Condom Use and its Correlates Among Female Sex Workers in Hanoi, Vietnam

Trung Nam Tran,[1] Roger Detels,[1]* and Hoang Phuong Lan[2]

[1]Department of Epidemiology, UCLA School of Public Health, Los Angeles, CA 90095-1772

[2]Hanoi Dermatology & Venerology Center, Hanoi Health Department, Vietnam

Running Head: Condom Use and its Correlates Among Female Sex Workers in Hanoi, Vietnam

Corresponding author: Roger Detels, M.D., M.S., Professor and Chair of Epidemiology, UCLA School of Public Health, Box 951772, Los Angeles, CA 90095-1772; 310/206-2837; fax 310/206-6039; e-mail detels@ucla.edu

ABSTRACT

Knowledge of female sex workers' (FSW) condom use behaviors in Vietnam is important for predicting the epidemic and designing interventions. Four hundred FSWs in Hanoi were studied in 2002. Consistent condom use in the past month was higher with irregular clients (62%), less with regular clients (41%), and lowest with "love mates" (5%). Reasons for not using condoms were partner objection, condom unavailability, and belief of partner's disease-free status. Twenty-seven percent reported not always having a condom available. Thirty-five percent reported increasing condom use in the previous six months. Reluctance to ask clients to use condoms and condom unavailability were independently associated with inconsistent condom use with both irregular and regular clients. Older age was also associated with inconsistent condom use with irregular clients. Condom promotion should focus on FSWs and their partners. Negative attitudes towards FSWs and condom promotion need to be changed to reduce stigmatization of FSWs and to make condom use a norm in the society.

Key words: HIV/AIDS; sex workers; condoms; behavior; Vietnam

INTRODUCTION

HIV/AIDS is one of the most important health problems in Asia. Even though drug injection is an important mode of HIV transmission in some Asian countries, the HIV/AIDS pandemic in the Asian region has largely been fueled by heterosexual transmission. Female sex workers (FSWs) and their clients play an important role in the transmission of HIV in many Asian countries, including Thailand, Cambodia, Myanmar, and India (UNAIDS/WHO, 2003). Vietnam, a Southeast Asian country with a population of approximately 80 million, faces the possibility of a serious HIV/AIDS epidemic (Ruxrungtham et al., 2004; Ghys et al., 2003; Hien et al., 2004). According to the results of the HIV sentinel surveillance in 30 provinces in Vietnam, HIV infection has been increasing in all surveillance groups (Subcommittee on HIV/AIDS Surveillance, 2003). In Vietnam, outbreaks of HIV among the FSWs are occurring in different cities and provinces, and are likely to spread to their clients (National AIDS Standing Bureau and Family Health International, 2001; Subcommittee on HIV/AIDS Surveillance, 2003; Thuy et al., 1999). Although it is believed that many FSWs were injecting drugs and were infected through sharing of needles and syringes (National AIDS Standing Bureau & Family Health International, 2001; Tuan et al., 2004), the FSWs' sexual protection practices play an important role in the transmission of HIV to them and from them to their clients and other sexual partners. The transition of Vietnam from a centrally planned to a market-oriented economy, known as "Doi Moi" or "Renovation", has resulted in important economic achievements, as well as rapid cultural and social changes. "Doi Moi" has been disproportionately affecting women, leaving many unemployed and forced to find any means to survive, including prostitution (Hong et al., 2004; FAO and UNDP, 2002). In addition, urbanization, the loosening of traditional social controls, and the emergence of new avenues for sexual expression are encouraging the growth of

a market for commercial sex (Herdt, 1997). Since the FSW population in Vietnam is increasingly infected with HIV and the sex industry is expanding, heterosexual transmission is likely to become important driving force of the HIV epidemic in Vietnam.

Correct use of condoms is currently the most effective protection strategy against sexual transmission of HIV and STDs between FSWs and their clients (Davis and Weller, 1999; Feldblum *et al.*, 1995). In-depth knowledge of FSWs' condom use behaviors and practices, as well as the correlates of their use, is important for predicting the epidemic and for designing appropriate interventions among the FSWs. The need for this knowledge is urgent, given that the epidemic is still largely confined within high-risk populations but has the potential to quickly spread to the general population. Although condom use by FSWs has been studied extensively in other parts of the world (Basuki et al., 2002; Ward et al., 2004; Larsen et al., 2004; Witte et al., 2000), little information is available on FSWs in Vietnam. In our previous qualitative study among FSWs in Hanoi (Tran *et al*., 2004), they reported higher condom use with irregular clients, although use was still low with regular clients and their love mates. Drug use is common, especially among low-class sex workers. There are interactions between drug users and FSWs both through injecting drugs and unsafe sexual contact. In this survey among practicing FSWs in Hanoi, we examined their condom use behaviors and practices, and identified those factors that might influence their use.

METHODS

Subjects and Procedures

A two-stage cluster survey of 400 FSWs practicing in the community in Hanoi was conducted from June to September, 2002. In the first stage, the outreach peer workers who

worked in the field identified and mapped a total of 832 sex establishments/venues, including both establishment- and street-based locations, in all seven urban districts (Dong Da, Ba Dinh, Hai Ba Trung, Cau Giay, Thanh Xuan, Hoan Kiem, and Tay Ho) and one suburban (Gia Lam) district of Hanoi. The establishments included karaoke bars, hotels, massage parlors, and coffee shops. The middle-class FSWs were working in these establishments. The street-based locations included streets, parks, and around the lakes, where the low-class sex workers recruit their clients. We then used this map as a sampling frame to randomly select 80 establishment/venues (clusters) (40 from each establishment- and street-based group). In the second stage, we enrolled all potential subjects at each selected cluster. The only inclusion criterion was that the subject was a woman in Hanoi who had traded sexual intercourse for money or gifts within the last 30 days. Subjects were invited to the study center located at the Hanoi Center for Dermatology & Venerology, where they were interviewed face-to-face, using a structured questionnaire. The questionnaire asked for background information, knowledge of HIV, and HIV risk characteristics of the FSWs. All interviewers were female medical doctors who were carefully trained about the questionnaire and interviewing techniques. No personal identifying information was collected, and study participation was voluntary. The study was conducted with the understanding and consent of each participant, and was approved by the Institutional Review Boards of the University of California, Los Angeles and the Vietnam National Institute of Hygiene & Epidemiology.

Statistical Analysis

Data were entered using Epi Info 6.04d, and analyzed using STATA 7 (STATA, Inc., College Station, TX). Comparisons between groups were performed using the χ^2 or Fisher's

exact tests for proportions and t test for continuous variables. Multivariate logistic regression was used to examine the associations of independent variables with the outcome, simultaneously adjusting for potential confounders. The confidence intervals were adjusted for the design effects of the stratified cluster sampling. Variables were selected into the multivariate model based on the prior knowledge of the relationship between them and the outcome. If there was no prior knowledge, variables were selected depending on how much their presence/absence affected the confidence intervals of other variables in the model (Rothman and Greenland, 1998). A 10% cut-off was used.

RESULTS

General Characteristics

Even though the inclusion criteria included those who trade sex for money or gifts, no participant only traded sex for gifts or considered receiving gifts a major source of income. Table I summarizes the general characteristics of the study sample. Of the 400 study participants, 160 (40%) were middle-class sex workers who worked in karaoke bars, hotels, massage parlors, guest houses, dance clubs, or who stayed home and waited for calls from the above establishments (wholesale service girls). The remainder (60%) was low-class FSWs who worked on the street or in brothels. The mean and median ages of subjects were 30 and 28.5 years, respectively, range 16 to 56 years. Seventy-eight percent of subjects had attended secondary school or higher. The majority of subjects worshipped ancestors or did not follow any organized religion (78%). Most subjects were of Kinh (Vietnamese) ethnicity (96%). The majority were either living with boyfriends or alone (43% and 47%, respectively). Three-quarters (76%) of the subjects reported a moderate income, and only 6% said they had a high income compared to

other sex workers. One hundred and forty subjects (35%) had employment in addition to selling sex. Only 27% of the study population was native to Hanoi, with the remainder coming from all over the country, but mostly from the northern provinces. The mean age at first sexual experience was 19 years (ranging from 12 to 33 years). The mean and median durations in sex work were 3.2 and 2.3 years, respectively, and ranged from one month to 21 years.

Condom Use Frequency

For examining use behaviors and practices of the FSWs, we identified three different groups of sex partners: irregular clients, regular clients, and love mates. Irregular clients were defined as one-time clients (one-night stands) whom the FSWs do not know in advance. Regular clients were those with whom the FSWs had had sex more than one time, and they knew each other. Both irregular and regular clients pay for sex. “Love mates” was the term used for husbands and long-term boyfriends. Among 400 participants, 393 reported having irregular clients, 371 having regular clients, and 207 having love mates in the past month. Figure 1 shows the proportion of the two FSW groups who used condoms in their last sex acts with different types of sex partners. The two groups had similar rates of condom use with each of the three different types of sex partners. They reported high rates of condom use for their last sex act with irregular clients (94%), lower rates with regular clients (77%), and very low rates with their husbands or boyfriends (16%).

When asked about condom use frequency with partners in the last month, a similar pattern, but lower use, was reported. Table II illustrates condom use frequency in the past month with different types of partners for the two sex worker groups. Consistent condom use is defined as 100% use of condoms (always). Low-class FSWs reported using condoms more frequently

than middle-class FSWs. They were more likely to report consistent condom use with irregular clients (64%), regular clients (44%), and love mates (6.1%) than the middle-class FSWs, whose these frequencies were 59%, 38%, and 3.7%, respectively. Consistent condom use for both FSW groups, however, was low with all types of partners, especially with regular clients and love mates.

Reasons for Not Using Condoms

Table III presents the distribution of reasons given for not using condoms during last sexual encounter. Only a few FSWs did not use condoms with irregular clients (22 of 393). Partner objection was the most commonly cited reason (68%). About one-third (32%) reported that a condom was not available. Among those who did not use condoms with regular clients during the last sex act, partner objection was still an important reason, accounting for almost 40%. However, the major reason (86%) was that FSWs felt they knew their regular clients and believed them to be disease-free. Condom use was therefore, in their opinion, not necessary. More than a quarter of subjects (27%) thought condom use with regular clients was not necessary. Most study subjects did not use condoms with their husbands and/or boyfriends. Reasons given for not using condoms with love mates were similar to those for regular clients. Ninety-one percent of subjects believed that their partners were uninfected. Almost one-fourth (22%) mentioned condom use was not necessary, and 19% said they did not like using condoms with their love mates. Partner objection was reported only by 17% of the responding FSWs. No participant mentioned the expense of condoms as a reason for not using condoms with any of their partners.

Changes in Condom Use

Subjects were asked to compare their current condom use frequency with that of six months prior to the study. Figure 2 indicates that changes in condom use with irregular and regular clients were similar. Half of the subjects (50%) did not change their condom use practice, approximately 35% reported increasing condom use; about 5% reported decreasing use of condoms. For 11% of the subjects, this question was not applicable, since they had worked for less than 6 months as sex workers. Low-class FSWs were more likely to report increasing condom use than middle-class FSWs. Among low- and middle-class FSWs, the proportions of those who reported increasing use of condom with irregular clients were 40% and 25% (P=0.002) and with regular clients were 40% and 28% (P=0.02), respectively. Both classes of FSWs were equally likely to report decreasing or no change in condom use practice with irregular and regular clients.

Condom Availability

Almost three-quarters (73%) of the FSWs reported that condoms were available any time they were needed. This did not vary between the two groups of sex workers (P=0.75). Most subjects mentioned a pharmacy as a source for condoms (91%). Other important sources of condoms for the FSWs were karaoke/hotel/massage parlors, mentioned by 39% of the participants. As expected, middle-class sex workers were more likely to mention this source (49%). Health clinics and family planning centers played a modest role in providing condoms for sex workers. Few participants mentioned peer educators as a source for condoms.

Correlates of Condom Use

We examined correlates of inconsistent condom use with irregular clients and regular clients separately. In univariate analysis, "not" or "only sometimes feeling comfortable" to ask clients (OR=13.0; 95% CIs: 4.7-36 and OR=5.8; 95% CIs: 3.4-10, respectively), not having the right to ask clients to use condoms (OR=8.5; 95% CIs: 2.6-28), and condom unavailability (OR=3.9; 95% CIs: 2.3-6.6) were found to be associated with not using condoms with irregular clients. When inconsistent condom use with regular clients is the outcome, the following factors were correlates in univariate analysis: "not" or "only sometimes feeling comfortable" to ask clients (OR=16.0; 95% CIs: 3.9-65; and OR=9.1; 95% CIs: 4.7-15, respectively), not having the right to ask clients to use condoms (OR=5.3; 95% CIs: 1.6-18), condom unavailability (OR=4.3; 95% CIs: 2.5-7.7), being Buddhist and Catholic as compared to ancestor worshippers (OR=1.6; 95% CIs: 1.0-2.4), and not knowing HIV test results (OR=1.5; 95% CIs: 1.0-2.4).

In multivariate analysis, we simultaneously controlled for age, education level, number of clients, duration of residence in Hanoi, religion, ethnicity, class, cohabitation status, use of drugs, knowledge of HIV, knowing HIV test results, feeling comfortable and having the right to ask for condom use, and condom availability. Table IV presents the results of multivariate analysis of correlates of inconsistent condom use with irregular and regular clients. With irregular clients, "not" or "only sometimes feeling comfortable" to ask clients to use condoms (OR=10.0; 95% CIs: 2.8-36; and OR=5.7; 95% CIs: 3.1-10, respectively), condom unavailability (OR=2.8; 95% CIs: 1.7-4.7), and age (increase of five years of age; OR=1.2; 95% CIs: 1.0-1.4) were found to be associated with inconsistent condom use. Being a middle-class FSW was borderline associated with inconsistent condom use (OR=2.1; 95% CIs: 0.94-4.5). For inconsistent condom use with regular clients as the outcome, "not" or "only sometimes feeling comfortable" to ask clients to

use condoms (OR=15.0; 95% CIs: 2.3-100 and OR=8.2; 95% CIs: 3.8-18, respectively), and condom unavailability (OR=2.6; 95% CIs: 1.4-5) were correlated. Being a middle-class FSW was borderline associated with inconsistent condom use (OR=1.9; 95% CIs: 0.97-3.8).

DISCUSSION

Results of this study suggest that there might be an increasing use of condoms among FSWs, especially low-class, which is in agreement with the previous qualitative study among FSWs in Hanoi (Tran *et al.,* 2004). However, the observed changes in condom use (compared to the previous six months) in this study need careful interpretation. Even though one-third of the participants reported increased condom use compared to the previous six months, this overall increase in condom use could reflect two possible situations. First, it could simply be a natural and expected change among those FSWs who have been in the sex market for awhile. Tran et al. (2004) observed that most FSWs, when they started sex work (new FSWs), did not use condoms frequently. They gradually increased use as they became more experienced. Second, FSWs may be actively changing their sexual behaviors and practices to be safer, due to intervention efforts. Looking more carefully at those who increased condom use with irregular clients, most subjects had been working as FSWs for some time (89% worked for more than a year, and 64% worked for more than two years); i.e., they were not new FSWs. The median increases in condom use frequency with irregular and regular clients were 25% and 20%. Our previous qualitative study among FSWs in Hanoi indicated that clients' concern about HIV infection had helped to increase condom use. The street-based FSWs also reported having more power over their clients regarding condom use when they asked for payment first (Tran et al., 2004) More studies are necessary to evaluate the causes for increasing condom use and the potentially shifting nature of

power in relationships between FSWs and their clients. Interventions are needed to promote this increase further, as well as to maintain high levels of condom use among FSWs.

Among those who used condoms inconsistently with clients (both irregular and regular), the main reasons were partner objection and condom unavailability. Results of multivariate analysis of correlates of inconsistent condom use also confirmed that feeling comfortable about asking clients to use condoms and condom availability were important correlates of condom use. Thus, condom use intervention among FSWs should focus on empowering FSWs, improving their negotiation skills, creating a supportive environment regarding condom use (targeting clients, bar owners, pimps, and mediators with condom promotion messages), and making condoms easily available to FSWs through multiple sources.

With irregular clients, only 62% of FSWs used condoms consistently. This proportion is even lower with regular clients (41%) and love mates (5%). Thus, there is a potential risk of infection through the sexual route for FSWs, especially through their regular clients and love mates, and from them to their other clients. This pattern of low condom use with regular clients and love mates was also observed in other studies among FSWs (Basuki et al., 2002; Le et al., 2000; Wong et al., 2003). In this study, we found that it was FSWs who were the ones who did not feel it was necessary to use condoms with regular clients and love mates. Given that a considerable proportion of FSWs' love mates and clients are drug users (Tran et al., 2004), FSWs in Hanoi are clearly unaware of and underestimate their risk for infection through unprotected sexual relations with these partners. Thus, interventions promoting consistent condom use for both FSWs and their clients, and especially with their boyfriends and husbands, needs to be intensified. Thailand's experience has shown that with an intense 100% condom use promotion program, condom use in brothels rose from about 14% to more than 90%

(Rojanapithayakorn and Hanenberg, 1996), and 89% of indirect sex workers used condoms with paying clients, as compared to 18% with nonpaying clients (Mills et al., 1997). It is important to recognize, however, that the situation is different in Vietnam, where a significant proportion of commercial sex is not brothel-based. FSWs should be made aware of their high risk of infection from regular clients and love mates. They should also recognize and acknowledge the possibilities of transmitting HIV and/or STDs to their partners when not using condoms. On the other hand, clients of the FSWs, especially street-based FSWs, should be made aware of their potential risk of infection through unsafe sex with FSWs. As seen in Thailand, as the epidemic matures, men who visit FSWs can transmit HIV to their wives or female partners who are monogomous (Ainsworth et al., 2003). Therefore, this group should also be educated about their risk through unprotected sex with their male partners. To reduce the risk to wives and monogamous partners, interventions that change masculine norms accepting multiple partners need to be changed. Similar to other studies among FSWs (Le et al., 2000; National AIDS Standing Bureau and Family Health International, 2001), middle-class FSWs in our study were less likely to report condom use (with both irregular and regular clients) than low-class FSWs. This could be due to assumptions that wealthier, higher class clients (and/or sex workers) are less likely to be infected with HIV/STDs (Le et al., 2000). A similar explanation could be applied for the negative association between subjects' age and condom use (older FSWs use condoms less frequently than younger subjects). Older FSWs are thought to serve a lower risk client population (older men) and be less likely to inject drugs. In addition, older FSWs, being less "desirable", may also have less negotiating power.

Condoms are not always available to FSWs. Up to 27% of the participants claimed that they did not always have condoms when needed; condom unavailability was the second most

frequently mentioned reason for not using condoms with irregular clients. This study identified the local pharmacy network as the most important source of condoms. However, pharmacies are not likely to stay open overnight or at least until midnight, when commercial sex activity is heaviest. Bars, hotels, and massage parlors were another important source of condoms for sex workers, but were mostly for the establishment-based (middle-class), not the street-based sex workers. Health clinics and family planning centers were insignificant sources of condoms for the sex workers, probably because these facilities do not operate beyond normal office hours and are less convenient than pharmacies. Condoms need to be made easily available to FSWs. An option could be the introduction of automated condom-selling machine, which could be installed in public places and be very convenient for both FSWs and clients. The use of this machine in Vietnam should be feasible, especially in urban areas.

Outreach peer workers could also be a good channel for distributing condoms to the sex workers, since they are mobile, flexible, and actively seek out sex workers. However, our results showed that the peer worker network currently does not operate well, and is not an effective source for condom distribution to FSWs. They were least frequently mentioned by the participants as a source for condoms.

A recent study of the HIV peer education network in 20 provinces of Vietnam also indicated that the peer network's coverage was low; the network was insufficiently funded, and peer workers were not adequately trained and supervised, so the quality of services provided was limited (Khoat et al., 2003). These problems suggest that the harm reduction approach is not adequately recognized as an important and necessary approach to limit the spread of HIV/STDs. This urgent need should be made clear to policy-makers, as well as to society, so that people gradually change their attitudes about commercial sex work and harm reduction strategies. In

addition, the economic empowerment of women should be an important strategy for HIV prevention in women, and FSWs in particular. Studies among FSWs have shown that economic issues were their main concern, and had the strongest influence over their ability to leave sex work (Manopaiboon et al., 2003; Le et al., 2000).

There are a number of limitations to this study. Since we were unable to enumerate the number of potential participants at all selected establishments/venues, we were not able to obtain the actual participation rate. It is possible that we did not enroll every potential subjects in some clusters. The study relies on self-reports of sexual practices and behaviors, which are subject to recall bias and are difficult to verify. Over time, it may be more difficult for FSWs to admit to not using condoms, which is a source for social desirability bias.

As sexual transmission becomes more important in driving the HIV epidemic in Vietnam, protected sex and condom use promotion should be one of the key interventions among FSWs and their clients and partners. A sustainable and high level of condom use can only be achieved if condom use interventions focus on both FSWs and their clients. In addition, the government's and society's negative attitudes toward FSWs and condom promotion need to be changed so as to reduce stigmatization of FSWs and to make condom use a norm in the society.

ACKNOWLEDGEMENTS

This project was supported by a grant from the National Institutes of Health/Fogarty International Center (#TW00013). The authors thank Dr. Nguyen Tran Hien and Mr. Nguyen Anh Tuan for their valuable support. We are very grateful to the outreach workers, the staff of the Hanoi Dermatology & Venerology Center, and DKT Vietnam for their contributions to the conduct of the study, and to Wendy Aft for assisting in the preparation of the manuscript.

REFERENCES

Ainsworth, M., Beyrer, C., and Soucat, A. (2003). AIDS and public policy: the lessons and challenges of 'success' in Thailand. *Health Policy, 64,* 13-37.

Basuki, E., Wolffers, I., Deville, W, Erlaini, N., Luhpuri, D., Hargono, R., Maskuri, N., Suesen, N., and Van Beelen, N. (2002). Reasons for not using condoms among female sex workers in Indonesia. *AIDS Education and Prevention*, *14(2),* 102-116.

Davis, K. R., and Weller, S. C. (1999). The effectiveness of condoms in reducing heterosexual transmission of HIV. *Family Planning Perspectives, 31,* 272-279.

Feldblum, P. J., Morrison, C. S., Roddy, R. E., and Cates, W., Jr. (1995). The effectiveness of barrier methods of contraception in preventing the spread of HIV. *AIDS, 9 (Suppl A),* S85-S93.

Food and Agriculture Organization (FAO) and United Nation Development Program (UNDP). (2002). Gender differences in the transitional economy of Vietnam. *FAO Vietnam, Hanoi.*

Ghys, P.D., Saidel, T., Vu, H.T., Savtchenko, I., Erasilova, I., Mashologu, Y.S., Indongo, R., Sikhosana, N., and Walker, N. (2003). Growing in silence: selected regions and countries with expanding HIV/AIDS epidemics. *AIDS, 17 (Suppl 4)*, S45-S50.

Hien, N.T., Long, N.T., and Huan, T.Q. (2004). HIV/AIDS epidemics in Vietnam: evolution and responses. *AIDS Education and Prevention, 16 (Suppl A)*, 137-154.

Hong, T.K., Anh, T.V.N., and Ogden, J. (2004). Understanding HIV and AIDS-related stigma and discrimination in Vietnam. *International Center for Research on Women, Institute for Social Development Studies, Hanoi*.

Herdt, G. (ed.) (1997). *Sexual cultures and migration in the era of AIDS: anthropological and demographic perspectives*. Oxford, UK: Oxford University Press.

Khoat, D.V., West, G.R., Valdiserri, R.O., and Phan, N.T. (2003). Peer education for HIV prevention in the Socialist Republic of Vietnam: a national assessment. *Journal of Community Health. 28(1),* 1-17.

Larsen, M.M., Sartie, M.T., Musa, T., Casey, S.E., Tommy, J., and Saldinger, M. (2004). Changes in HIV/AIDS/STI knowledge, attitudes and practices among commercial sex workers and military forces in Port Loko, Sierra Leone. *Disasters, 28(3)*, 239-254.

Le, T. G., Nguyen, T. S., Le, T. L. T., Lan, V., Hudes, S. E., and Lindan, C. (2000). Evaluation of STD/HIV prevention needs of low- and middle-income female sex workers in Ho Chi Minh City, Vietnam. *AIDS and Behavior, 4(1),* 83-91.

Manopaiboon, C., Brunnell, R.E., Kilmarx, P.H., Chaikummao, S., Limpakarnjanarat, K., Supawitkul, S., St. Louis, M.E., and Mastro, T.D. (2003). Leaving sex work: barriers, facilitating factors and consequences for female sex workers in northern Thailand. *AIDS Care, 15(1)*, 39-52.

Mills, S., Benjarattanaporn, P., Bennett, A., Pattalung, R.N., Sundhagul, D., Trongsawad, P., Gregorich, S. E., Hearst, N., and Mandel, J.S. (1997). HIV risk behavior surveillance in Bangkok, Thailand: sexual behavior trends among eight population groups. *AIDS, 11 (Suppl 1),* S43-S51.

National AIDS Standing Bureau (NASB), Family Health International (FHI). (2001). HIV/AIDS Behavioral Surveillance Survey, Vietnam 2000.

Rojanapithayakorn, W., and Hanenberg, R. (1996). The 100% condom use program in Thailand. *AIDS, 10(1),* 1-7.

Rothman, K. and Greenland, S. (1998). Modern Epidemiology, 2nd edition. Lippincott–Raven, New York, NY.

Ruxrungtham, K., Brown, T., and Phanuphak, P. (2004). HIV/AIDS in Asia. *Lancet, 364(9428)*, 69-82.

Subcommittee on HIV/AIDS Surveillance. (2003). HIV Sentinel Surveillance Report. Hanoi, Vietnam: Ministry of Health.

Thuy, N. T. T., Lindan, C. P., Phong, T. H. Dat, T. V., Nhung, V. T., Barclay, J., and Khiem, H. B. (1999). Predictors of visits to commercial sex workers by male attendees at sexually transmitted disease clinics in southern Vietnam. *AIDS*, *13,* 719-725.

Tran, N. T., Detels, R., Hien, T. N., Long, T. H., and Nga, H. T. P. (2004). Drug use, sexual behaviors and practices among female sex workers in Hanoi, Vietnam - A qualitative study. *International Journal of Drug Policy, 15(3),* 189-195.

Tuan, N. A, Hien, N. T., Chi, P. K., Giang, L. T., Thang, B. D., Long, H. T., Saidel, T., and Detels, R. (2004). Intravenous drug use among street-based sex workers: a high-risk behavior for HIV transmission. *Sexually Transmitted Diseases, 31(1),* 15-19.

UNAIDS/WHO. *AIDS Epidemic Update: December 2003, UNAIDS/03.39E,* 1-13.

Ward, H., Day, S., Green, A., Cooper, K., and Weber, J. (2004). Declining prevalence of STI in the London sex industry, 1985 to 2002. *Sexually Transmitted Infection, 80(5)*, 374-376.

Witte, S.S., Wada, T., El-Bassel, N., Gilbert, L., and Wallace, J. (2000). Predictors of female condom use among women exchanging street sex in New York City. *Sexually Transmitted Diseases, 27(2)*, 93-100.

Wong, M. L., Lubek, I., Dy, B. C., Pen, S, Kros, S, and Chhit, M. (2003). Social and behavioral factors associated with condom use among direct sex workers in Siem Reap, Cambodia. *Sexually Transmitted Infections, 79,* 163-165.

Table I: Characteristics of the study sample

Characteristics (N=400)		n	%
Age, mean (SD)		30	±9
Religion	Buddhist	77	19
	Catholic	13	3
	Ancestor worship	257	65
	No religion	53	13
Education	No school	11	3
	Primary	75	19
	Secondary	216	54
	High school	86	21
	College or postgraduate	12	3
Type of FSWs	Middle-class	160	40
	Low-class	240	60
Cohabitation	With husband	26	7
	With boyfriend	171	43
	With both	14	3
	With no male partners	189	47
Income levels, compared to other peers	High	23	6
	Medium	304	76
	Low	73	18
Work extra job beside selling sex	Yes	140	35
	No	260	65
Place of origin	Hanoi	107	27
	Other provinces	293	73
Age at first sex, mean (SD)		19	±2.8
Duration of sex work (in years), median and range		2.3	0.08-21.3

Table II: Condom use frequency in the past month with different types of partners by class of FSW

	Irregular clients (total number=393)		Regular clients (total number=371)		Husbands/boyfriends (total number=207)	
	n	**%**	**n**	**%**	**n**	**%**
Middle-class (N=160)						
Always	92	59	54	38	4	3.7
Almost	46	30	44	31	4	3.7
Often	11	7.1	22	15	10	9.2
Sometimes	4	2.6	7	4.9	5	4.6
Rarely	-	-	7	4.9	9	8.3
Never	1	0.7	10	6.9	77	71
Low-class (N=240)						
Always	154	64	99	44	6	6.1
Almost	58	24	59	26	6	6.1
Often	20	8.4	30	13	2	2.0
Sometimes	5	2.1	14	6.2	4	4.1
Rarely	-	-	13	5.7	6	6.1
Never	2	0.8	12	5.3	74	76

Table III: Reasons for not using condoms in the last sexual encounter with different types of partners

	Irregular clients n=22		**Regular clients n=83**		**Husbands or boyfriend n=174**	
	n	**%**	**n**	**%**	**n**	**%**
Not available	7	32	10	12	5	2.9
Too expensive	0	0	0	0	0	0
Partner objected	15	68	33	40	30	17
Partner offered more money	0	0	4	4.8	-	-
Partner cheated	1	4.5	-	-	-	-
Client is known, not worried	-	-	71	86	158	91
Worried partner would refuse	2	9.1	11	13	22	13
Don't like using them	1	4.5	11	13	33	19
Used other contraceptives	1	4.5	5	6.0	19	11
Did not think it was necessary	2	9.1	22	27	38	22
Do not care about condoms	2	9.1	8	9.6	20	12

Table IV: Multivariate analysis for correlates of inconsistent condom use with irregular and regular clients

		Adjusted ORs*	P-values	95% CLs**
With irregular clients	Feel comfortable to ask			
	Sometimes	5.7	0.0001	3.1-10
	No	10	0.0001	2.8-36
	Yes, always	1		
	Condom availability			
	No	2.8	0.0001	1.7-4.7
	Yes	1		
	Class of FSW			
	Middle-class	2.1	0.07	0.94-4.5
	Low-class	1		
	Older age vs. younger age (increase of 5 years)	1.2	0.06	1.0-1.4
With regular clients	Feel comfortable to ask			
	Sometimes	8.2	0.0001	3.8-18
	No	15	0.005	2.3-100
	Yes, always	1		
	Condom availability			
	No	2.6	0.003	1.4-5
	Yes	1		
	Class of FSW			
	Middle-class	1.9	0.06	0.97-3.8
	Low-class	1		

* Adjusted for age, education level, number of clients, duration of residence in Hanoi, religion, ethnicity, class, cohabitation status, use of drugs, knowledge of HIV, knowing HIV test results, feeling comfortable and having the right to ask for condom use, and condom availability

** Adjusted for cluster sampling's design effect

Figure 1: Proportion of the two FSW groups who used condoms in their last sexual encounter with different types of sex partners

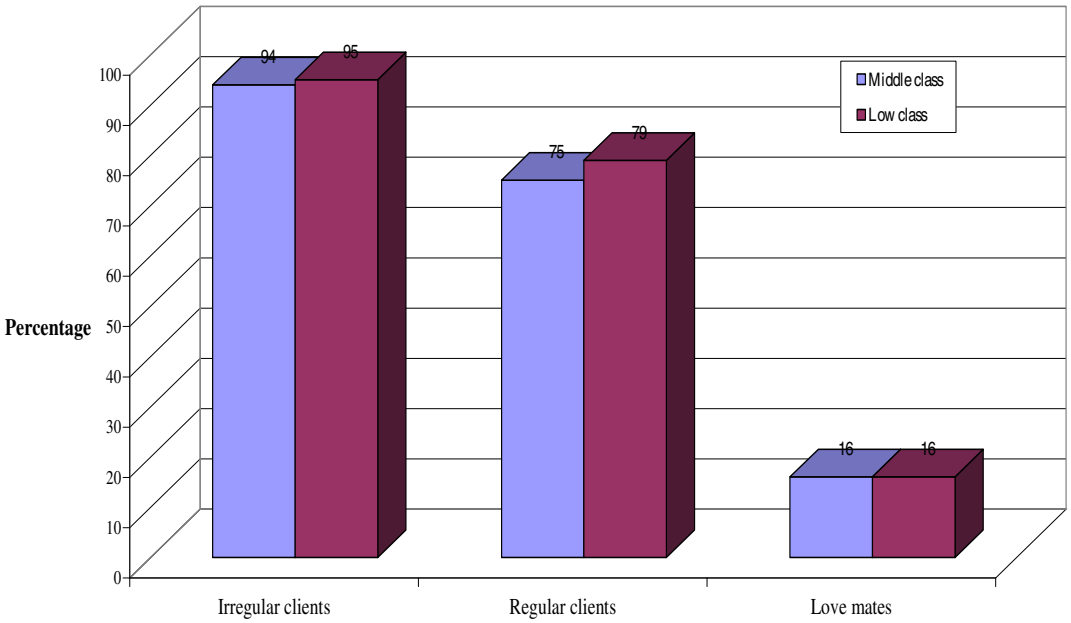

Figure 2: Changes in condom use with irregular and regular clients compared to the previous 6 months