FACTORS AFFECTING CONSISTENT CONDOM USE AMONG FEMALE SEX WORKERS (FSWs) IN THANH HOA PROVINCE, VIETNAM, 2009

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF ARTS
(POPULATION AND REPRODUCTIVE HEALTH RESEARCH)
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY
2012

Thesis
entitled

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for the degree of Master of Arts
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ACKNOWLEDGEMENTS

To fulfill this thesis at IPSR, Mahidol University, Thailand, I gratefully and profoundly acknowledge to my major advisor, Assoc. Prof. Dr. Aree Jampaklay and my co-advisor, Assoc. Prof. Dr. Patama Vapattanawong for their constant and valuable guidance. I wish to deeply thank to Dr Sukanya Chongthawonsatid, my external examiner and Asst. Prof. Kanchana, my chair for their time to critically review my thesis and give highly valuable comments. Sincerely, without their great contribution and encouragement, this thesis would not have been possible.

I wish to thank Assoc. Prof. Sureeporn Punpuing, Director of IPSR, Emeritus Prof Dr. Aphichat Chamratrithirong, Chair of the International Master Degree Program at IPSR, and all of respected faculties for their continuous support during my study. My special thanks go to all staff of IPSR, particularly Ms. Luxana Nil-Upala for her enthusiastic hospitality and unforgettable support during my study.

I am very grateful to MOH of Vietnam and the World Bank for granting me to participate in this M.A. program. Taking this opportunity, I express my special thanks to Dr. Trinh Quan Huan and Dr. Nguyen Thanh Long (Vietnam Administration of HIV/AIDS Control) for their great support during my study at IPSR, Mahidol.

I greatly appreciate my colleagues for their support and sharing of work during my one-year absence.

Last but not least, I owe a great debt to my parents and all family members who had given me an important moral support and encouragement during my study. I highly recognize their great sacrifices for my higher education.

Dao Van Dang

FACTORS AFFECTING CONSISTENT CONDOM USE AMONG FEMALE SEX WORKERS IN THANH HOA PROVINCE, VIETNAM, 2009

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ABSTRACT

This study examined factors affecting consistent condom use among female sex workers (FSWs) with non-regular partners, regular partners, and husbands/lovers. The study employed a secondary dataset of a cross-sectional survey on assessment of behavior and determination of HIV/AIDS prevalence among FSWs in Thanh Hoa Province, Vietnam, conducted by the Vietnam HIV/AIDS Prevention Project in 2009. A respondent-driven sampling technique was used for sampling respondents. The total sample size was 440 FSWs.

The results indicated that negotiation skill and number of sexual partners had a significant association with consistent condom use among FSWs with regular sexual partners. Duration of sex work, number of non-regular sexual partners, HIV knowledge, negotiation skills and accessibility to condoms predicted consistent condom use among FSWs with non-regular sexual partners. Moreover only negotiation skill was positively associated with consistent condom use among FSWs with husband/lovers.

The study findings suggest that intervention programs, including providing condoms freely and 100% condom use program (CUP) should be emphasized for FSWs and their clients.

KEY WORDS: FEMALE SEX WORKERS/ HIV/AIDS/ CONDOM USE/
VIETNAM

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AIDS	Acquired Immune Deficiency Syndrome
CSEARHAP	Canada South East Asian Region HIV/AIDS Program
CSWs	Commercial Sex Workers
FHI	Family Health International
FSWs	Female Sex Workers
HIV	Human Immunodeficiency Virus
IBBS	Integrate Behavior and Biological Survey
IDUs	Injecting Drug Users
MAP	Monitoring the AIDS Pandemic
MARP	Most at Risk Population
MOH	Ministry of Health
NGOs	Non Government Organization
NIHE	National Institute of Hygiene and Epidemiology
PAC	Provincial AIDS central
PLWH	People living with HIV/AIDS
PRECEDE	Predisposing, Reinforcing, and Enabling Constructs in Educational Diagnosis and Evaluation
PROCEED	Policy, Regulatory, and Organizational Constructs in Educational and Environmental Development
RDS	Respondent driven sampling
STIs	Sexually Transmitted Infections
UNAIDS	Joint United Nations Program on HIV/AIDS
WHO	World Health Organization

CHAPTER I
INTRODUCTION

1.1 Background

The first HIV infected case was detected in 1981. HIV is a danger because of unavailability of a vaccine or specific medicine to treat the disease. According to UNAIDS, 2009, by the end of 2008, there were around 33.4 million people living with HIV/AIDS and about 2.1 million people died of AIDS related illness (UNAIDS, 2009). In Asia alone, an estimate of 4.7 million people was living with HIV while Asia is ranked the second only to Sub-Sahara Africa in this regard.

Up to now, the HIV/AIDS epidemic in Asia still concentrates on most at risk populations including injecting drug users (IDUs), female sex workers (FSWs), and men who have sex with men (MSM). In the report of WHO-2008, transmission through sexual contact accounts for 75 to 85 % of HIV cases (WHO, 2008). Of the 33.4 million people living with HIV/AIDS (PLWH) worldwide, HIV infected women was 15.7 million (UNAIDS, 2009). For Asia, home of 60% world's population, the proportion of women infected with HIV rose from 19% in 2000 to 35% in 2008 (UNAIDS, 2009). There are millions of women infected with HIV not because of their own sexual conduct but because their partners or husbands engage in unsafe sexual behavior (UNAIDS, 2009).

Different country has different socio-demographic characteristics, but HIV epidemic among these countries has the similarly important features. In Asian countries, the most concentrated HIV infected population is commercial sex workers. Commercial sex groups including female sex workers (FSWs) and their clients are the largest vulnerable group of HIV epidemic in Asia. The number of female sex workers has been increasing day by day. In urban areas of China, it is estimated about 3.4% to 3.6% of total female urban are sex workers (Zhang, 2007). While the number of female sex workers is high, the number of clients is much greater. For example, in China, number of male clients reaches 37 million (Wang, 2010). It is estimated that up

to 10 million Asian women selling sex and at least 75 million men who bought it regularly (UNAIDS, 2009).

In some Asian countries, one of the highest risk groups of HIV infection is female sex workers. For example, in Myanmar more than 18 percent of female sex workers are infected with HIV. In some southern provinces of India, HIV prevalence among female sex workers is up to 14.5%. In Vietnam, HIV prevalence is 4.4%, and obviously, FSWs are a high risk group as using condoms during sexual intercourse is irregular. Moreover, injecting drug users have a close relationship with commercial sex workers. They could buy or sell sex and get high risk HIV infection. (UNAIDS, 2009).

1.2 Problem Identification

HIV epidemic in Vietnam is the urgent public health matter. More than twenty years after the first HIV case was detected in December 1990 in Ho Chi Minh City, until 30th September 2009, the number of people living with HIV nationwide continues to grow with time, reaching an estimate of 160,019 and with 48,368 people losing their lives to AIDS related illnesses (MOH, 2010).

HIV epidemic in Vietnam largely concentrates on the most at risk populations (MARP) with high HIV prevalence. The highest prevalence of HIV still remain in IDUs with 18.4% (NIHE, 2010). Nevertheless, HIV prevalence varies from province to province such as 42.1% in Ho Chi Minh city, 40.8% in Can Tho and 34.3% in Quang Ninh (NIHE, 2010). Obviously, sex works have many chances to transmit HIV to others due to their high risk and related risky behaviors from their relations.

Despite the fact that transmission of HIV/AIDS in Vietnam is mainly transmitted through injecting drug users, risk patterns of HIV/AIDS in each region also have regional differences (Cuong, 2009; Anh, 2011). While most areas in the water service is mainly transmitted by injecting drug users, the provinces in Cuu Long river Delta, HIV transmission is mainly through sexual transmission, particularly the provincial border areas for the proportion of HIV infections that sexually transmission is highest. The trend of transmission by sexual behavior increases in recent years. The

proportion of HIV infected persons in the total number of HIV infections detected each year that are transmitted through sexual contact increases from 12 % in 2004 to 29% in 2010. More evidence shows that the proportion of female sex workers and proportion of men having sex with men using drug has increased. This increases the risk of HIV transmission through sexual contact to their partners. So, the number of people infected by HIV through sexual transmission accounts for more than the previous year.

1.3 Problem Justification

Figure 1.1 Map of Thanh Hoa province in Vietnam

Thanh Hoa Province is located between the northern and central of Vietnam. Its West borders Hua Phan province and Lao PDR for 192 kilometers. The East of Thanh Hoa opens to the middle of the North Sea with over 102 km long coastline. With an area of 11,133.4 km^2, Thanh Hoa ranks fifth in the 64 provinces of Vietnam in terms of area and a population of 3.405 million, ranked third in the country.

Similar to the common trend in Vietnam, HIV epidemic in Thanh Hoa is more and more serious. The number of HIV infected people in Thanh Hoa has continuously increased over time. Since the first HIV case discovered in 1993, according to Thanh Hoa PAC (Provincial AIDS central) , at the end of 2011, there are 5,606 HIV infections, of whom 1,908 were fully blown AIDS cases and 813 died of AIDS. HIV epidemic in Thanh Hoa Province also concentrates mainly on IDU group- an estimated 10,710 IDUs while it is estimated of 2,209 FSWs in 2011. The majority of HIV cases (57.8%) are attributed to IDUs and mostly transmitted through unsafe sex. More importantly, there has been a potential change of HIV infection between men and women in recent years. The proportion of HIV infection among women has risen from 13.7% in 2008 to 15.36% in 2009 and to 19.36% in 2010, and to 21.7% at the end of 2011 (PAC, 2011).

Table 1.1 Situation of HIV epidemic in Thanh Hoa province 2009-2011

Content	2009	2010	2011
Cumulative number of HIV infected people in Thanh Hoa province	3.958	4.891	5.606
Number of HIV infected women in Thanh Hoa	608	947	1.217
Estimate number of FSWs who are working in Thanh Hoa	1.215	1.509	2.209
Cumulative number of HIV infected FSWs in Thanh Hoa	113	195	260

Source: Data from report of Thanh Hoa provincial AIDS centre in 2011

Reports from previous studies in Thanh Hoa Province discover that the risk of HIV transmission from female sex workers to their partners due to not using condom is quite high (PAC, 2010).

It is worth noting that FSWs are the persons who received services from HIV prevention projects funded by NGOs and governmental organizations. Most of

FSWs in Thanh Hoa had active sexual relationships. Risks to transmit HIV through unprotected sex to their partners are thus prominent.

In general, most studies associated with FSWs in Vietnam have missed the opportunity to understand the related risks and HIV vulnerability of their partners. Not much data on condom use behavior with their partners are explored. With active sexual behavior and risk behavior without using a condom when having sex, FSWs and their partner are at risk of being infected with HIV/STIs and may indirectly transmit HIV to their subsequent partners including wife and through prenatal period to newborns. The alarming sign of HIV infection from FSWs to their partners without using condom is becoming more significant. It is in line with the patterns of HIV infection among general women in Vietnam.

As the increase of HIV/AIDS in IDUs, HIV/AIDS in FSWs also increases. Thanh Hoa is a province with a famous beach. Every year, many people go there to relax, especially in summer. Touring is the main reason for highly social events. Consequently, sexual commercial and the number of SWs increase.

Table 1.2 Number of tourists and entertainment sites in Thanh Hoa province

Content	2009	2010	2011
Estimated number of tourists come to Thanh Hoa province	1,900,000	2,500,000	3,000,000
Estimated number of base entertainment (karaoke, massage, hotel, etc.)	1,500	1,700	2,000

Source: Data from report of Thanh Hoa provincial AIDS centre in 2011

The increase in the number of FSWs raises the question about the situation of condom use for preventing HIV transmission among FSWs in Vietnam in general and in Thanh Hoa Province in particular. To find factors affecting consistent condom use for HIV prevention among FSWs is of a particular concern as this issue has never been researched before. In order to provide evidence to help prevent further spread of HIV within populations as well as their sexual partners, such research is extremely necessary.

1.4 Research Question

What are the factors affecting consistent condom use among female sex workers in Thanh Hoa Province, Vietnam?

1.5 Research Objectives

1.5.1 Ultimate objective

To provide recommendations to design appropriate intervention programs for female sex workers to use condom consistently as well as to contribute to develop intervention program for their partners.

1.5.2 Immediate objective

To examine factors affecting consistent condom use among female sex workers in Thanh Hoa province.

CHAPTER II
LITERATURE REVIEW

This chapter reviews the theoretical models in attempting to understand and explain consistent condom use among FSWs. In addition, the results/findings from previous studies related to determinants of consistent condom use among female sex workers are reviewed.

2.1 Theoretical Perspectives

To understand factors affecting consistent condom use among female sex workers, this study applies the concepts of predisposing, enabling risk and reinforcing factors. These three main factors are parts of the PRECEDE-PROCEED Model developed by L. Green and M. Kreuter (L. Green, 2005), which explains health-related behaviors and environments, design and evaluate the interventions needed to influence both the behaviors and the living conditions that influence them and their consequences. See detail of the PRECEDE-PROCEED model in the appendix 2.

The PRECEDE (*P*redisposing, *R*einforcing, and *E*nabling *C*onstructs in *E*ducational *D*iagnosis and *E*valuation) is composed of 5 phases (see Figure 2.1). The predisposing, enabling risk and reinforcing factors are embedded in Phase 3 and Phase 4 of the PRECEDE part, which examines factors that influence behavior, lifestyle, and responses to environment. Phase 3 determines behavior that we are concerned about, which is condom use in this case. Then, Phase 4 identifies the causal factors that must be changed to initiate and sustain the process of behavioral and environmental change identified in Phase 3.

Predisposing factors refer broadly to everything that might predispose a person to need and use a particular service or apply a particular behavior (Anderson, 1968). Predisposing factors are factors or conditions that render an individual vulnerable to a disease or disorder. As developed by L. Green and L.Blum (need

references here), predisposing factors was developed based on the individual theories so that it represented for the individual factors. Predisposing factors are any characteristics of a person or population that motivates behavior prior to or during the occurrence of that behavior. They include an individual's knowledge, beliefs, values and attitudes. Following previous studies that apply predisposing factors, predisposing factors in this study include age, marital status, level of education, and duration of work of FSWs.

Enabling factors include factors that belong to the environment factors. Enabling factors are those characteristics of the environment that facilitate action and any skill or resource required to attain specific behavior. They include programs, services, availability and accessibility of resources, or new skills required to enable behavior change. Enabling risk factors in this study refer to HIV/AIDS knowledge, and number of sexual partners of different types related to determinants of consistent condom use among FSWs. It is hypothesized that knowledge about the health utility and enjoy ability of a sexual practice, social factors (group norms and social support) influence an individual's cost and benefit and self-efficacy beliefs.

Reinforcing factors are the last group of factors related to the behavior and environment that can affect health. Reinforcing factors are rewards or punishments following or anticipated as a consequence of a behavior. They serve to strengthen the motivation for behavior. Some of the reinforcing factors include social support and peer support. Reinforcing factors in this study refer to negotiation skill (the ability to communicate verbally with sexual partners) and accessibility to condoms related to determinants of consistent condom use among FSWs. The PRECEDE emphasizes that HIV/ADS knowledge, perceived HIV susceptibility, self-esteem, negotiation skills, and social support are important factors for helping people change their risky behavior (FHI, 2003).

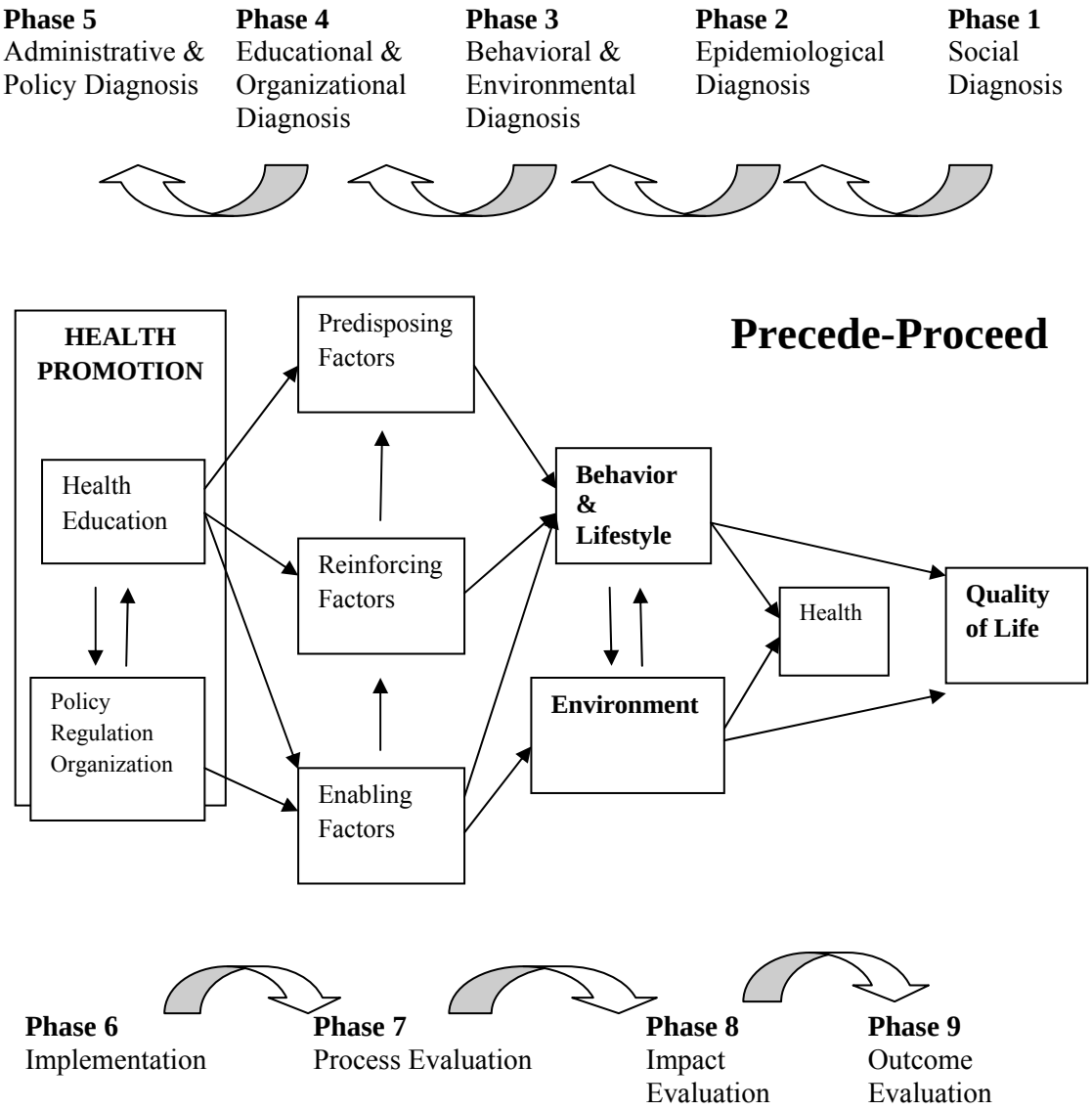

Figure 2.1 The Precede-Proceed Model by L. Green and M. Kreuter (2005)

2.2 Previous Studies on Determinants of Condom Use among FSWs

2.2.1 Predisposing factors of FSWs and condom use

Predisposing factors in previous study focus on age, marital status, level of education, duration of work, and age at fist sex of FSWs related to their sexual behavior.

Age of FSWs and condom use

The relationship between age of FSWs and condom use suggested in prior studies is in fact not conclusive. Based on the Indonesian survey, researchers conclude that older FSWs are more likely to use condoms than younger ones (Ford et

al, 2002). This finding is similar to findings in Padua and Bangladesh, which find a significant association between condom use and age of FSWs (Fornasa, 2005; Habib et al, 2001). Younger FSWs reported that they used condoms less consistently than did older FSWs (Fornasa, 2005). Unlike the above studies, However, a 2006 study in Vietnam finds an opposite result that there is a significant association between older age of FSWs and the inconsistency of condom use with irregular sexual partners (Tran et al, 2005). Meanwhile, other studies report that the age of FSWs do not have a significant effect on condom use. Toor (2003) argues that the age does not have a significant effect on consistent use of condoms among FSWs.

Marital status of FSWs and condom use

According to a study in Pattaya, Thailand, single FSWs are more likely to use condoms than married ones (Toor, 2003). Contrary to the above findings, other studies in Tashkent, Uzbekistan and in India show the opposite results with Toor's study. They find that consistent condom use with clients is more likely for FSW who are married (Todd, 2006) or single FSWs are less likely to use condoms when having sex with their clients (Gutierrez, 2004). Yet, in another study, some researchers argue that marital status of FSWs is not correlated with the consistency of condom use (Wong, 2003).

Educational level and condom use

A lot of researchers conclude that women with a higher level of education are more likely to use condoms consistently than less educated women (Joesoef, 2000). Similarly, a more recent study in Padua finds a significant relationship between educational level and the consistency of condom use. FSWs who have more years in school are more likely to use condoms consistently with their sexual partners than less formally educated FSWs (Fornasa, 2005). However, other studies report the contrary findings that education is not correlated with the consistency of condom use (Ford et al, 2000)**.**

Duration of sex work of FSWs and condom use

The FSWs' duration of work is found to be associated with condom use in some previous studies. A study in Vietnam, for example, finds that FSWs who have been working less than one year are less likely to use condoms consistently than FSWs who have been working longer (Nguyen, 2000). Conversely, in a recent study in

Cambodia, Sopheab et al. (2008) argue that there are no significant differences between new and longer-working FSWs "in terms of condom use with clients, sweethearts, casual partners, and number of clients per day" implying that FSWs' duration of work is not associated with consistent condom use with number and type of sexual partners[1].

Although previous studies provide inconclusive and debatable findings, they suggest that predisposing factors are very important explanatory variables, which may explain condom use among FSWs. A question remains: whether condom use among FSWs depends only on socio-demographic factors or whether other factors may also be regarded as causes of the dependent variable? Correspondingly, further studies to explore/identify other related factors involving in explaining determinants of consistent use of condoms are necessary.

Age at first selling sex and condom use

Beside age of FSWs found to have a significant relationship with consistent condom use among this group, age at start of sex work also has an association with condom use. Results from a survey in Andhra Pradesh, India show that both age and age at start of sex work are negatively associated with consistent condom use, with older FSW who started at older ages having lower inconsistent condom use with clients (Jennifer, 2011).

2.2.2 Enabling risk factors and condom use

Guided by previous analysis, enabling risk factors in this study focus on HIV/AIDS knowledge and number of different types of sexual partners.

HIV/AIDS knowledge of FSWs and condom use

A lot of studies have indicated a relationship between HIV knowledge and condom use among FSWs. For example, Habib et al. wrote in their study that FSWs who had more knowledge about HIV/AIDS were more likely to use condom (Habib et al., 2001). In contrast, Toor found a negative relationship between HIV knowledge and

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[1] *Duration of sex work in this study ranged from 1 month to 12 years, and "new FSWs" refer to those having sold sex for 12 months or less, and "longer-working FSWs" refer to those having sold sex for more than 12 months.*

condom use among FSWs, with the percentage of consistent condom use among FSWs with good HIV/AIDS knowledge being less than that among FSWs with poor knowledge (Toor, 2003). The Asian Development Bank (ADB) in a 2002 study carried out among FSWs in 5 provinces of Vietnam concludes that there is no association between increased HIV knowledge and increased safe sexual practice such as condom use. This study reports that, although a very high percentage (ranging from 93.9% to 98.6%) of FSWs based in karaoke bars knew that using condoms could protect them against HIV, only 15.9-38.9% used condoms consistently with regular partners (ADB, 2002). Similarly, some researchers have also argued in their studies in Thailand and Cambodia that HIV/AIDS knowledge have no effect on consistent condom use (Soonthorndhada, 1999).

Number and type of sexual partners of FSWs and condom use

Number of sexual partners of FSWs and condom use

Many previous studies suggest that there is a relationship between number of sexual partners of FSWs and condom use. Some studies indicate that FSWs have an average of 2-3 clients per day (Elmer, 2001). Hawken reported the number of clients of FSWs as of 3 per day (Hawken, 2001) while other researchers report that on average, FSWs have from 2–18 clients per week (Nguyen, 2000) up to 36 clients per week (Moon, 2001). A Respondent Driven Sampling (RDS) survey among 215 FSWs in Hai Phong, Vietnam finds that average number of sexual partners of FSWs during last month differ from casual partners and regular partners: 31 and 7, respectively (Chau, 2004).

Yet, research about the relationship between number of partners and condom use is not conclusive. Some studies show that the higher number of partners, the more likely they are to use condom. FSWs who have more than 5 sexual partners per day are more likely to use condoms consistently (Nguyen, 2000). On the contrary, Ford et al. (2000) argue that number of sexual partners of FSWs is not significantly related to condom use. While a survey among 610 FSWs in Nha Trang city, Khanh Hoa, Vietnam found that successful negotiation for consistent condom use “occurred

most among FSWs who had few clients" (Grayman, 2005), suggesting the inverse relationship between number of partner and condom use.

Type of sexual partners of FSWs and condom use

Does whether or not FSWs use a condom when having sex also depend significantly on the type of sexual partnership? From previous studies, it appears that condom use among FSWs varies significantly by type of sexual partner. Studies show a higher rates of condom use with casual clients and lower rates of condom use with regular sexual partners including lovers or husbands. In other words, "higher intimacy among female sex workers and regular paying partners are negatively associated with consistent condom use" (Murray L., 2007). Many researchers find that FSWs are more likely to use condoms with casual sexual partners than with regular partners (Hawken, 2002). A recent study in India shows a very high rate of inconsistent condom use among FSWs with their regular sexual partners (75%) (Dhopeshwarkar, 2007). While Chau et al. in a 2004 study in Vietnam reveal a rather high percentage of using condom frequently with casual sexual partners and regular sexual partners among FSWs: 84% and 71%, respectively (2004), other researchers report a very low percentage in their findings: e.g. 47% and only 5% (Nguyen, 2000), 34% and 25% (Sopheab, 2008). Most of FSWs reported that they did not use condoms consistently with regular partners because of the partners' refusal (Moon, 2001). Another reason for inconsistent condom use is that many FSWs believe mistakenly that having sex with their boyfriends is safe (Chan, 2001).

In conclusion, generally, FSWs are often less likely to use condoms consistently with their regular sexual partners than with their casual sexual partners, even though they, of course, know that those partners are having sex with other partners.

2.3.3 Reinforcing factors and condom use

Reinforcing factors in this study refer to negotiation skill and perceived accessibility to condoms related to determinants of consistent condom use among FSWs.

Negotiation skill of FSWs and condom use

Many FSWs reported difficulties in negotiating condom use with customers because of economic pressure, maintaining relationships, and lack of bargaining power. Bar/club FSWs revealed a "difficult situation where drinking is part of their work". Street FSWs have the lowest levels of self–esteem and norms towards practicing safe sex and the highest levels of economic pressure (Russing, 2007). Similarly, the FHI Vietnam Report 2005-2006 notes that negotiation skill of FSWs is also an important factor affecting condom use. Some FSWs stated that they failed to negotiate with their boyfriends and regular partners to use condoms when having sex even though they really wanted to protect themselves and their regular partners or boyfriends (FHI, 2008). Wong et al. (2003) also find in their study in Cambodia that negotiation skill significantly influences condom use among FSWs. Due to lack of negotiation skills, many FSWs find difficulties to persuade clients to use condoms, even if they have good HIV/AIDS knowledge (Wong, 2003). The FHI in Vietnam have concluded that there is a low rate of consistent condom use with regular sexual partners by FSWs in Vietnam. Decisions to use condoms are mostly made by partners or clients. They also find that many FSWs reported difficulties in negotiating with clients who were willing to pay more for not using a condom (FHI, 2008). More importantly, they also report that decisions on condom use are almost always determined by clients. Also, Bao confirms in his study that clients make a decision about condom use based on their personal preference and pleasure or beliefs - they believe that using a condom when having sex will take away sexual pleasure and/or reduce sensation (Bao, 2004). Most street-based FSWs also reported difficulties in persuading male clients who are willing to pay more money not to use condoms. They also admitted that male clients were often the ones to make decision of using condom, and they 'accept' [to have unprotected sex with their clients] for more money'. Lack of power and negotiation skills of condom use with clients are very common among FSWs (T. N. Tran, Detels, R., & Lan, H. P. , 2004). Additionally, Dhopeshwarkar (2007) concludes in a recent study in India that "FSWs were less able to negotiate condom use because they feared violence from their partners".

In short, sexual negotiation skill of FSWs is a very important factor that influences condom use, particularly with potential paying clients.

Accessibility to condom and condom use

Based on the previous research findings, it can be easily seen that low availability of and accessibility to condoms for FSWs are an objective barrier for the consistent condom use among FSWs. While many FSWs state that condoms' price is not expensive (one package of three pieces costs only 1,000 VND), they noted that condoms are not always available "at the time and place needed" (FHI, 2008). A study in the Philippines emphasizes that the high price condoms and their unavailability are the reasons of 43.6% and one-third, respectively, of FSWs conceded not using condoms consistently when have sex with sexual partners (Morisky, 1998). Chan et al. (Chan, 2001), on the contrary, report that condoms' price and their availability are not related to the frequency of condom use among FSWs.

Possession of a condom is considered as "criminal evidence" in Vietnam for street-based FSWs who are caught carrying them. Although the Government's efforts to promulgate a progressive policy to encourage availability of condoms in entertainment establishments such as hotels, karaoke bars, massage parlors, these efforts have not been as successful as expected because owners of the above-mentioned entertainment establishments are very cautious in making condoms available for fear of "criminal evidence" (place of sex work) (FHI, 2008)

In conclusion, "accessibility to condoms" is considered as an important predictor variable which is likely to impact on (Kayembe, 2008) and to explain changes in establishment policies. Also, it is expected to be "as a mean of reducing risk behaviors associated with HIV/STD transmission" (Morisky, 1998).

2.3 Conceptual Framework

Previous studies suggest many contextual factors (e.g. socio-economic factors, socio-cultural factors) and individual factors (psychological, emotional factors) affecting sexual related risk behavior whether FSWs would take consistent condom use with their clients. These are very important factors for adopting and sustaining safer sex behaviors among FSWs. Other factors also influence condom use significantly, as indicated in many previous studies, such as alcohol consumption, drug use, the kind of establishments and factors in the workplace, or HIV risk perception.

However, they are not captured in the survey on which this study is based. Thus, the conceptual framework in this study only includes Predisposing factors (age, marital status, educational level, duration of work, and age at first selling sex), Enabling risk factors (HIV/AIDS knowledge, number and type of sexual partners), and Reinforcing factors (negotiation skill, availability to condom, perceived accessibility of condom) for testing the relationship of these factors with condom use (**Figure 2.3**).

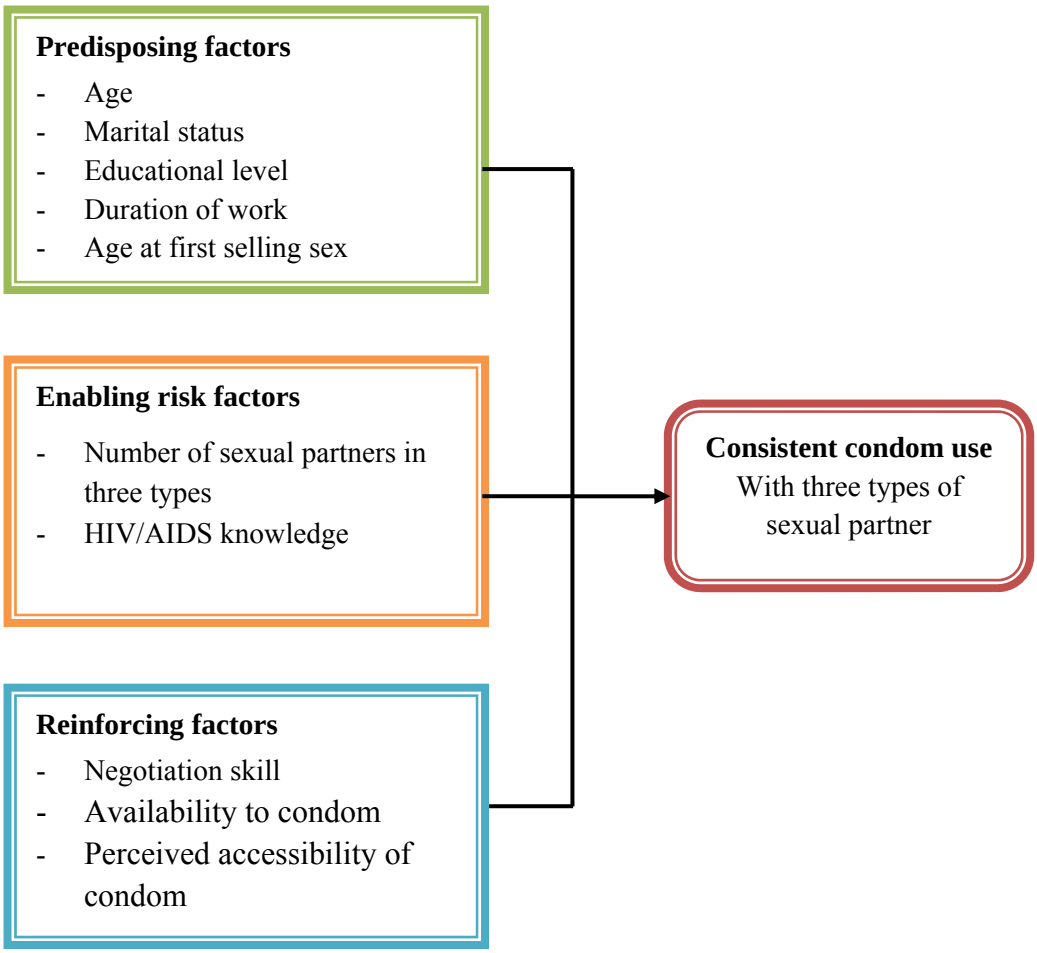

Figure 2.2 Conceptual framework

2.4 Research Hypotheses

Research hypotheses of this study are based on **Predisposing factors** (age, marital status, educational level, duration of sex work, and age at first selling sex), **Enabling Risk Factors** (number and type of sexual partners, HIV/AIDS knowledge),

and **Reinforcing Factors** (negotiation skill, and perceived accessibility to condoms, and availability of condom).

(H_1) FSWs who work for long time are more likely to use condoms consistently than those who do not.

(H_2) FSWs with multiple regular partners are more likely to use condoms consistently than FSWs having fewer regular partners.

(H_3) FSWs having good HIV knowledge are more likely to use condoms consistently than those who had poor HIV knowledge.

(H_4) FSWs who could negotiate to use condoms are more likely to use condoms consistently than those who have poor negotiation skill.

CHAPTER III
RESEARCH METHODOLOGY

This chapter describes detailed information related to research methodology. It includes information on source of data, research instrument, sample size, study population and study design. It also provides information on operationalization of variables, method of data analysis as well as limitations of the study.

3.1 Source of Data

The data for this study is from a cross sectional study survey on assessment of behavior and determination HIV/AIDS prevalence among FSWs in Thanh Hoa Province,, which is a baseline survey of Vietnam HIV/AIDS Prevention Project funded by the World Bank. The survey was conducted by the Vietnam authority of AIDS control (VAAC) and the Provincial Project Management Unit of Thanh Hoa Province, during October to December 2009 in 4 sites including one district, two towns and one city of Thanh Hoa Province.

The study sample includes 440 FSWs in the reproductive ages of 15-49. Information from FSWs was collected by structured questionnaire based on the National Monitoring and Evaluation indicators. The questionnaire consists of 3 parts covering information regarded as (1) predisposing, (2) enabling risk factors, and (3) reinforcing factors.

The survey applied Respondent-Driven-Sampling (RDS) technique. Project staff recruited participants who functioned as “seeds” for the high-risk population. Seeds were identified through discussions with peer educators of outreach programs or key informants who are knowledgeable about the target population. Six seeds were recruited at the beginning of the recruitment process. The first wave of participants for the survey was recruited by the seeds. Thereafter, each person

recruited and enrolled in the survey received three recruitment coupons used to recruit their peers into the survey. Each coupon was uniquely coded in order to link recruiters with those recruited. Once the sample size was reached, no new coupons were distributed. Interview sites had a protocol in place for explaining the termination of the survey to those who show up once the sample size is reached.

3.2 Ethical Consideration

This study has received the approval from Vietnam Authority of HIV Control and Thanh Hoa Provincial AIDS Centre to use the data set of the survey mentioned above. For the survey, participating in the survey was voluntary and anonymous, as was taking blood for the HIV testing. The objectives and purposes of this survey were informed by peer educators and local health staff before conducting the survey. All information provided by the participants was kept confidential. Technical group members including researchers and investigators who participated in the survey were trained and had to follow ethical standard in the whole process of the survey. Interviewers signed a consent form for confirmation of verbal agreement to interview the respondents.

3.3 Survey Sites

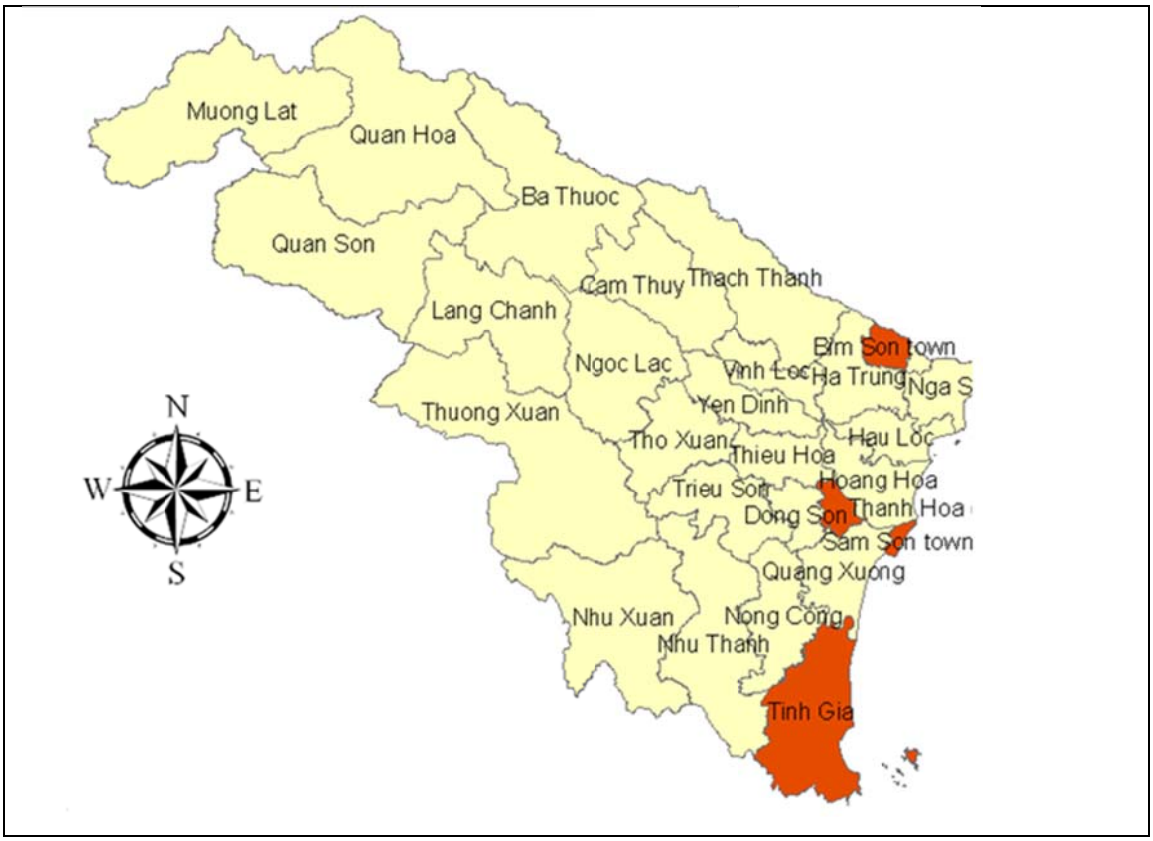

Figure 3.1 Map of surveyed sites in Thanh Hoa province in Vietnam

The survey was conducted in four places in Thanh Hoa province, including Thanh Hoa city, Sam Son town, Bim Son town, and Tinh Gia district. In recent time, these four places have emerged as fours hotpots with increasing number of FSWs.

Additionally, the four places belong to project districts which received HIV prevention programs funded by the World Bank under the framework of Ministry of Health in 2006. However, HIV prevention programs had just been provided to FSWs while their risky behaviors including unsafe sex practices may be transmitting HIV to their partners and have never been researched.

3.4 Definition and Operationalization of Variables

3.4.1 Definition of variables

Female sex workers (FSWs) in this study are both direct sex workers and indirect sex workers. FSWs are defined as "women who earn a living by selling sex only", known as **direct sex workers**. Within the direct sex worker group are freelance sex workers, recruiting their clients in the streets or by other methods (e.g. mobile phone, the Internet) and female sex workers who operate from brothels. Women who occasionally or regularly sell sex are known as **indirect sex workers.** Within the indirect sex worker group are those women who are employed in the entertainment industry, such as guest relations officers in hotels, female beer bar attendants, waitresses, karaoke lounge attendants, female attendees of roadside bars and cafes, nightclub employees, massage parlor employees, dancers, singers, beer promoters etc." (WHO, 2002)

Husband/lover in this study is defined as a person with whom the respondent has had intimate sexual relationship for money or without money and lived together for a long time.

Regular sexual partner in this study is defined as a person with whom the respondent has had sex several times and desire to do this for earning money (IBBS round two, 2009).

Non-regular sexual partner in this study refers to a person with whom the respondent engages in sex act without having an intimate relationship and desire to do this for earning money ("one night stand" fits into this definition) (IBBS round two, 2009).

3.4.2 Operationalization of independent variables

3.4.2.1 Predisposing factors of FSWs

Age: in this study refers to age up to FSW's last birthday in years, classified into 3 categories: <20 years old, 20 - 24years old, and ≥ 25 years old.

Marital status refers to the current marital status of FSWs, and is classified into 2 categories: single and divorced, married/separated/widowed

Educational level: Educational level in this study refers to the highest level of education that finished by FSWs, classified into 3 levels: primary school or lower, secondary school and high school and higher.

Duration of sex work refers to the number of years that FSWs have worked as sex workers, classified into 3 categories: ≤ 1 year, >1-3 years and > 3 years.

Age at first selling sex refers to the year that FSWs reported their first sexual experience in sex work, which is classified into 2 categories: ≤ 20 years old and >20 years old.

3.4.2.2 Enabling risk factors of FSWs

HIV/AIDS knowledge in this study refers to the respondents' knowledge based on WHO & UNAIDS indicators: the respondent both correctly identify ways of HIV transmission and who reject major misconceptions about HIV transmission. Five questions are used for HIV/AIDS knowledge, 1) Using condom every time during vaginal sex prevents HIV transmission; 2) Sharing needles when injecting drugs will increase the risk of HIV infection; 3) Someone is infected with HIV just by looking at him/her; 4) One can get HIV if one uses public toilets; and 5) Mosquitoes and other insect bites will transmit HIV. In order to analyze the respondent's knowledge about HIV, this study sums up the scores of the five questions (0 score for each wrong answer and 1 score for each correct answer). The sum of scores is classified into two levels: good knowledge (5 scores or answered all questions correctly) and poor knowledge (<5 scores). Detail of calculating score is described in a table below.

Table 3.1 Scores of each question in variable "HIV knowledge"

Questions	Yes	No	Don't know
Using condom every time during vaginal sex prevents HIV transmission	1 score	0 score	0 score
Sharing needles when injecting drugs will increase the risk of HIV infection	1 score	0 score	0 score
Someone is infected with HIV just by looking at him/her	0 score	1 score	0 score
One can get HIV if one uses public toilets	0 score	1 score	0 score
Mosquitoes and other insect bites will transmit HIV	0 score	1 score	0 score

Number of sexual partners refers to numbers of lovers, regular and non-regular sexual partners with whom FSWs had sexual intercourse in the last month.

Number of regular sexual partners is classified into 3 categories: 1 - 3 regular sexual partners, 4 - 6 regular sexual partners and >6 regular sexual partners.

Number of non-regular sexual partners is also classified into 3 categories: 1 - 7 non-regular sexual partners, 8 - 20 non-regular sexual partners and >20 non-regular sexual partners.

Number of husband/boyfriends/lovers is classified into 2 categories: 1 and >1.

3.4.2.3 Reinforcing factors

Negotiation skill of FSWs in this study refers to the information whether or not an FSW convinced or persuaded their sexual partner to use a condom when having the recent sex. The possible answers are classified into 2 categories: 0 = Did not persuade, 1 = persuade.

Perceived accessibility to condom in this study is divided into two categories: accessibility to condoms and inaccessibility to condoms. The possible answers are classified into 2 categories: "Accessible" refers to FSWs reported that they knew more than 2 sources to have condoms when necessary. "Inaccessible" refers to FSWs reported less than 3 sources to buy or received condoms when necessary or no answer.

Availability of condom at work in this study refers to have condoms easily in place where FSWs worked. The possible answers are classified into 2 categories: agree (available), disagree (unavailable).

3.4.3 Operationalization of the dependent variable

Condom use in this study is divided into two categories:

Consistent condom use refers to FSWs who reported that they "always" use condom during the last month when having sexual intercourse with their regular and non-regular sexual partners and husband/lovers.

Inconsistent condom use refers to FSWs who reported that they "almost, sometimes, never, or do not remember" use condom during the last month when having sexual intercourse with their regular, non-regular sexual partners and husband/lovers.

3.5 Data Analysis

The unit of analysis in this study is female sex worker.

Univariate analysis such as frequency distribution, percentages, means, and standard deviation are applied to describe predisposing, enabling risk and reinforcing factors among FSWs.

The bivariate analysis including cross-tabulation and chi-square test was used to show the relationship between each independent variable and consistent condom use.

The multivariate analysis was used to examine the effect of the independent variables on consistent condom use among FSWs.

Table 3.2 Summary of operationalization of variables

Variables	Categories	Measurement
Independent variables		
Age (year)	1 = < 20 2 = 20 - 24 3 = ≥25	Ordinal
Marital status	0 = Single 1 = Divorced, Married, separated, widowed	Nominal
Educational level	1 = Primary school or lower 2 = Secondary school 3 = High school and higher	Ordinal
Duration of sex work (year)	1 = ≤ 1 2 = >1 - 3 3 = > 3	Ordinal
Age at first selling sex (year)	0 = ≤ 20 1 = ≥ 21	Ordinal
HIV/AIDS knowledge	0 = Poor knowledge (≤ 4scores) 1 = Good knowledge (5 scores)	Ordinal
Number of regular partners in the last month	1 = 1 - 3 2 = 4 – 6 3 = >6	Ordinal
Number of non-regular partners in the last month	1 = 1 - 7 2 = 8 – 20	Ordinal

Variables	Categories	Measurement
	3 = >20	
Number of husband/lovers in the last month	0 = ≤ 1 1 = ≥ 2	Ordinal
Negotiation skill of FSW with sexual partners	0 = Did not persuade sexual partner to use condom 1 = Persuaded	Nominal
Perceived accessibility to condom	0 = Inaccessible (know <3 sources to get condom) 1 = Accessible (know at least 3 sources to get condom)	Nominal
Availability of condom at work	0 = available 1 = unavailable	Nominal
Dependent variables		
Condom use with regular partners in the last month	0 = Inconsistent 1 = Consistent	Nominal
Condom use with non - regular partners in the last month	0 = Inconsistent 1 = Consistent	Nominal
Condom use with husband/lovers in the last month	0 = Inconsistent 1 = Consistent	Nominal

3.6 Limitations of The Study

Although this study is useful in many ways, it has some limitations that interpretations should be made with cautions.

1) This study uses a secondary data set from a cross-sectional survey, of which only factors associated with behavior of condom use with different types of sexual partners of FSWs can be examined. However, causal relationship or comprehensive explanations cannot be drawn.

2) The data is based on self-reported of FSWs, so they may possibly be over or under-reporting, and may suffer from recall bias.

3) Samples may be biased as it is limited to those FSWs that could be contacted for the study. Thus, it is possible that for FSWs among whom this

study could not capture their risk sexual behavior is higher.

4) As mentioned earlier, sampling technique of this study is Respondent- Driven-Sampling, an appropriate method to approach hidden population. However, this technique has limitations in accessing FSWs who have just worked. The seeds to select FSWs to participate in this study are usually longer-term FSW. So, they subjectively choose FSWs with characteristics in common with them such as level of education, income, etc. However, according to theory of this technique, the 6 waves developed from the first seeds may mitigate its weakness (Heckathorn, D. 1997).

CHAPTER IV
RESULTS AND DISCUSSION

This chapter is divided into 4 parts. The first part shows results from the univariate analysis that describes general information of FSWs including predisposing factors (age, marital status, educational level, duration of work, and age at first selling sex), enabling risk factors (number of various sexual partners and HIV knowledge) and reinforcing factors (negotiation skill, perceived accessibility to condoms and availability of condoms). The second and third parts present results from the bivariate and multivariate analyses that examine factors associated with consistent condom use among FSWs with three types of sexual partners. The last part of this chapter offers the discussion of the results.

4.1 Univariate Analysis

4.1.1 Predisposing factors

In this study, predisposing factors refers to factors that may predispose a person to apply a particular behavior, in this case, consistent condom use. Predisposing factors in this study includes age, education, marital status, age at first selling sex, and duration of work as sex workers. Results show that the majority of FSWs are young. More than half of them (50.4%) aged 15-24. The mean age of FSWs is 25.6 and age ranges from 15 to 46. About one tenth of FSWs have low education, 52.5% have secondary school, and 36.1% complete more than secondary level. More than half of them (59.1%) are single, while 40.9% are married, divorced, separated and widowed. While the mean age at first selling sex among FSWs does not seem too early, which is at age of 20, nearly half started their sexual intercourse younger than 20. The mean duration of sex work for FSWs is 2.6 years. The proportions of them working for 1 year or less, >1-3 years, and more than 3 years are about the same, which is around one third in each category.

Table 4.1 Frequency and percentage distribution of FSWs by general characteristics

Characteristics	Frequency (N)	Percentage (%)
Age	**440**	**100.0**
< 20	104	23.6
20 – 24	118	26.8
≥ 25	218	49.6
Educational level	**440**	**100.0**
≤ Primary school	50	11.4
Secondary school	231	52.5
≥ High school	159	36.1
Marital status	**440**	**100.0**
Single	260	59.1
Married, divorced, separated, widowed	180	40.9
Age at first selling sex	**440**	**100.0**
≤ 20	214	48.6
≥ 21	198	45.0
Missing	28	6.4
Duration of sex work	**440**	**100.0**
≤ 1 years	144	32.7
>1 – 3 years	149	33.9
> 3 years	147	33.4

Mean = 25.6
SD = 6.1
Min-Max = 15 - 46

Mean = 22.2
SD =5.5
Min-Max = 14 - 45

Mean = 2.6
Median = 2.0
SD =2.9
Min-Max = 0 - 22.3

4.1.2 Enabling risk factors

Enabling factors in this study refers to characteristics that facilitate action and any skill or resource required to practice consistent condom use including knowledge on HIV/AIDS and number of sexual partners.

Knowledge on HIV/AIDS

FSWs in this study have high level of HIV/AIDS knowledge. The mean score of HIV/AIDS knowledge is 4.3 score out of 5. Classifying them into good knowledge (scored 5) and poor knowledge (scored less than 5), results indicate that

61.8% of FSWs possess good HIV/AIDS knowledge while 38.2% of FSWs are considered having poor HIV/AIDS knowledge.

Table 4.2 Frequency and percentage distribution of FSWs by level of HIV/AIDS knowledge

Level of HIV/AIDS knowledge	Frequency	Percentage
Good knowledge *(Score = 5.0 or more)*	272	61.8
Poor knowledge *(Score < 5.0)*	168	38.2
Total	**440**	**100.0**

Mean = 4.3
SD = 1.3
Min-Max = 0 - 5

A closer look at FSWs' knowledge about each item of HIV/AIDS shows that the majority of FSWs correctly answer two questions related to HIV prevention "Using condom correctly every time they have sex reduces their chances of getting HIV/AIDS" (92.3%) and "Sharing syringe and reusing it increases the risk of HIV infection" (90.2%). However, a substantial proportion of FSWs still have some misconceptions about HIV transmission. 23.6% of FSWs think that a person can get infected with HIV/AIDS through mosquito bites or do not know. As high as 93% think that it is not possible for a healthy looking person to have HIV or do not know about it. And 13.9% reported that sharing public toilet with a person who has HIV/AIDS can get infected with HIV/AIDS or do not know.

Table 4.3 Percentage distribution of FSW by answering correctly the questions about HIV/AIDS knowledge (N=440)

HIV/AIDS knowledge	Yes (%)	No (%)	Don't know, missing (%)	Total (%)
A healthy looking person is possible to have HIV	7.0	81.6	11.4	**100.0**
A person get infected with HIV/AIDS by sharing public toilet with a person who has HIV/AIDS	5.7	86.1	8.2	**100.0**
People reduce their chances of getting HIV/AIDS by using	92.3	1.8	5.9	**100.0**

HIV/AIDS knowledge	Yes (%)	No (%)	Don't know, missing (%)	Total (%)
condom correctly every time they have sex				
A person can get infected with HIV/AIDS through mosquito bites	10.0	76.4	13.6	**100.0**
Sharing syringe and reusing it increases the risk of HIV infection	90.2	3.4	6.4	**100.0**

Number of sexual partners

Over two-thirds of FSWs reported having non-regular sexual partners (67.1%) and regular sexual partners (70.9%), while nearly one-third of FSWs reported having husband/boyfriend or lover (32.5%). In terms of number, number of non-regular sexual partners is highest, followed by regular sexual partners and husband/boyfriend or lover (the means are 19 partners, 8 partners and 1 partner, respectively). The number ranges from 1-7 for husband/boyfriend, 1- 84 for regular sexual partners, and 1- 99 for non-regular sexual partners. Up to 83.9% of FSWs have one husband/lover.

Table 4.4 Frequency and percentage distribution of FSWs by number of different sexual partners during the past month

Type of sexual partners		Frequency	Percentage (%)
Number of regular sexual partners		**440**	**100.0**
Number of regular sexual partners		312	70.9
1 – 3	Mean = 7.8 SD = 9.5 Min-Max = 1 - 84	*114*	*36.5*
4 – 6		*87*	*27.9*
7 +		*111*	*35.6*
Don't have/ don't know		128	29.1
Number of non- regular sexual partners		**440**	**100.0**
Number of non-regular sexual partners		295	67.1
1 – 7	Mean = 18.7 SD = 17.6 Min-Max = 1 - 99	*95*	*32.2*
8-20		*102*	*34.6*
21+		*98*	*33.2*
Don't have/ don't know		145	32.9

Type of sexual partners	Frequency	Percentage (%)
Number of husband/Boyfriend/lover	**440**	**100.0**
Number of husband/lovers	143	32.5
≤ 1	*120*	*83.9*
≥ 2	*23*	*16.1*
Don't have/ don't know	297	67.5

Mean = 1.4
SD = 1.1
Min-Max = 1 - 7

4.1.3 Reinforcing factors

Reinforcing factors are theoretically considered as factors that strengthen the motivation for behavior. In this study, reinforcing factors include negotiation skill and condom accessibility and availability.

Negotiation skill

Figure 4.1 presents the negotiation skill of FSWs measured by whether they asked their client to use condom when having sex in the last month prior to the survey. The figure reveals that the majority of FSWs did persuade their regular and non-regular sexual partners (85.3 – 93.9%) to use condoms in the recent sexual intercourse. However, less than half (37.8%) of FSWs persuaded husband/boyfriend in the recent sexual relationship to use condom.

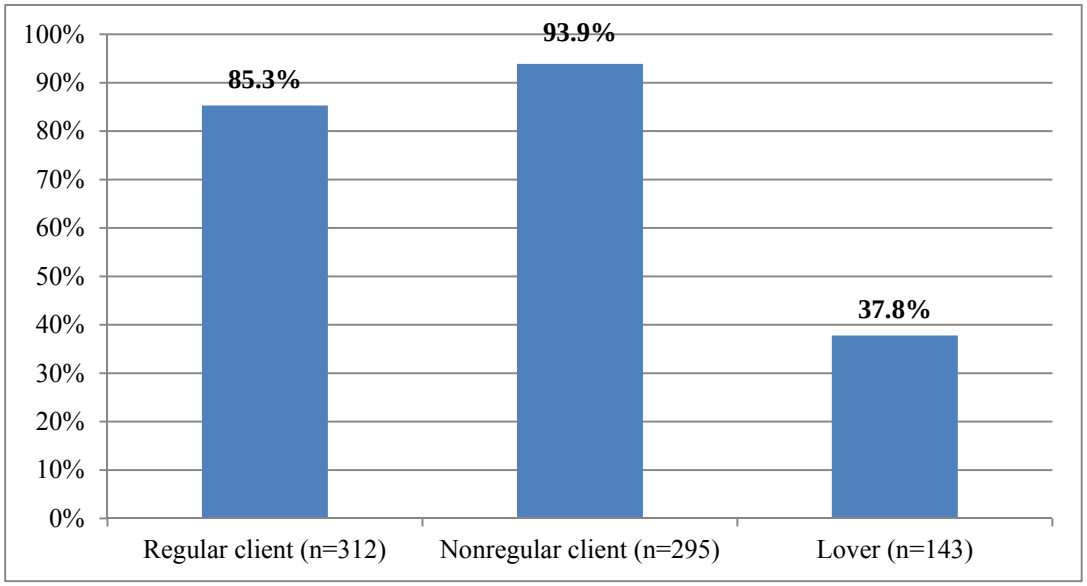

Figure 4.1 Percentage of FSWs who asked sexual partners to use condom during the recent sexual intercourse

Condom accessibility & availability

The data in Table 4.5 show number of places FSWs know to get condom. The table indicates that most of FSWs know several places. The mean number of places for condom that FSWs know is 2.5, ranging from 0 to 5. More than half (53.6%) of FSWs know less than 3 places where they can go to get condoms. As for condom availability, the majority of FSWs (89.32%) reported that condoms were available at their working place and that they could ask condom when needed.

Table 4.5 Frequency and percentage distribution of FSWs by perceived accessibility to condoms and availability of condoms

Characteristics	Frequency (N)	Percentage (%)
Perceived accessibility to condoms	**440**	**100**
Inaccessible	236	53.6
Accessible	204	46.4
Availability of condoms at work	**440**	**100**
Yes	393	89.3
No, don't remember, miss	47	10.7

Mean = 2.5
SD = 1.0
Min-Max = 0 - 5

More detailed information about accessibility to condom provides some insights. Of seven places where FSWs can access to have condoms, the most popular and easiest place to have condoms reported by FSW is pharmacy (85.7%), followed by peer educators (65.7%), health establishment (43.4%), and restaurants/hotels (38.2%). Percentages for drop-in centers and health workers are small (0.7% and 1.4% respectively).

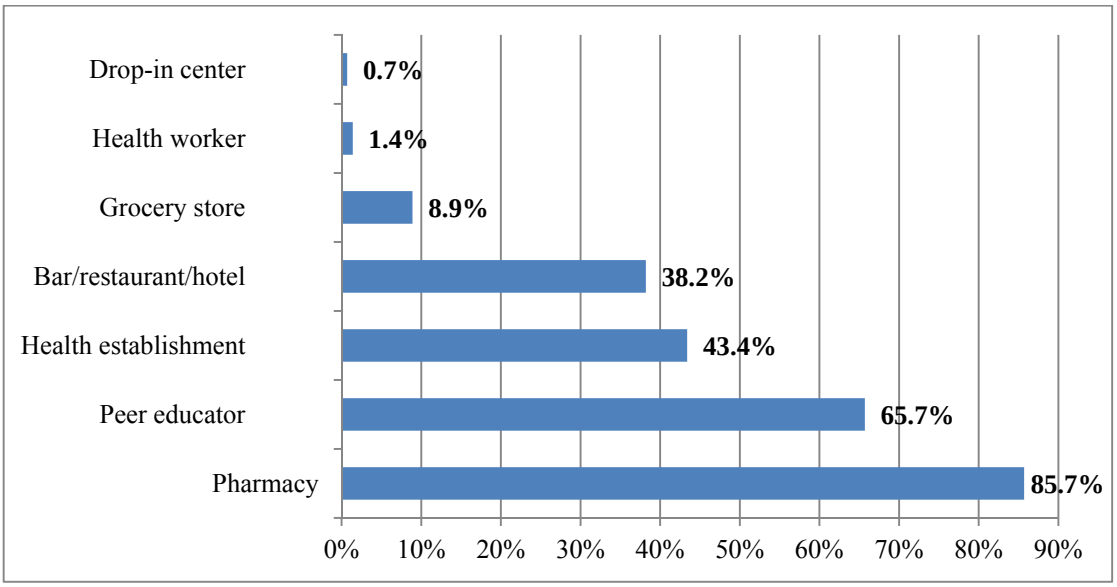

Figure 4.2 Percentage distribution of FSWs reported about places to get condoms (N=440)

4.1.4 Condom use of FSWs with different types of sexual partners

Condom use of FSW with three types of sexual partners is presented in Table 4.6. Results indicate that during the last month, the majority of FSWs (90.8%) in this study use condom consistently with their non-regular sexual partners. The percentage of consistent use of condom with regular sexual partners is smaller (72.1%). Not surprisingly, results show the lowest percentage of FSWs who use condom consistently with husband/boyfriend/lover (25.2%).

Table 4.6 Frequency and percentage distribution of FSWs by condom use with three types of sexual partners during the last month

Condom use	Frequency	Percentage (%)
With regular sexual partner	**312**	**100.0**
Consistent	225	72.1
Inconsistent	87	27.9
With non-regular sexual partner	**295**	**100.0**
Consistent	268	90.8
Inconsistent	27	9.2
With husband/boyfriend/lover	**143**	**100.0**
Consistent	36	25.2
Inconsistent	107	74.8

4.2 Bivariate Analysis

This section focuses on bivariate analyses using Chi-square test of the independent variables and the dependent variables. There are three tables showing the relationship between all factors including predisposing, enabling and reinforcing factors with FSW's consistent condom use with each type of sexual partners, namely regular sexual partners, non- regular sexual partner and husband/lover. Note for marital status that although in univariate analysis, the variable is categorized as 3 categories, single, married, and divorced/separated/widowed, due to small number of cases in married category when crossing by type of sexual partner, married category is put together with divorced/separated/widowed and labeled as not single.

Table 4.7 presents results from Chi-squared test of association between independent factors and consistent use with *regular partner*. Four factors, i.e. duration of sex work, number of regular sexual partners, HIV knowledge and negotiation skill have a significant association with consistent condom use with regular sexual partners.

The percentage of consistent condom is highest among FSWs who have worked from 1 year and less (78.9%) and lowest among those working more than 3 years (62.8%). The association between condom use and duration of sex work is significant at 0.05 level. FSWs with less than 4 sexual partners use condom consistently more than those who have from 4 - 6 sexual partners and over 6 sexual partners. The proportions are 82.5%, 75.9% and 58.6% respectively. Regarding HIV knowledge, FSWs with good HIV knowledge use condoms consistently more than those with poor HIV knowledge (76.2% VS 65.8%, respectively). Another significant variable based on bivariate analysis is negotiation skill. The consistent condom use is higher among FSWs who did persuade their sexual partners to use condom in the recent sexual intercourse than those who did not (79.7% VS 28.3 %). Negotiation skill among FSWs with regular sexual partners is associated with consistent condom use at 0.001 level of significant.

Table 4.7 Percentage distribution of FSWs' condom use with regular sexual partners by all factors

Characteristics	Condom use (N = 312)		Total	Number	Chi square
	Consistent	Inconsistent			
Age group (years)					2.93
< 20	82.1	17.9	100.0	39	
20-24	73.3	26.7	100.0	120	
≥ 25	68.6	31.4	100.0	153	
Marital status					2.01
Single	75.1	24.9	100.0	185	
Not single	67.7	32.3	100.0	127	
Educational level					1.90
Primary and lower	83.3	16.7	100.0	24	
Secondary school	72.4	27.6	100.0	163	
High school and higher	69.6	30.4	100.0	125	
Duration of sex work					**8.6***
≤ 1 year	78.9	21.2	100.0	95	
>1-3 years	77.1	22.9	100.0	96	
>3 years	62.8	37.2	100.0	121	
Age at first selling sex					0.01
≤ 20	73.3	26.7	100.0	161	
≥ 21	72.7	27.3	100.0	132	
Number of regular sexual partners					**16.8*****
1- 3 partners	82.5	17.5	100.0	114	
4 – 6 partners	75.9	24.1	100.0	87	
>6 partners	58.6	41.4	100.0	111	
HIV knowledge					**3.95***
Poor	65.8	34.2	100.0	123	
Good	76.2	23.8	100.0	189	
Negotiation skill with regular sexual partners					**51.6*****
Did not persuade	28.3	71.7	100.0	46	
Persuaded	79.7	20.3	100.0	266	
Accessibility to condom					0.39
Inaccessible	70.5	29.5	100.0	156	
Accessible	73.7	26.3	100.0	156	
Availability of condom					0.47
Unavailable	77.8	22.2	100.0	27	
Available	71.6	28.4	100.0	285	

*Significant level: *p ≤ 0.05 ** p ≤ 0.01 *** p ≤ 0.001;*

Table 4.8 shows results from exploring possible relationship between the independent variables and consistent use with *non-regular sexual partner*. Three variables show significant relationship with consistent condom use with non-regular sexual partners, i.e. duration of sex work, HIV/AIDS knowledge and negotiation skill. In terms of duration of sex work, FSWs working from 1 year or less use condoms consistently in a higher proportion than those working for more than 1 – 3 years and over 3 year (96.2%, 89.2% and 86.2%, respectively). HIV/AIDS knowledge is significantly associated with consistent condom use among FSWs at 0.01 level. The percentage of consistent condom use is 94.6 among FSW having good HIV knowledge compared to 84.7% of those who had poor HIV knowledge. Concerning the negotiation skill, the use of consistent condom among FSWs who can persuade their partners to use condoms was 93.5%, which is nearly twice of FSWs who failed to persuade. The relationship is statistically significant at 0.001 level.

Table 4.8 Percentage distribution of FSW's consistent condom use with non-regular sexual partners by all factors

Characteristics	Condom use (N=295)		Total	Number	Chi square
	Consistent	Inconsistent			
Age group (years)					2.07
< 20	87.5	12.5	100.0	48	
20 - 24	89.2	10.8	100.0	111	
≥ 25	93.4	6.6	100.0	136	
Marital status					0.31
Single	90.1	9.9	100.0	182	
Not single	92.0	8.0	100.0	113	
Educational level					1.59
Primary school and lower	96.8	3.2	100.0	32	
Secondary school	90.3	9.7	100.0	155	
High school and higher	90.0	10.0	100.0	108	
Duration of sex work					**6.27***
≤ 1 year	96.2	3.8	100.0	106	
>1 - 3 years	89.2	10.8	100.0	102	
> 3 years	86.2	13.8	100.0	87	
Age at first sell sex					2.71
≤ 20 years old	88.2	11.8	100.0	152	
≥ 21 years old	93.8	6.2	100.0	130	
Number of non-regular sexual partners					3.12
1 -7 partners	93.7	6.3	100.0	95	
8 -20 partners	92.2	7.8	100.0	102	

Characteristics	Condom use (N=295)		Total	Number	Chi square
	Consistent	Inconsistent			
>20 partners	86.7	13.3	100.0	98	
HIV knowledge					**8.13****
Poor	84.7	15.3	100.0	111	
Good	94.6	5.4	100.0	184	
Negotiation skill with non-regular sexual partners					**38.46*****
Did not persuade	50.0	50.0	100.0	18	
Persuaded	93.5	6.5	100.0	277	
Accessibility to condom					2.60
Inaccessible	88.2	11.8	100.0	153	
Accessible	93.6	6.4	100.0	142	
Availability of condom					1.60
Unavailable	84.8	15.2	100.0	33	
Available	91.6	8.4	100.0	262	

*Significant level: *p ≤ 0.05 ** p ≤ 0.01 *** p ≤ 0.001;*

With regard to condom use with husband/boyfriend/lover, results are shown in Table 4.9. There is only one factor that has a relationship with consistent condom use at 0.001 level, which is negotiation skill. FSWs who negotiated with husband/lover about using condom use condom consistently more than FSWs who did not negotiate their husband/lover to use condoms. The difference is over 30% (48.2% VS 11.2%) and significant at 0.001 level.

To conclude, after testing by Chi-squared, factors associated with consistent condom use with *regular sexual partners* (Table 4.7) are duration of sex work, number of regular sexual partners, HIV knowledge, and negotiation skill. As for condom use with *non-regular partners* (Table 4.8), associated factors include duration of sex work, HIV knowledge and negotiation skill. And finally, for having sex with *husband/lover*, significant factor of consistent condom use is negotiation skill (Table 4.9). Therefore, across three types of sexual partners, bivariate analysis indicates that negotiation skill is a robust significant factor associated with condom use.

Table 4.9 Percentage distribution of FSW's condom use with husband/lovers by all factors

Characteristics	Condom use (N=143)		Total	Number	Chi square
	Consistent	Inconsistent			
Age group (years)					0.75
< 20	26.1	73.9	100.0	23	
20-24	29.2	70.8	100.0	48	
≥ 25	22.2	77.8	100.0	72	
Marital status					0.05
Single	26.0	74.0	100.0	77	
Not single	24.2	75.8	100.0	66	
Educational level					1.00
Primary and lower	15.4	84.6	100.0	11	
Secondary school	24.3	75.7	100.0	70	
High school and higher	28.3	71.7	100.0	60	
Duration of sex work					0.45
≤ 1 year	21.7	78.3	100.0	46	
> 1-3 years	26.1	73.9	100.0	46	
> 3 years	27.5	72.5	100.0	51	
Age at first sell sex					3.13
≤ 20 years old	29.3	70.7	100.0	75	
≥ 21 years old	16.4	83.6	100.0	61	
Number of husband/lover					1.34
1	23.3	76.7	100.0	120	
>1	34.8	65.2	100.0	23	
HIV knowledge					2.68
Poor	17.3	82.7	100.0	52	
Good	29.7	70.3	100.0	91	
Negotiation skill with husband/lover					**24.31*** **
Did not persuade	11.2	88.8	100.0	89	
Persuaded	48.2	51.8	100.0	54	
Accessibility to condom					0.11
Inaccessible	26.4	73.6	100.0	72	
Accessible	23.9	76.1	100.0	71	
Availability of condom					0.11
Unavailable	21.4	78.6	100.0	14	
Available	25.6	74.4	100.0	129	

*Significant level: *p ≤ 0.05 ** p ≤ 0.01 *** p ≤ 0.001;*

4.3 Multivariate Analysis

To examine the effects of factors on consistent condom use in the last month with regular, non-regular sexual partners and husband/lover, binary logistic regression models are used because the dependent variable (condom use) has two categories, consistent = 1 and inconsistent = 0. Three main models are constructed to predict effects of predisposing, enabling, and reinforcing factors on consistent condom use with three types of sexual partners among FSWs.

Model 1 which shows the **consistent condom use among FSWs with regular sexual partners** includes 3 sub-Models. **Model 1A** explores effects of predisposing factors (age, marital, education, duration of sex work and age at first selling sex). **Model 1B** explores enabling risk factors (number of non-regular partners and HIV knowledge) while controlling for predisposing factors. And **Model 1C**, which is a complete Model, further explores effects of reinforcing factors (negotiation skill, perceived accessibility to condoms and availability of condoms) while controlling for predisposing and enabling risk factors at the same time.

Model 2 and **Model 3** follow the same logic as **Model 1,** but for **consistent condom use among FSWs with non-regular sexual partners and consistent condom use among FSWs with husband/boyfriend/lover**, respectively. The results are considered as statistical significant if the level of significance is at 0.05 or more. For each model, the odds ratio, standard error, log likelihood and significance level of independent variables are shown in the table. The results are presented in Tables 4.10, 4.11 and 4.12 as follow.

Note that before running multivariate analysis, Pearson Correlation Analysis was performed to identify potential multi-colinearity among the independent variables of each Model. The results point out that although most independent variables are correlated with each other, none are highly correlated with each other ($r > 0.8$). Therefore, I included all independent variables in the Models.

Model 1A in Table 4.10 shows that there is one factor, duration of sex work which has significant association with consistent condom use among FSWs with regular sexual partners. FSWs who work for over 3 years are 50% less likely to use condoms consistently than those who work for less than one year ($p \leq 0.05$). When adding number of regular sexual partners and HIV knowledge in Model 1B, results

show that number of regular sexual partners is significant. The odds of using condoms consistently among FSWs with more than 6 partners is 67% less than those who have less than 4 partners ($P \leq 0.001$).

Model 1C put all factors (predisposing, enabling risk and reinforcing factors) to explore their effects on consistent condom use among FSWs with regular partners. Results indicate two significant variables namely number of regular sexual partners and negotiation skill. In Model 1C, number of sexual partners remains highly associated with consistent condom use. FSWs who have more than 6 sexual clients are 65% less likely to use condom consistently than those FSWs who have less than 4 sexual clients ($P<0.01$). The effect of negotiation skill variable is worth noting. Negotiation skill has a strong association with consistent condom use in Model 1C. The odds ratio of negotiation skill is 11.9 and significant at 0.001 level. FSWs who persuaded their regular partner to use condoms are 11.9 times more likely to use condom consistently than those FSWs who did not persuade.

Table 4.10 Binary logistic regression results for factors of FSWs' consistent condom use with regular partners

Independent variables	Model 1 Consistent condom use with regular partners		
	Model 1A	Model 1B	Model 1C
	Odds ratio	Odds ratio	Odds ratio
Age group (years)			
< 20 ®			
20-24	0.67	0.71	0.62
≥ 25	0.69	0.73	0.72
Marital status			
Single ®			
Not single	0.76	0.64	0.46
Educational level			
Primary and lower®			
Secondary school	0.55	0.60	0.93
High school and higher	0.50	0.51	1.00
Duration of sex work			
< 1 year®			
1-3 year	1.00	0.96	0.61
>3 years	**0.50***	0.59	0.45
Age at first selling sex			
< 20 years old®			

Independent variables	Model 1 Consistent condom use with regular partners		
	Model 1A	Model 1B	Model 1C
	Odds ratio	Odds ratio	Odds ratio
≥ 21 years old	1.42	1.71	1.94
Number of regular sexual partners			
1-3 partners ®			
4-6 partners		0.65	0.55
>6 partners		**0.33*** **	**0.35** **
HIV knowledge			
Poor®			
Good		1.60	1.73
Negotiation skill with regular sexual partners			
Did not persuade®			
Persuaded			**11.9*** **
Accessibility to condom			
Inaccessible®			
Accessible			1.30
Availability of condom			
Unavailable®			
Available			0.61
N	**312**	**312**	**312**
LR Chi - square	**12.54***	**29.34*** **	**74.2*** **
Pseudo R square	**0.03**	**0.08**	**0.20**

*** p < 0.001 ** p < 0.01 * p < 0.05; S.E = Standard error; ® = Reference

Table 4.11 shows the results of Model 2 (condom use with non-regular partners). In Model 2A, among predisposing factors, 2 factors, age group and duration of sex work, are associated with consistent condom use among FSWs with non-regular partners. Age group has a positive relationship with consistent condom use while duration of sex work has a negative association. FSWs aged over 25 years old are more likely to use condoms consistently. The odds ratio of age group aged over 25 years old is 6.33 times more than that of FSWs who are less than 20 years old. The significance is 0.05 level. Regarding duration of sex work, the longer FSWs sold their sex, the smaller chance they practice consistent use of condom. FSWs who work for from 1-3 years and over 3 years are 76% and 89%, respectively, less likely to use condom consistently with non-regular partners compare to those who work as sex

workers for less than one year ($p \leq 0.05$ for FSWs with 1-3 years and FSWs with over 3 years).

In Model 2B when enabling risk factors (number of sexual partner and HIV knowledge) are included, three factors namely age group, duration of sex work and HIV knowledge show significant association with consistent condom use among FSWs with non-regular partners. Age group and duration of sex work remain significant. When adding enabling and risk factors, HIV knowledge appears to be strongly significant with consistent condom use. FSWs who have good HIV knowledge are 4 times more likely to use condom consistently compared to those who do not have good HIV knowledge ($p<0.01$).

In Model 2C, when we add reinforcing factors, i.e. negotiation skill, perceived accessibility to condom and availability of condom at work controlling for predisposing and enabling risk factors, duration of sex work, number of sexual partners, HIV knowledge, negotiation skill and accessibility to condoms have significant relationship with consistent condom use among FSWs with non-regular partners. Duration of sex work retains its significance across 3 sub-models and HIV knowledge also is significant at both Model 2B and Model 2C. As for reinforcing factors, results show that negotiation skill and accessibility to condoms have a positive relationship with consistent condom use in this Model.

Model 2C further indicates that FSWs who persuaded with non-regular partners to use condom have higher likelihood to consistently use condoms than those who did not persuade. The chance to use condom consistently among FSWs who persuaded is 28.3 times higher than those FSWs who did not persuade ($p<0.001$). Interestingly, accessibility to condoms also has a positive association with consistent condom use. FSWs who perceive that condom is accessible are 3.5 times more likely to use condoms consistently than their counterparts. The association is significant at 0.01 level.

Table 4.11 Binary logistic regression results for factors of FSWs' consistent condom use with non - regular partners

Independent variables	Model 2 Consistent condom use with non- regular partner		
	Model 2A	Model 2B	Model 2C
	Odds ratio	Odds ratio	Odds ratio
Age group (years)			
< 20 ®			
20-24	2.39	2.99	2.78
≥ 25	**6.33***	**7.42***	3.04
Marital status			
Single ®			
Not single	0.62	0.35	0.65
Educational level			
Primary and lower®			
Secondary school	0.55	0.64	0.40
High school and higher	0.57	0.49	0.45
Duration of sex work			
< 1 year®			
1-3 year	**0.24***	**0.18***	**0.10****
>3 years	**0.11***	**0.09****	**0.08****
Age at first selling sex			
< 20 years old®			
≥ 21 years old	1.41	2.21	3.90
Number of non-regular sexual partners			
1-7 partners ®			
8-20 partners		0.55	0.34
>20 partners		0.38	**0.17***
HIV knowledge			
Poor®			
Good		**4.29****	**3.20***
Negotiation skill with non - regular partners			
Did not persuade®			
Persuaded			**28.3*****
Accessibility to condom			
Inaccessible®			
Accessible			**3.55***
Availability of condom			
Unavailable®			
Available			1.03
N	**295**	**295**	**295**
LR Chi - square	**15.9**	**29.5****	**57.0*****
Pseudo R square	**0.08**	**0.16**	**0.31**

*** p < 0.001 ** p < 0.01 * p < 0.05; S.E = Standard error; ® = Reference

Model 3 (consistent condom use with husband/lovers) includes Model 3A, Model 3B and Model 3C. After introducing enabling risk factors, none of the included variables are significant. In the last Model (Model 3C) only negotiation skill has a positive association with consistent condom use among FSWs with husband/lovers. Negotiation skill has a strong positive association with consistent condom use, significant at 0.001 level. FSWs who did persuade their husband/lover to use condoms at the recent sex are 8.96 times more likely to use condom consistently than those who did not.

Table 4.12 Binary logistic regression results for factors of FSWs' consistent condom use with husband/lover

Independent variables	Model 3 Consistent condom use with husband/lovers		
	Model 3A	Model 3B	Model 3C
	Odds ratio	Odds ratio	Odds ratio
Age group (years)			
< 20 ®			
20-24	1.27	1.12	1.40
≥ 25	0.99	0.76	1.21
Marital status			
Single ®			
Non single	1.22	1.29	3.37
Educational level			
Primary and lower®			
Secondary school	1.34	1.41	0.94
High school and higher	1.36	1.30	0.72
Duration of sex work			
< 1 year®			
1-3 year	1.27	1.16	1.03
>3 years	1.64	1.57	1.22
Age at first sell sex			
< 20 years old®			
≥ 21 years old	0.39	0.45	0.39
Number of husband/lovers			
1 ®			
>1		0.65	1.40
HIV knowledge			
Poor®			
Good		1.82	1.24
Negotiation skill husbands/lovers			
Did not persuade®			

Independent variables	Model 3 Consistent condom use with husband/lovers		
	Model 3A	Model 3B	Model 3C
	Odds ratio	Odds ratio	Odds ratio
Persuaded			**8.96*** **
Accessibility to condom			
Inaccessible®			
Accessible			0.65
Availability of condom			
Unavailable®			
Available			1.76
N	**143**	**143**	**143**
LR Chi - square	**6.28**	**8.89**	**30.19*** **
Pseudo R square	**0.04**	**0.06**	**0.19**

In brief, results in Table 4.10, Table 4.11 and Table 4.12 show us three pictures about the effects of predisposing, enabling risk, and reinforcing factors on FSWs' consistent condom use. The effects differ by type of sexual partners with whom FSWs in this study have sex. For having sexual intercourse with *regular sexual partners*, 2 significant factors which are *number of sexual partners* (enabling risk factor) and *negotiation skill* (reinforcing factor) affect consistent condom use among FSW. For having sexual intercourse with *non-regular sexual partners*, 5 factors associated with consistent condom use are *duration of sex work* (predisposing factor), *number of sexual partners, HIV knowledge* (enabling risk factor), *negotiation skill* and *accessibility to condom* (reinforcing factors). When having sexual intercourse with *husband/lover*, only *negotiation skill*, considered as one of reinforcing factors, has a significant association with consistent condom use among FSWs. The summary of findings is shown in the table below.

Table 4.13 Summary of findings

Significant variable	With regular sexual partner	With non-regular sexual partner	With husband/lover
Duration of sex work	NS	√ (-)	NS
Number of sexual partner	√ (-)	√ (-)	NS

Significant variable	With regular sexual partner	With non-regular sexual partner	With husband/lover
HIV knowledge	NS	√ (+)	NS
Negotiation skill	√ (+)	√ (+)	√ (+)
Accessibility to condom	NS	√ (+)	NS

In this study, through the 3 main models, some factors are found to have significant effects on condom use of FSWs with their sexual partners, while others do not show the relationship found in previous studies.

Comparing the research hypotheses in Chapter 2 and the results comes to the following conclusion:

(H_1) FSWs who work for longer time are more likely to use condoms consistently with their sexual partners than those who do not. In this study, duration of sex work does have a relationship with consistent condom use with non-regular partner, but not with regular partner or with husband/lovers. However, the relationship is in an opposite direction of the hypothesis. So, the findings are against the hypothesis.

(H_2) FSWs with multiple sexual partners are more likely to use condoms consistently than FSWs having fewer sexual partners. The results reveal that with regular and non-regular sexual partner, FSWs who have higher number of partners are less likely to use condoms consistently than FSWs who have fewer partners. Thus, findings are against the hypothesis.

(H_3) FSWs having good HIV knowledge are more likely to use condoms consistently than those with poor HIV knowledge. The result in this study show significant association of HIV knowledge and consistent condom use with non-regular sexual partners. The findings support the hypothesis.

(H_4) FSWs who have negotiation skill (measured by their persuading sexual partner to use condoms) are more likely to use condom consistently than those who do not. In this study, negotiation skill clearly shows a strong association with consistent condom across types of sexual partner. So, the findings strongly support the hypothesis.

4.4 Discussion

Research on sexual behavior of FSWs is not a new topic in Thanh Hoa Province. However, this is the first analysis based on a survey that represents FSWs of the whole province. The results are meaningful and significant in designing intervention programs for this group. Condom use is the most effective and economic measure in the control and prevention of HIV and STIs, especially in the context where HIV vaccine is not available. Consistent and correct condom use is a key factor in harm reduction program for FSW to prevent HIV and STIs prevalence for the community. Thus, understanding factors associated with consistent condom use of FSWs is instrumental to assist the harm reduction program for FSW more effectively.

The most striking factor for FSWs' condom use in this study is negotiation skill, which shows robust results for all 3 types of sexual partners, regular, non-regular sexual partners and their husband/lovers. FSWs who persuade their regular and non-regular sexual partners to use condom have a higher chance of consistent condom use. The findings support past studies, e.g. Wong et al.(2003). However, some previous studies note that FSWs have difficulty in negotiating with their clients although they desire to protect their health from HIV and STIs and have good knowledge about HIV and condom. Sometimes, clients refuse to use condom due to their habit or pleasure or religion. These present barriers for FSWs to practice safe behaviors (Bao, 2004). This is especially true in the context of Vietnam and Asian countries where men are usually decision maker of whether to use condom in the sexual relationship.

In fact, and more importantly, negotiation skill in persuading husband/lover to agree to use condom consistently is a key issue. As seen in this study, the proportion of persuading husband/lovers to use condom is lower than regular and non-regular partner. This in turn leads to lower rate of condom use with husband/lover. Further results show that FSWs who persuade their husband/lover to use condom are more likely to use condoms consistently than those who do not persuade. Murray (2007) reports existing factors associated with higher rates of using condoms with non-regular sexual partners and lower rates of condom use with husband/lovers. Results from many other studies are as well consistent. Hawken (2002), Dhopeshwarkar (2007), Moon (2001), and Chan (2001) state that FSWs are more likely to use condom with non-regular sexual partners than that with

husband/lover. The explanations range from their husband/lover refuse to use condom (Moon, 2001) to some FSWs thought that having sex with their boyfriends was safe (Chan, 2001).

Duration of sex work is negatively associated with consistent condom use of FSWs with non-regular sexual partners, but not with other types of partner. The longer FSWs work, the less likely they would practice consistent condom use with non-regular sexual partners. This result is not in line with previous studies such as a survey in Vietnam (Nguyen et al, 2000) which finds a positive relationship between duration of sex work and condom use. However, a study in Cambodia does not show a difference in terms of condom use between new and longer-working FSWs (Sophiab et al, 2008). In this context, it seems that longer-term FSWs are less aware of safe sex with non-regular partner. FSWs' experience and being used to the work may make them less careful. Not using condom consistently among longer-term FSWs may have to do with their inferior in power relation to clients. FSWs who have worked for a longer term may usually be the older ones. These FSWS may suffer from economic pressure more than their counterparts. While they need money as others, older FSWs have fewer choices. Thus, they must follow their partners' desire even if it means having sex without condoms. Another possible reason is that because FSWs are hidden group, some of them are afraid of going through HIV test, so they do not know about their HIV status. Thus, they are less likely use condom when having sex. These FSWs may also experience having sex with IDU who are HIV positive, but she did not get HIV. So, they think that they should be fine without any interest in using condom.

Number of sexual partners is another significant factor negatively affecting consistent condom use with both regular- and non- regular partners. FSWs who have more sexual partners are less likely to use condoms consistently than those who have fewer partners. Though inconsistent with what this study would expect based on the hypothesis and some other previous studies (e.g. Nguyen, 2000), these findings confirm results from previous studies. For example, Greyman (2005) shows that successful negotiation for using condom is found more among FSWs with fewer clients. Possible reason for FSWs with more sexual partners less likely to use condom consistently may be due to their health and the price in selling sex. Having sex without obligation to use condom during sexual intercourse may allow FSWs for higher price from clients who

may regard condom as barrier to their pleasure and relaxing. While work for money, FSWs may also care for their health. However, in order not to lose their job, FSWs do not have choices and have to accept to have sex without using condom with their clients. The results from this study found that FSWs who have multiple sexual partners are at older age and have longer duration in this work (42% of FSWs who had multiple sexual partners are more than 25 years old and two-thirds of them had longer duration in this work). Young FSWs are usually more attractive to clients than old FSWs. If the older FSWs want to continue keeping their jobs, they may focus more on earning money and may be less aware of using condom and less sensitive to their own health.

Concerning HIV knowledge, it has a positive association with consistent condom use with non-regular partners. It can be interpreted as FSWs who have good HIV knowledge are 4 times more likely to use condom consistently with their sexual partners than those who have poor HIV knowledge ($P<0.01$). A study by Habib et al (2001) also supports this finding, though Toor (2003), the Asian Development Bank (2002), and Soonthorndhada (1999) prove conversely. According to them, FSWs who have good HIV knowledge are less likely to use condom consistently with their clients. For example, in ADB's study in 2002, FSWs know well that condom is the best measure to protect them against HIV. However, the percentage to use condoms consistently only accounts for 15-39%. So, good HIV knowledge and safe behavior do not always support each other. However, my study supports that good HIV knowledge leads people to practice safe behaviors including using condom consistently during sexual intercourse. The results indicate the need of improving HIV knowledge among FSWs as a supporting factor for consistent condom use which will in turn prevent them from HIV infection.

Another significant factor is accessibility to condoms. Inaccessibility to condoms among FSWs is a barrier for using condoms consistently with their clients. This study shows that FSWs who can access to condom are more likely to use condoms consistently with non-regular partner than those who do not access. According to Morisky (1998) and Chan (2001), high price of condom and not easily access to condom as needed affect FSWs' using condom consistently with their clients. Moreover, in Vietnam some decades ago, although condom is expected to be a mean of reducing risk behavior related to HIV/STD transmission, for street FSWs,

having a condom is considered as "criminal evidence". As mentioned above sex work in Vietnam is illegal and FSWs with condoms in their body consider a proof for selling sex. (FHI, 2008; Morisky, 1998). This makes condom inaccessible for FSWs in a way. Nowadays, when the Government propagandizes and implements harm reduction programs such as providing condoms freely for FSWs, the proportion of using condoms increases prominently. FSWs get condoms from program and access to condom at pharmacy easier than before. People look at FSWs with not much stigmatizing and discriminating.

In terms of survey sites, among 4 survey sites, about ½ of FSWs belong to Sam Son beach – one of the beautiful tourist places attracting more than 2 million tourists every year. Thus, the number of FSWs also changes in each season. The number increase remarkably in summer. Due to being a tourist spot, the clients of FSWs are mainly tourists, which are non-regular sexual partners. The findings that show factors of consistent condom use with non-regular sexual partners are important in developing harm reduction program for FSWs with main clients as tourists, especially negotiation skill and accessibility to condoms.

The study sample who agreed to take part in this study may also be selective towards those with higher education with good HIV knowledge. Thus FSWs in the community have lower HIV knowledge and low level of education may not be included in this study. This may affect the results.

Another limitation of the study is that it uses a secondary data set from a cross-sectional survey to seek factors associated with behavior of condom use with different types of sexual partners of FSWs. The data is based on self-reported of FSWs and some information may be biased because of memory error, e.g. number of sexual partners they have sexual intercourse during the last month. For example, some FSWs reported they had 99 sexual partners in the last one month, excluding of “missing and not remember”.

In conclusion, factors included in this analysis, guided by the Precede-Proceed Model (predisposing, enabling risk and reinforcing factors) affect consistent condom use with regular, non-regular sexual partners, and husband/lover to some extent. The findings should be emphasized and incorporated in the specific harm reduction and intervention programs.

CHAPTER V
CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study aims to find factors affecting consistent condom use among FSWs in Thanh Hoa Province, using secondary data from a cross-sectional survey on knowledge, attitude and behavior on HIV/AIDS prevention among FSWs in Thanh Hoa Province, Vietnam. The survey was conducted by Thanh Hoa Department of Health in 2009. The dependent variable in this study is condom use and the predisposing, enabling risk and reinforcing factors are used as independent variables. Predisposing factors include age, marital status, education, duration of sex work and age at first selling sex. Enabling risk factors include number of each type of sexual partners and HIV knowledge. Reinforcing factors include negotiation skill, perceived accessibility to condoms and availability of condoms at sex work.

Most FSWs in this study are young. Nearly 50% of them are 24 years old and younger, with the mean age of 25. More than half of them are single and about 90% of them are at the secondary school and higher. The average age at first selling sex of FSWs is 22 and average duration of sex work is 2.6 years. FSWs with more than 6 regular sexual partners account for 35.6%, while 33.2% of FSWs have more than 20 non-regular partners. The proportion of FSWs who have husband/boyfriend is 32.5%. The percentage of FSWs who persuade regular, non-regular partners and husband to use condom in recent sex is 85.3%, 93.9% and 37.8%, respectively. More than 60% of FSWs have good HIV knowledge. More than half of FSWs know less than 3 sources to get condom and 89% of them indicate that condoms are available at sex work. The percentage of consistent condom use among FSWs differs by types of sexual partners. The proportions are 72.1%, % 90.8% and 25.2 %, respectively.

Findings highlight the significant roles of negotiation skill, number of sexual partner, HIV knowledge, accessibility to condom, and duration of sex work as associated factors of consistent condom use, though to a different extent with regard to

type of sexual partner. Negotiation skill shows most robust results compared to the other three significant factors as it reveals significant association with consistent condom use when having sex with all three types of sexual partners investigated in the analysis. FSWs with negotiation skill, measured in this study by whether or not they persuaded their sexual partner to use condom while having recent sex, are more likely to use condom consistently than those who did not. Results are confirmed whether the sexual partner is regular, non-regular, or husband/lover.

Another factor that shows a significant association with condom use is number of partners, though it is significant only with regular and non-regular partner, not with husband/lover. With regular partner, findings suggest that FSWs with more than 6 partners are less likely to use condoms consistently compared to those who have less than 7 partners. With non-regular partners, results show that having more than 20 sexual partners decreases the odds of using condom consistently.

The finding indicates that HIV knowledge do not associate with regular sexual partner and husband/lover while HIV knowledge is significant with just non-regular sexual partners. The odds ratio to use condoms consistently is 3.2 times for FSWs with good HIV knowledge compared with those with poor HIV knowledge.

Accessibility to condom is significant when using condom use with non-regular partner as the dependent variable. The odds of using condoms consistently increases when FSWs access to condom compare to those who do not access to condom. Duration of sex work is a significant factor of consistent condom use only when the intercourse is with non-regular partner. The longer duration of sex work among FSWs, the lower rate of using condoms consistently with non-regular partners. FSWs working for 1 year or over are less likely to use condoms consistently with non-regular partners, respectively than those with less than 1 year of sex work.

5.2 Recommendations

5.2.1 Recommendations for HIV/AIDS intervention programs in Thanh Hoa Province

The following recommendations proposed here are based on the results that a number of factors have significant effects on FSWs' condom use behavior.

1) Negotiation skill is a strong factor affecting consistent condom use among FSWs with all types of sexual partners. Thus, the intervention programs should build up negotiation skill among FSWs to persuade their clients to use condom. This can be done via communication activities and peer educators in providing knowledge about consistent and correct use of condom. The intervention programs should seek cooperation and support from FSWs' employers such as bars, hotels/restaurants and mass media for both FSWs and their clients.

2) Intervention programs should be given priority for FSWs who have multiple sexual partners and work for long term through several channels such as direct communication, leaflets and condom provision, and introduction to VCT.

3) Accessibility to condom impacts consistent condom use among FSWs. So, designing interventions programs should focus on accessibility to condom for both FSWs and their partners, especially for FSWs with low level of education. More importantly, for FSWs the 100% Condom Use Program (CUP) model, which has been implemented successfully in Thailand and Cambodia, should be extensively strengthened to promote condom use among FSWs and their clients to prevent cross-spread of HIV among them.

4) The intervention programs should seek cooperation and support from FSWs' employers such as bars, hotels/restaurants and mass media for both FSWs and their clients. The intervention activities designed by basing on each type of sexual partners.

5) HIV knowledge affects FSWs' using condoms consistently. So, Information- Education- Communication (IEC) program should make strong attempt to provide more correct information on condom use to encourage FSWs at all age group to use them. IEC materials should be printed by visible pictures, easy words so that FSWs could read, understand and make the intervention effective and feasible.

6) The special Model 100 CUP in summer should be applied for Sam Son beach, one of the survey sites, because of its feature and need to develop this special Model through 3 channels namely hosts of hotels/restaurants; peer educators and clients of FSWs.

5.2.2 Recommendations for future research

1) The results show that consistent condom use among FSWs remains low. While this analysis provides useful insights in terms of associated factors, more thorough and comprehensive understanding is necessary to promote consistent condom use. Researches that use mixed methods of both quantitative and qualitative approaches to understand the underlying reason of not using condom, including barriers and difficulties among FSWs are needed.

2) This study finds factors affecting consistent condom use among FSWs with different types of sexual partners from FSWs' perspectives. However, using condom is more of clients' decision than FSWs. Thus, further research should take into account of related factors based on their clients' point of view as well.

3) In the context where differences in gender roles are quite strong like Vietnam, usually man is a person who decided everything in the family for both household and the way to have sexual intercourse, especially for FSWs who sold their sex for money. The negotiation to use condoms with their clients is not easy. There should be conducted survey on assessment of condom use among FSWs and factors affect negotiation skill among them.

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APPENDICES

APPENDIX A

Selected questions from the questionnaire that are used in this study:

No	Questions	Code
Predisposing factors		
Q101	When were you born?	Month [__|__] Year [__|__] Don't know year 99
Q103	What is the highest level of school you completed?	Illiterate 1 Primary (grade1-5) 2 Secondary (grade 6-9) 3 High school (grade 10-12) 4 College/ University 5
Q201	What is your marital status?	Single 1 Married 2 Divorced 3 Separated 4 Widowed 5
Q202	At what age did you sell sex ***for the first time***?	Year |__|__| Do not remember 99
Q203	How long have you sold sex?	Number of month [__|__] < 1 month '01' Number of year [__|__]
Enabling factors		
Q402	***<u>During the last 1 month,</u>*** how many different sexual partners have you had sexual intercourse with?	|__|__|__| partners do not 999

Q403	***<u>During the last 1 month</u>,*** among all of your sexual partners how many were: - ***One-time clients*** (had sexual intercourse in exchange for money one time) - ***Regular clients*** (had sexual intercourse in exchange for money many times) - ***Husband/boyfriend*** *(Number can not over number of C402)*	403.1. |__|__|__| one -time clients do not 999 403.2. |__|__| regular do not 99 403.3. |__|__| husband/ lovers do not 99
Knowledge		
	Is looking healthy person infected with HIV?	Yes 1 No 2 Don't know 9
	Using public toilets to be infected with HIV?	Yes 0 No 2 Don't know 9
	Using condom every time during sexual intercourse prevents HIV transmission.	Yes 1 No 2 Don't know 9
	Mosquitoes and other insect bites will transmit HIV.	Yes 0 No 2 Don't know 9
	Sharing needles when injecting drugs will increase the risk of HIV infection.	Yes 1 No 2 Don't know 9

Reinforcing factors		
Q603	***In the last 1 month*** you had sex with regular sexual partners, did you ASK that client to use a condom?	Yes 1 No 2 Don't remember/ no response 9
Q503	***In the last 1 month*** you had vaginal or anal sex with a one- time client (non-regular sexual partners), did you ASK that to use a condom?	Yes 1 No 2 Don't remember/ no response 9
Q702	***In the last 1 month*** you had sex with husband/lovers, did you ASK that client to use condom?	Yes 1 No 2 Don't remember 9
Q802	Do you know any place from which you can obtain/buy condoms?	Yes No Pharmacy 1 2 Grocery store 1 2 Health establishment 1 2 Bar/restaurant/hotel 1 2 Peer educator 1 2 Health worker 1 2 Drop-in center 1 2 Others (specify) 1 2
Q803	Are condoms available at the place where you have sex with your clients?	Yes 1 No 2 Don't know 9
Dependent variable = Condom use		
Q505	How often did you use condoms with non-regular partners in the last month?	Always 1 Sometimes 2 Almost 3 Often 4 Never 5
Q605	How often did you use condoms with regular partners?	Always 1 Sometimes 2 Almost 3

		Often 4 Never 5
Q704	How often did you use condoms with husband/lovers?	Always 1 Sometimes 2 Almost 3 Often 4 Never 5

APPENDIX B

PRECEDE-PROCEED MODEL

The PRECEDE-PROCEED framework is founded in the disciplines of epidemiology, social, behavioral, and educational sciences, and health administration. Throughout the work with *Precede* and *Proceed*, two fundamental propositions are emphasized: (1) health and health risks are caused by multiple factors and (2) because health and health risks are determined by multiple factors, efforts to affect behavioral, environmental, and social change must be multidimensional or multisectoral, and participatory. The PRECEDE-PROCEED is community- based and participatory, founded on the premise that changes promoting health (and other community issues) are largely voluntary. Therefore, it needs the participation of those needing to change and others who might influence them or be influenced by them.

The PRECEDE-PROCEED model provides a comprehensive structure for assessing health and quality-of-life needs and for designing, implementing, and evaluating health promotion and other public health programs to meet those needs. PRECEDE (*P*redisposing, *R*einforcing, and *E*nabling *C*onstructs in *E*ducational *D*iagnosis and *E*valuation) outlines a diagnostic planning process to assist in the development of targeted and focused public health programs. PROCEED (*P*olicy, *R*egulatory, and *O*rganizational *C*onstructs in *E*ducational and *E*nvironmental *D*evelopment) guides the implementation and evaluation of the programs designed using PRECEDE.

In actual practice, PRECEDE and PROCEED function in a continuous cycle. Information gathered in PRECEDE guides the development of program goals and objectives in the implementation phase of PROCEED. This same information also provides the criteria against which the success of the program is measured in the evaluation phase of PROCEED. In turn, the data gathered in the implementation and evaluation phases of PROCEED clarify the relationships examined in PRECEDE between the health or quality-of-life outcomes, the behaviors and environments that

influence them, and the factors that lead to the desired behavioral and environmental changes. These data also suggest how programs may be modified to more closely reach their goals and targets.

The PRECEDE consists of five steps or phases. Phase 1 involves determining the quality of life or social problems and needs of a given population. Phase 2 consists of identifying the health determinants of these problems and needs. Phase 3 involves analyzing the behavioral and environmental determinants of the health problems. In Phase 4, the factors that predispose, reinforce, and enable the behaviors and lifestyles are identified. Phase 5 involves ascertaining which health promotion, health education and/or policy-related interventions would best be suited to encouraging the desired changes in the behaviors or environments and in the factors that support those behaviors and environments.

The PROCEED has only consisted in four phases, continued from the PRECEDE. Phase 6 focuses on the implementation of the program, evaluation or the intervention. Phase 7 consists in process evaluation, we can evaluate the process of the intervention or determine whether the program or intervention is proceeding according to plan. In phase 8, it involves impacting the evaluation, evaluating the intervention if having the intended impact on the behavioral and environment factors it's aimed at and adjust accordingly. The last phase focuses in the outcome. The intervention's effects are in turn producing the outcome.

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