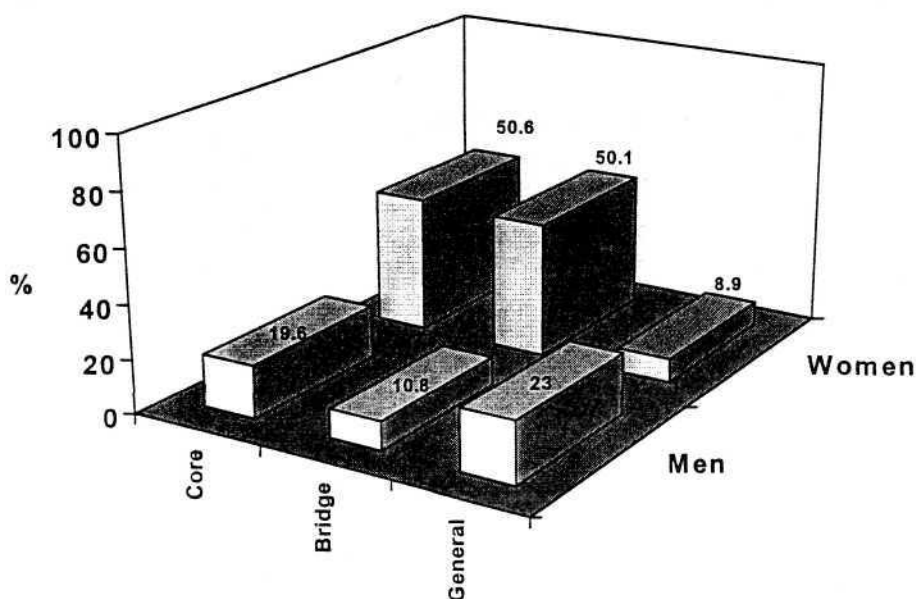


Figure 3: Percent of Men and Women by Risk Group With "Sweetheart" in the Past Year

BSS questioned women about having a "sweetheart" ever and in the past year (Table 6). Much higher percentages of men reported ever having sweethearts than women, more than twice the percentage in each level of risk (excluding FSWs). As shown in Table 6, equal percentages of military/police and moto-taxi drivers reported ever having a sweetheart (63.1% vs. 63.7%) but almost twice as many police/military as mototaxis had a sweetheart in the past year (19.6% vs. 10.8%). Many fewer women reported recent non-marital partnerships; only 15.9% of all working women reported ever having a sweetheart and 8.9% of all working women reported one in the past year. However, when only never unmarried working women are considered, 12.1% have had a sweetheart in the past year. A comparison of those with recent sweethearts is shown in Figure 2 above.

What is interesting is the differences between the risk groups of men regarding "sweethearts" by marital status. Significantly fewer married police/military and moto-taxi drivers report having "sweethearts" in the past year than their single peers, 13.1% of married policemen have girlfriends compared to 32.6% of single military/police ($p=.000$) and 7.7% of married moto-taxi drivers compared to 29.3% of single taxi drivers ($p=.000$). What is surprising is that more married vocational students report having "sweethearts" than any other risk group of married men and there the difference between married and single men is not statistically significant for vocational students: 19.4% married men versus 24.3% single men had sweethearts in past year.

B. Men: Core, Bridge, and General Populations Key Risk Behaviors

Commercial Sex: Figure 3 below compares men's commercial sex visits by risk groups. More men in the core group have had commercial sex both in the past year (77.9%) and in the past month (58%), followed by the bridge population (56.9% past year and 42.1% past month), and

finally those in the general population had lowest percentages of men reporting commercial sex activity with 36.5% in the past year and 26.7% in the past month. This figure demonstrates that the BSS risk groups do in fact reflect different levels of risky sexual behavior with those in the core having the most, dropping to the lowest percentages in the general population group. Finally, these numbers support our assertion that vocational students have behavior comparable to other general population Cambodian males as their commercial sex utilization is at a similar level to those reported in other recent surveys done of general population urban Cambodian males where 31% of men reported ever having commercial sex¹⁵ and 41% in the past year¹⁶.

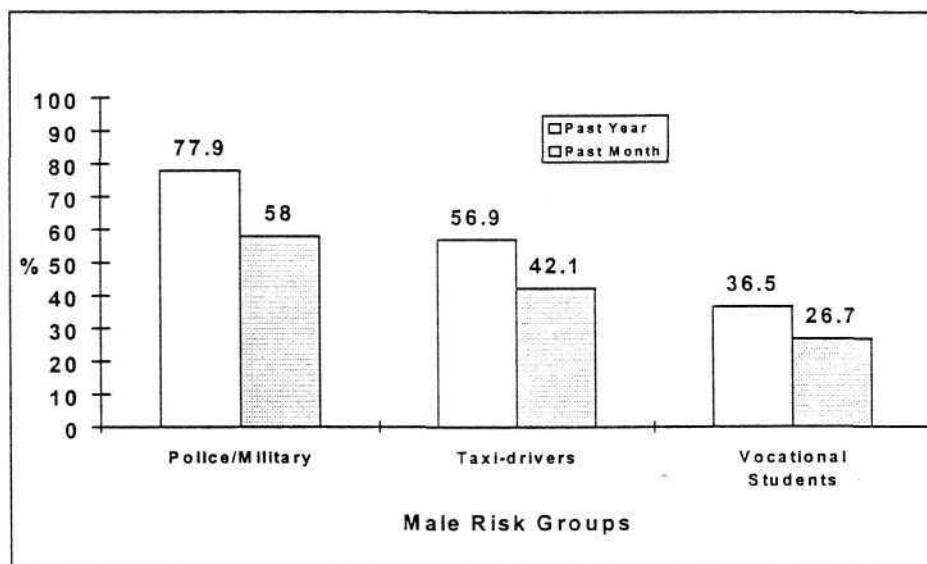


Figure 4: Commercial Sex: Last Year and Last Month

Marriage does affect the men's sexual behavior, reducing commercial sex activity although it still remains extremely high relative to Western society. Many married men still have frequent commercial sex, but to a lesser degree than their single counterparts in all groups but the students. For example, 49.8% of married compared to 73.9% of single police/military have had sex with at least one FSW in the past month. Less moto drivers overall have had sex with a FSW in the past month (63.6% single vs. 38.3% married), but the percent difference between married and single men is about the same as for the police/military. There is no significant difference, on the other hand, between the percent of married and single vocational students who had sex with a FSW in the past month (31.2% vs. 28%) but they report the lowest recent visit to a FSW among all groups of men. Of the 23.2% of the students who are currently married, 34.1% had sex with a FSW in the past year and 31.0% in the past month.

Sexual Activity Level (Numbers of Partners): Police/military men and moto-taxidriers were asked about the numbers of partners in the last month. The range was 0 to 30 women for both groups with a slightly higher mean for police/military (2.33) than for motodriers (1.9) but a median of 1 woman for both. When compared by marital status, there were statistically significant differences in numbers of partners by marriage for both groups of men. Many more unmarried men had no partners in both groups and although more single men had sex with more

than 1 partner (50.0% of single compared with 48.3% of married police/military and 38.3% single vs. 36.4% married mototaxi drivers) there was only a 2 percentage point difference in each group. This shows as above that while most married men have sex with only one woman in the past month (twice as many as single men) there are still significant percentages of married men who have more than one partner in one month. As shown above, that partner tends to be a sex worker. Finally, sex behavior reported in the past month seems to be consistent with data for general population men in Phnom Penh (in another survey) where only 46% of men were found to have more than one partner¹⁷.

Condom Use: The sexual behaviors representing highest risk for STD/HIV is sex with a non-regular partner without a condom (especially with FSW). Men in all BSS risk groups were asked about their frequency of condom use in both commercial sex and with girlfriends. Given the relative "youth" of the Cambodia's national AIDS program, reported use of condoms in commercial sex is extraordinarily high. Condom use at last sex is compared by partner in Figure 4 across all groups and reveals much higher condom use in commercial sex than with a girlfriend/sweetheart for all groups of men, 67 percentage points more of police/military, 47 percentage points more of motodriver, and 50 percentage points more of vocational students used condoms at last sex with FSW than with sweetheart. When men were asked about the frequency of condom use with FSWs, the differences are striking by risk group (see Figure 5). Only 54.2% of police military report always using condoms and 9.3% never use them with FSWs and condom use among motodriver is very close to that of the police/military (53.8% always use and 15.3% never use). The vocational students, on the other hand, report much greater condom use with 71.5% reporting always using condoms and 7.5% never using. The same pattern was found for sweethearts except even fewer police/military report always using a condom than motodriver (6.0% vs. 14.5%) and most police/military and motodriver never use condoms with girlfriends 69.9% and 63.2%, respectively. Again, the numbers from another general population survey of urban men are comparable to those found in BSS as 66% of men reported using condoms every time with FSW, falling in the middle of our risk groups¹⁸.

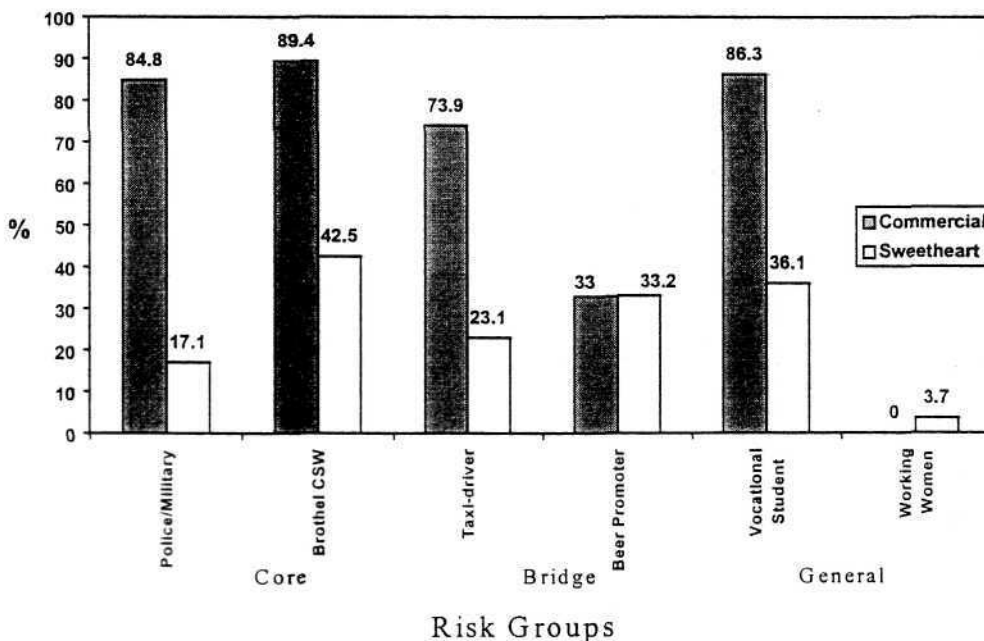


Figure 5: Percent of Risk Group Members Using Condom at Last Sex By Partner Type

Although married men are less likely to have commercial sex in all groups, they are also less likely to use a condom during commercial sex. At last commercial sex, 81.9% of married compared to 89.5% of single military/police, 71.9% of married versus 82.8% of single motodriver, and 70.7% married compared with 89.2% single students used a condom at last sex. Moreover, condom use with wives is low as expected. Of married students 25.7% used a condom the last time they had sex with their wives but only 4.5% of police and 4.1% of married moto drivers used a condom every time they had sex with their wives in the past month.

Factors that determine condom use with FSWs were explored such as age, educational level, city of residence, and numbers of partners. For police/military, there were statistically significant differences by education, city of residence, and numbers of partners in consistent condom use with FSWs. More of those with greater years of schooling reported always using condoms with FSWs than with less schooling ($p=.05$); most reported always use of condoms in PNP (87%), followed by Kompong Cham (67%), then Siem Reap (62.5%) Battambang (51%), and lowest use (21.8%) in Sihanoukville ($p=.000$); and as numbers of reported partners increased percentages reportine always use decreased ($p=.001$). Condom use with FSWs among moto-taxidriver was significantly associated only with city of residence with highest percentages reporting always use in Phnom Penh (76.8%) followed by Siem Reap (57.8%), then Battambang (55.4%), Kompong Cham (40.7%) and lowest again (39.2%) in Sihanoukville ($p=.000$). There was no association between age, education, or numbers of partners for motodriver. Finally, the same pattern was found with vocational students where only city of residence was associated with always use of condoms with FSWs ($p=.000$), 83.7% in Phnom Penh, 74.8% in Kompong Cham, 67.4% in Sihanoukville, 64.0% in Siem Reap, and the lowest percentage in Battambang (55.1%). Neither age or sexual activity level affected condom use with FSWs.

Perceived Peer Behavior (i.e. Social Norms): Questions on perceived peer norms were **only** asked of the higher risk male groups (police/military and moto-taxi driver) because vocational students had self-administered questionnaires that excluded questions for the sake of simplicity. Almost the same percentages of police/military and mototaxi driver reported that all their peers had pre-marital sex (respectively 19.2% and 21.1%) and that none had sex before marriage (4.4% and 4.0%). When asked how many of their friends ever had sex with a FSW, slightly more motodriver reported all (25.6%) than police/military (19.3%) but the most common response for both was "most" by 39.9% of moto-taxi driver and 50.5% of police/military and almost none reported "none" (1.6% and 3.2%). When asked how often they perceived their peers to use condoms with FSWs, most police/military said "frequently" (41.3%), always was 20.3% and sometimes (21%) with very few reporting never (7.5%). The moto-taxi driver followed the same pattern with the highest percentage reporting their peers "frequently" used condoms **with** FSWs (42.0%), or sometimes (23.3%), but always was less (17.8%), while very few said "never" (3.1%). There were very few men who responded "don't know" to any of these questions (about 10% per question). It is interesting to note that men in both groups reported using condoms with FSWs more consistently than they believed their peers to use condoms, although higher percentages of them reported never using condoms themselves than believed peers never used condoms.

C. Women: Core, Bridge and General Populations Key Risk Behaviors

Sexual Activity: On their last working day FSWs reported a mean of 3.5 clients, 3.6 sexual acts and use of 3.4 condoms. The average numbers of clients FSWs reported is 4.1. Most FSWs report currently having regular clients (65.6%), reporting a mean of 4 regular clients per FSW. The mean monthly income reported for FSWs is 146,900 Riels (US \$59.00) with a median of 100,000 Riels (US \$40.00). By far most FSWs met clients in the actual brothel (83.7%) followed by hotels (9.8%). The average size of a brothel was 6.4 FSWs and the mean length of time the FSWs had been at a brothel was 6 months, with a median of 3 months. Only 7.4% of the FSWs had been at the same brothel one year or more yet 29.5% had been there one month or less reflecting high turnover and short duration of stay at a particular brothel. FSWs reported being mostly paid per man (34.0%) although many also reported being paid only by month (29.9%) with less reporting daily pay (18.9%). The brothel owners are reported to pay FSWs half the cost of sex with her by 48.4% of FSWs. Although many FSWs don't know what percentage they receive (23.8%) or receive all the payment from the client (17.2%) there are FSWs who report not being paid or receiving nothing for performing sex with a client (10.7%). The mean cost of sex for FSWs was 10,714 Riels (US\$ 4.00) with a median of 5,000 Riels (US\$ 2.00).

A total of 46.9% of beer promoters reported sexual activity in the past month, with a mean of 6.4 episodes in that month. About one out of five (21.1 %) beer promotion women admitted to having sex for money or gifts, but 49.6% reported having sex with a boyfriend/sweetheart. The mean number of times beer promoters reported sex with their regular partner in the past month was 6.5 but 53.1% reported no sexual intercourse in the last month.

As mentioned above, only 15.9% of working women reported ever having a sweetheart, and only 8.9% had one in the past year (Figure 2). It is interesting that almost all working women who had sweethearts reported having sex with them, 13.5% of all women compared to the 15.9% who reported a sweetheart - only a two percentage point difference. Among the 29.2% of working women who reported being sexually active in the past month, the mean number of times they had sex with their regular partner was 5.1 and the median was 3.5 times, reflecting less sexual activity among working women than beer promoters with a regular partner.

Condom Use: While only 42.0% of FSWs reported always using condoms (Figure 5), another 45.7% said they use condoms most of the time with clients (total of 12.3% who only use condoms sometimes or never with clients) even though 93.0% of the FSWs report condoms available at their workplace. A total of 89.4% of FSWs reported condom use at last sex with client (Figure 4).

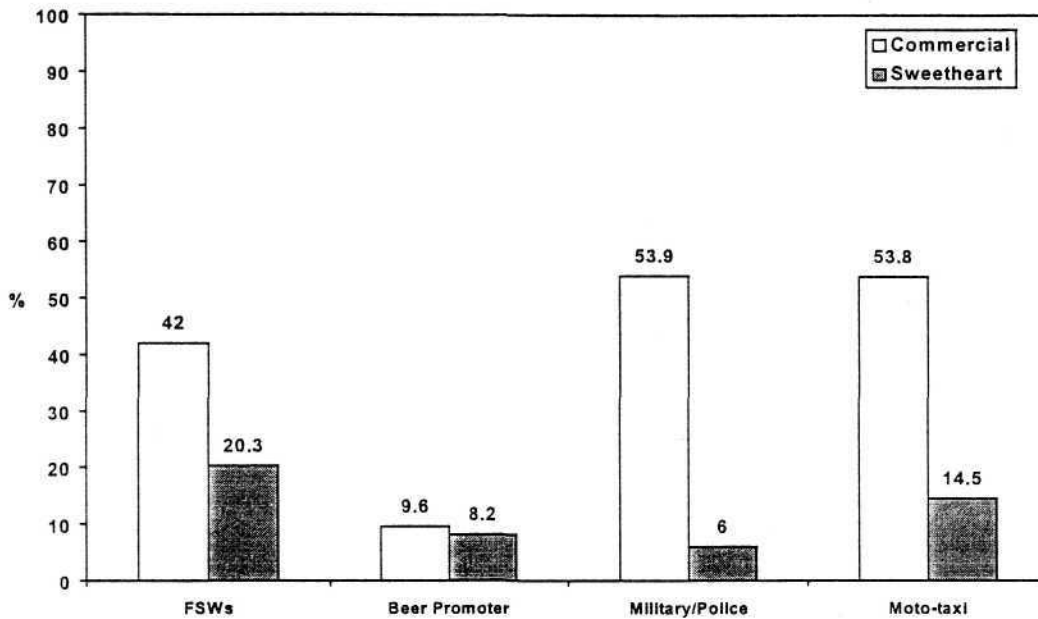


Figure 6: Percent of Risk Group Members Always Using Condoms by Partner

Condom use is less with regular clients, as 75.1% report condom use last sex with a regular client but only 37.7% report always using and another 38.2% report using frequently which leaves 24.1% using condoms only sometimes or never. Many FSWs also report having had a sweetheart or boyfriend in the past year (50.6%) whom they use condoms with least of all their partners. Only 42.5% of FSWs reported using a condom the last time they had sex with their sweetheart/boyfriend (see Figure 6). Finally, 50.9% of FSWs report never using condoms with boyfriend/sweetheart, and only 20.3% always use condoms with them. Clearly, the message about condom use has been accepted for commercial sex encounters much more than for non-commercial or semi-commercial encounters. For Cambodian FSWs, the same patterns hold true as found in other countries and with other groups in this study; as intimacy and familiarity increases between partners, regular condom use decreases (Figure 6 below).

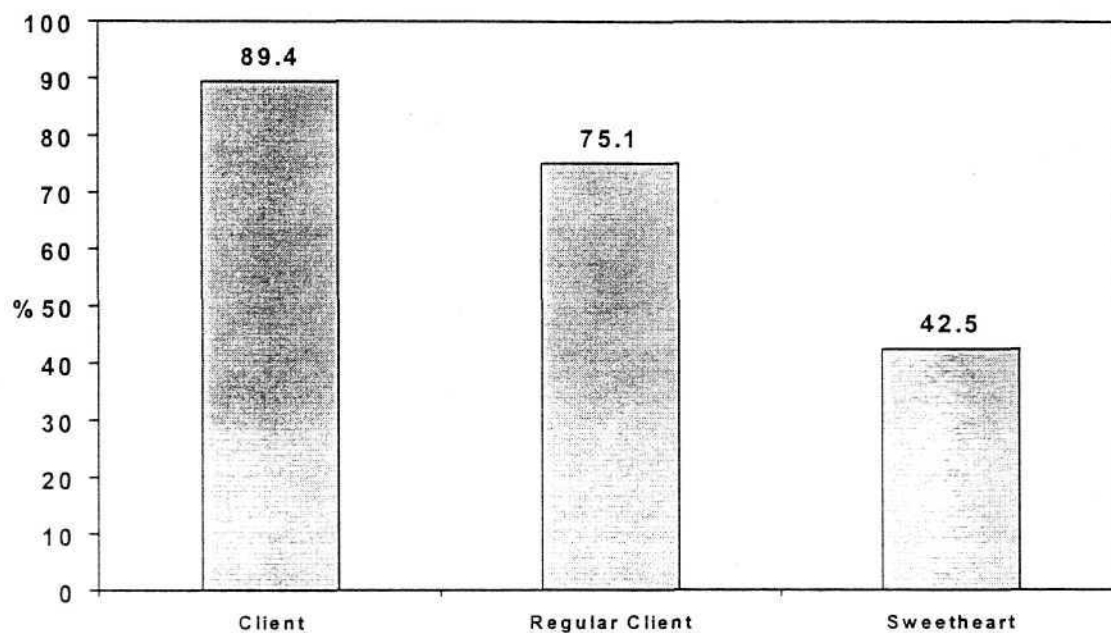


Figure 7: FSWs **Condom Use at Last Sex by Partner Type**

Factors affecting condom use for FSWs were city of residence with surprisingly and significantly ($p=.04$) more FSWs in Siem Reap always using condoms (48.8%) than in Phnom Penh (35.5%). However, there was no difference by condom use at last sex between cities. Those with more partners were slightly less likely to report condom use at last sex; 94% of FSWs with less than three partners (the median) on the last day compared to 93.3% with 3 partners and only 81.9% with more than three partners ($p=.01$) but this was not significantly associated with always using condoms. Ever having an HIV test was significantly associated with both condom use at last sex (95.5% had an HIV test versus 85.5% who did not have HIV test) $p=.02$ but not with always use. Finally, age, education, time in the brothel, and amount paid were not significantly associated either with condom use at last commercial sex or with always using condoms during sex with clients. Finally, when the association between always using condoms and using them at last sex was explored for commercial sex, there were significant differences ($p=.01$). Among always users, more were likely to use condom at last sex than not (44.8% vs. 19.2%) and among those using condom at last sex, more reported always using (95.2% vs. 85.2%).

Condom use among beer promoters is quite low given their level of sexual activity. Condom use at last sex with sweetheart/boyfriend was only 33.2% and only 8.2% of beer promotion women reported always using condoms while 62.1% reported never using condoms with their sweetheart/boyfriend. When asked about condom use in commercial sex, the beer promotion women reported almost identical levels of condom use: 33.0% used a condom at last commercial sex while only 9.6% always used and 57.8% never used condoms. This suggests that, unlike FSWs, beer promotion women either do not differentiate their behavior by partner type practicing the same level of condom use across partners, or the boyfriends/sweethearts are, in fact, commercial sex partners.

For beer promoters, there was a significant difference by city regarding condom behavior and by having been HIV tested, but not by age or educational status. By city, beer promoters in Siem Reap reported using condom at last commercial sex ($p=.000$) the most (69.4%) compared to Battambang (42.5%), Phnom Penh (28.2%) Sihanoukville (18.2%) and least in Kompong Cham (11.5%). When consistent condom use is defined as reporting either "always" using or "frequently" using condoms during commercial sex, consistent use was associated with city ($p=.001$) with highest use in Siem Reap (9.1%), then Sihanoukville (6.0%), Kompong Cham (2.8%) and less than one percent reporting consistent use in Phnom Penh and Battambang. Having an HIV test was significantly associated with consistent condom use ($p=.002$) with more who had an HIV test (7.6%) than not having had a HIV test (2.0%). Condom use at last commercial sex was not significantly associated with HIV testing. Finally, it is important to note associations between condom use and commercial sex practice for Beer promoters. Of the 122 beer promoters who admitted to commercial sex in the past year (21.1%), 46.3% did not use a condom at last commercial sex.

As expected, condom use among the working women is extremely low. 95.4% of the women reported never using a condom. Among those who have boyfriends/sweethearts, only 3.7% reported using a condom the last time they had sex (see Figure 4) and 93.8% reported never using condoms with him. Only one of the 1,370 working women reported always using a condom with their sweetheart! There are too few women in the general population who used condoms to differentiate between them statistically by their individual characteristics.

Perceived Peer Behavior (i.e. Social Norms):

Among beer promoters, few reported that all other beer promoters have sex before marriage (less than 1%), the most common reply was "most" when asked how many (46.9%) with many also reporting "few" (25%). When asked how many of their peers have boyfriends, 60.6% reported "most" and another 17.7% reported few with almost none reporting all or none. Beer promoters perceived that "most" of their peers with boyfriends/sweethearts have sex with them (49.9%) while some reported "few" of their peers (20.8%). Again, very few beer promoters saw all or none of peers as being sexually active with sweethearts. It should be noted that there was a high rate of non-response on these questions with about 25% responding "don't know". When asked about their peers' condom use with sweethearts, however, "don't know" responses jumped to 75.6%. The largest percentage was 11.6% of beer promoters who reported that their peers "sometimes" use condoms with their sweethearts/boyfriends. Finally, beer promoters were asked how many of their peers they perceive to have sex for money or gifts. The largest percent responded "most" (45.6%), followed by "few" (22.6%) with almost none reporting "all" or "none" of their peers had commercial sex and 29.2% responded don't know. When asked about peers' condom use during commercial sex, the most common response was "don't know" (70%) and just as they responded regarding sweethearts, beer promoters believe other beer promoters use condoms only "sometimes" (14.8%) or "frequently" (11.8%) but neither "always" or "never". When compared with their own use of condoms, it is clear that there are not strong social norms regarding condom use in this group, and their own use is higher than what they perceive their peers' condom use to be.

Working women believe their peers to be not very sexually active, responding that "few" (20.5%) or "none" (20.2%) have sex before marriage while many claimed they did not know (55.5%). The same is true for sweethearts/ boyfriends; most working women believe few of their peers (27.3%) or none (17.0%) to have sweethearts but 47.7% replied they don't know. Equivalent percentages perceived peers to have sex with sweethearts (20.4% "few" and 15.3% "none" with 60.5% "don't know"). This supports the assertion that there are few non-sexual relationships between unmarried men and women in Cambodia and that the term "sweetheart" refers to a sex partner. Finally, most working women have no idea about the condom use of their peers (89.4%). For those reporting peers' condom use with sweetheart, the most common response category was "none." Therefore, norms about condom use do not seem to have reached young working women, even those that are engaging in pre-marital sexual relationships.

E. Health Status and Health Care Seeking For All Groups

While self-reported symptoms do not accurately represent a measure of STD, the BSS collected data on symptoms for purposes of comparisons with other countries and over time in Cambodia and to understand health seeking behavior. When asked about abnormal discharge from their penis (see Figure 7), the percentages reflect the risk category with more men in higher risk categories responding affirmatively (20.5% of military/police; 14.9% of moto-taxi drivers; and 3.6% of vocational students). For women, self-reports of abnormal vaginal discharge must be interpreted with extra caution as these clearly do not reflect STD prevalence given the high levels of asymptomatic disease and that vaginal discharge may result from non-sexually transmitted infections. Nevertheless, the same pattern for the female risk groups reporting abnormal discharge is seen as for the men: 47.8% of FSWs, 26.3% of beer promoters, and 24.7% of working women reported abnormal vaginal discharge in the past year (Figure 7). FSWs were also asked about the past three months and 42.5% reported having abnormal vaginal discharge.

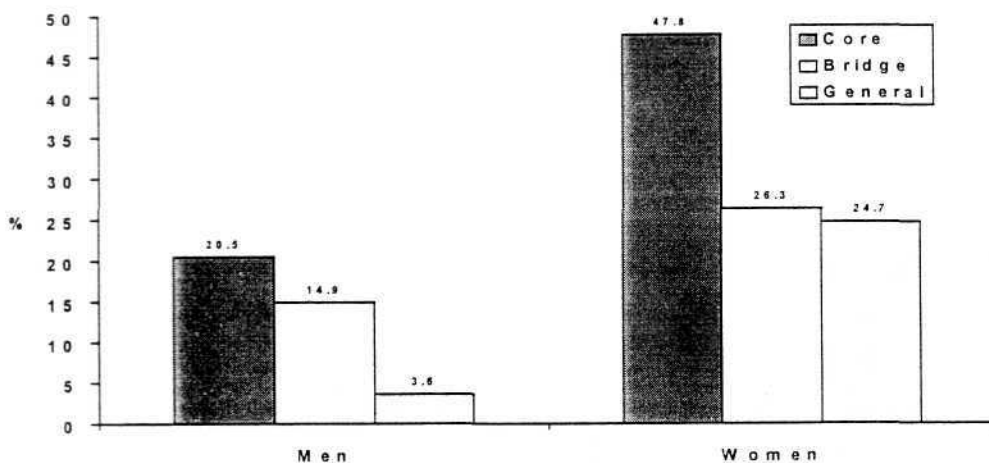


Figure 8: Percent of Risk Group Members Reporting STD Symptom in Past Year

When asked where they sought care the last time they had unusual discharge from their penis, a high percentage of military/police reported going to a pharmacy (40.2%) or not getting care

(25.0%) (see Figure 8). Many also went to a medical provider (18.8%) or a traditional provider (15.9%). Most moto-taxi drivers who experienced symptoms appeared to not seek care (41.9%) or went to a pharmacy (36.0%) with very few getting care from a health facility or provider (10.3%) and more going to a traditional provider (11.8%). What is interesting is the care seeking behavior of vocational students in comparison to the other men. Most vocational students went to a pharmacy (30.4%) but many also went to a medical provider (20.3%) or traditional healer (15.9%) and while some did not get care at all (21.7%). Many more vocational students actually saw a health provider of some sort than the other groups of men. Moto drivers were more likely to report "no treatment" for an STD symptom than the other two BSS populations, as only half as often as the other groups of men (42% vs only 25% of military and 21.7% students).

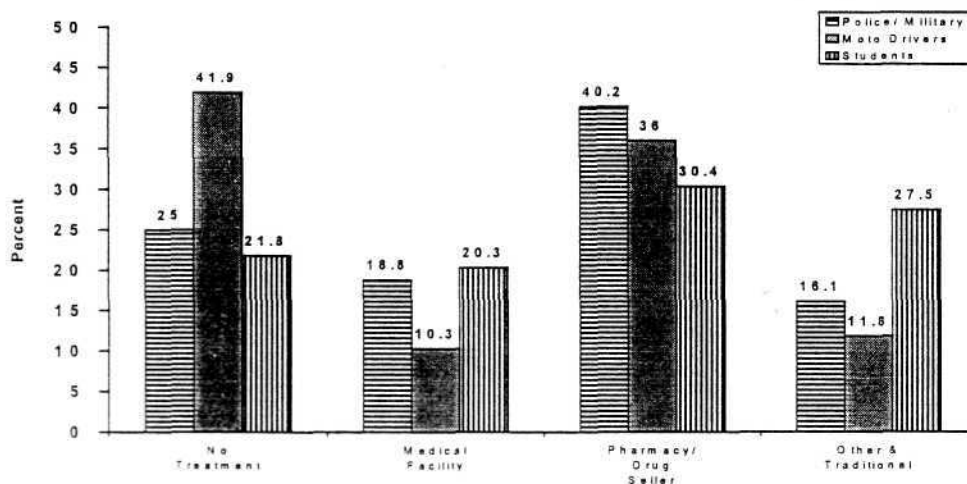


Figure 9: First Source of Treatment for last Unusual Discharge - Male Risk Groups

When asked about source of care, most FSWs rely for medical care in general on the brothel owner (60.8%) and drug vendor (26.5%) but for vaginal discharge most obtain care from a drug vendor or pharmacist (41.6% together). Beer promoters, on the other hand, also reported seeking/obtaining treatment first at a pharmacy (46.9%), but less went to a medical provider (19.4%) and 13.1% to a traditional practitioner. This leaves 18.8% of beer promoters not treating their discharge. Finally the findings on the treatment seeking for working women was greatly different. The percentage of working women who did not get treatment (41.5%) the last time they had unusual discharge was more than twice the percentage of beer promoters and four times the percent of sex workers (10.2%) that did not get treatment. The most common source of first treatment was a pharmacy (29.5%) followed by a medical facility (20.8%) or traditional doctor (8.2%).



Figure 10: First Source of Treatment for last Unusual Discharge - Female Risk Groups

The percentage of risk group members tested for HIV follows their level of risk as FSWs have been tested the most, followed by police/military and beer promoters. It is important to note that the same percent of beer promoters who practiced commercial sex in the past year had an HIV test (20.5%) as did not practice commercial sex. It is not surprising that similar percentages of moto-taxi drivers and vocational students have been tested, since their level of risk behavior is not that different as shown in Figure 10. Finally, as expected, few women in the general population have ever had a HIV test.

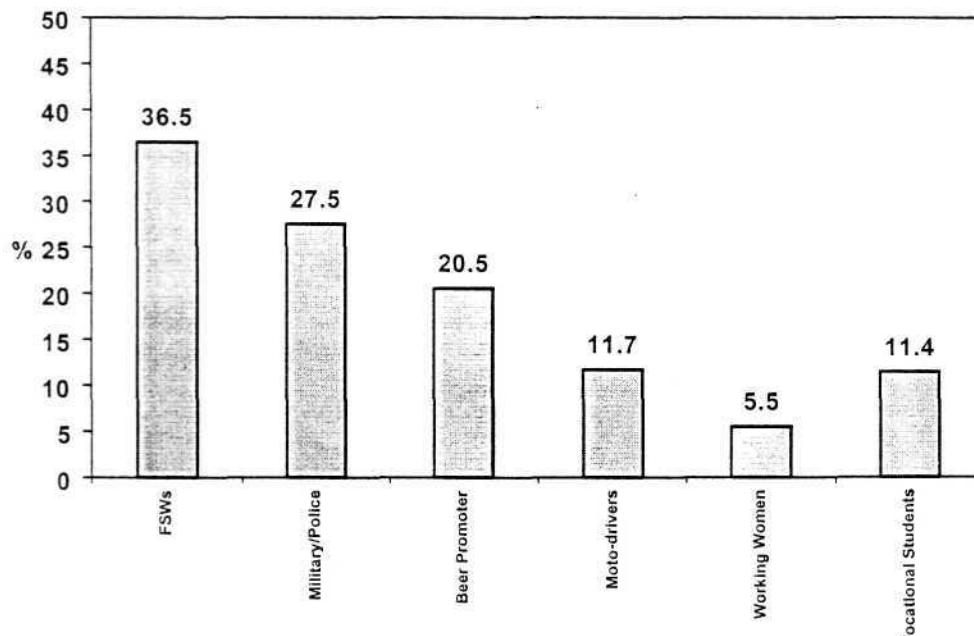


Figure 11: Percent of Risk Group Members Ever Having HIV Test

VI CONCLUSIONS AND IMPLICATIONS

Over four thousand Cambodian men and women were interviewed in mid-1997 to explore the dynamics of sexual risk behavior in the context of an expanding HIV epidemic. Purposefully, men and women were chosen who had presumably low, moderate and high levels of potential exposure to HIV infection. Indeed, the survey results confirmed that the sample populations accurately reflected these three levels of risk. However, it is important to emphasize that the samples are not necessarily representative of the Cambodian population in general. Instead, the levels of risk as measured in this behavioral surveillance survey can only be compared to values found in subsequent rounds among the same populations.

The more intriguing findings of the 1997 round are highlighted below along with some *implications for the NAP prevention program strategy (in italics)*.

- There are extremes of risk behavior for HIV in Cambodia ranging from the "core" populations of brothel sex workers, military and policemen to blue collar women and male school youth. ***The NAP behavior change strategy must continue to take this continuum of risk into account by clearly segmenting the target audience and tailoring prevention communication accordingly.***
- There also exist male and female bridge populations of unknown size, who have unprotected sex with both high risk and low risk partners. This study confirms that there is a direct pathway for HIV to move from pockets of high prevalence to those of currently lower prevalence if preventive action is not taken. ***These "bridge" individuals deserve special attention by the NAP as they will play a key role in determining how widely the HIV epidemic among the core is distributed through Cambodian society.***
- Not surprisingly, this study in urban areas of five provinces confirms that commercial sex is common, easily available and inexpensive. ***Should there be any parts of society that still deny the widespread practice of commercial sex in Cambodia, then the NAP needs to eliminate this denial.***
- The highest risk women have a relatively low level of formal education. ***This requires that prevention messages be delivered in a verbal or graphic medium.***
- An extraordinarily high percentage of married men in military and police occupations had commercial sex in the month prior to the interview - suggesting that this is a regular pastime before and after marriage. Among single men, the level is even higher. In neither case is condom use universally practiced. ***Cambodia must either create and market new sexual norms to reverse this pattern, or increase the social/legal penalty for paying for sex.***

- Nevertheless, given the relative "youth" of the Cambodian NAP, the reported levels of condom use in high risk settings by both men and women are impressive. ***The NAP needs to sustain high levels of condom use at the same time determining the factors that inhibit total use in casual and commercial sex.***
- Single Cambodian women are sexually active to varying degrees but condom use is very low in these relationships. ***The NAP needs a targeted campaign to promote low risk sex among couples who refer to their partners as "sweethearts".***
- There exists a group of men who have a large number of commercial sex partners and low condom use. These men probably account for a disproportionate amount of HIV spread in the high risk setting. ***The NAP might consider qualitative research with these men to determine ways to address risk - to the individual and society.***
- Indirect commercial sex carries a substantial risk given the variety of partners and relatively low condom use. ***The Cambodian BSS needs to continue to monitor the dynamics of indirect commercial sex relationships. As the stigma of HIV increasingly taints brothel sex, and crack downs recur, indirect commercial sex will increase.***
- Unreasonably low levels of sexual activity were reported by blue-collar (working) women. ***Qualitative, in-depth research is recommended with a sub-sample in future BSS rounds to assess the degree of under-reported sexual activity and associated risk.***

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- ¹⁷ Brown, J. 1997. *Ibid*.
- ¹⁸ *Ibid*.

List of BSS interviewers team, 1997

	No	Name	Sex	Age	Status	Place of work
Phnom Penh	1	Chher Bunthuo	M	33	M	Municipal AIDS office
	2	Mao Youleng	M	24	S	Municipal Health Dept
	3	Beng Horn	F	38	M	Municipal Health Dept
	4	Choeung Samean	F	44	M	Municipal AIDS office
	5	Chhoeu Siyutha	F	24	S	Municipal AIDS office
	6	Sok Phalla	F	31	M	Toul Kork dike Clinic
Sihanouk ville	7	Cheam Mong	M	38	S	Provincial AIDS office
	8	Touch Chy	M	30	M	Provincial Hospital
	9	Chim Samlot	F	37	M	Provincial AIDS office
	10	Ty Vibolla	F	32	M	Provincial AIDS office
	11	Chheng Sovanna	F	38	M	Provincial AIDS office
Battam Bang	12	Ham Rithy	M	37	M	Provincial AIDS office
	13	Sou Norath	M	31	M	Provincial AIDS office
	14	Chhe Chakriya	F	22	S	Hygiene Station
	15	Kim Sokhy	F	32	S	Hygiene Station
	16	Ean Kim Eap	F	27	M	Hygiene Station
Siem Reap	17	Bou Sarin	M	34	M	Malaria Unit
	18	Pen Sary	M	48	M	Provincial AIDS office
	19	Koam Sok Kheng	F	41	M	Provincial Hospital
	20	Chan Thorn	F	42	M	Provincial Hospital
	21	Lean Chan Monirak	F	29	S	EPI Unit
	22	Ea Sam Ath	F	37	M	Administrative Unit
Kampong Cham	23	Sim Khon	M	37	M	Provincial AIDS office
	24	Bany Vuth	M	35	M	Provincial Hospital
	25	Chhun Sopheap	F	24	M	Surgical Ward
	26	Seng Sopheata	F	25	M	Surgical Ward
	27	In Sonavy	F	24	S	Resucitation Unit