SEXUAL BEHAVIORS ON HIV AND SEXUAL TRANSMITTED INFECTION AMONG FEMALE COMMERCIAL SEX WORKERS (CSWs) IN PHUKET

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A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy (Population and Development) School of Applied Statistics National Institute of Development Administration 2010

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ABSTRACT

| Title of Dissertation | Sexual Behaviors on HIV and Sexual Transmitted |
|-----------------------|---|
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The purpose of this study was to examine sexual risk behaviors, knowledge and awareness about HIV/AIDS amongst commercial sex workers (CSWs) and to study the health status and sexual health of women in Phuket. Data was collected by usingsystematic and qualitative research; in-depth interviews were used for collecting qualitative data including, HIV/AIDS surveillance data. In addition, the questionnaire for health status collecting, SF-36 (Short form 36), was applied to collect data from CSW informants. The data collection along with surveillance behavior associated with HIV/AIDS infection among female commercial sex workers occurred in June, 2007. This data was analyzed and presented using descriptive statistics. For qualitative data were applied data analysis techniques of Colaizzi (1987) and summarized as a concept induction (Analytical Induction)

The study revealed that the rate of HIV infection among commercial sex workers was likely reduced compared to previous years. This may reflect on the misunderstood perceptions or the recognition of inaccurate information, such as: cleaning the vagina immediately after sexual intercourse will prevent HIV/AIDS infection; trusting partners who are in a close relationship such as, their regular customers who look clean or a boyfriend; women may not be using condoms to gain more bargaining power; sexual assault; and heavy alcohol consumption with customers may reduce ability to assess risk. Other factors that may prevent condoms use are the quality of the condoms or being used without proper lubricants and the resulting discomfort de-motivates use. Condoms may be improperly used or the condom may leak during sexual intercourse. This study clearly shows the information about risk behaviors and the sexual health of commercial sex workers in Phuket. This information will be useful for those who have duties related to HIV prevention and control. However, studies using surveillance data have a limitation, due to population migration and changing patterns of commercial sex workers' work from direct to indirect commercial sex workers and the limitations of the tools used to collect data that was not covered. It is suggested, that the next study should be a continuously conduct study and focus on anthropological methods to further refine the qualitative data.

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CHAPTER 1

INTRODUCTION

1.1 Statement of the Problems

Prostitution is a social problem that has been deeply rooted in Thai society for a long time. It is a difficult problem to fix in terms of prevention or suppression. It also causes other problems for society such as crime, drugs, gambling and public health issues. Prostitution also has an unavoidable effect on the reputation and prestige of the nation. Therefore, approaches or measures to resolve the problem are still ongoing by the government and related agencies. Yet finding appropriate solutions seem to be out of reach. This is still an important issue in Thai society (Uraiwan Khanuengsukasaem and Suphanee Wechphongsa, 1999: 1).

Commercial sex workers are the most relevant and important link in the process of prostitution. Therefore, research has focused on the characteristics of female commercial sex workers who are the target of education promotion campaigns under various aspects such as economic, social, cultural and health. This research reflects the lives of women who work in prostitution and the social awareness and understanding of the issues of women selling sexual services. Thus, the research results act as a guideline for potential solutions.

Thailand has begun to understand the significance to develop the "human" through economic and social development, as outlined in the National Plan 8 (1997-2001). From this plan, people who have lower opportunities in society can reach a better quality of life, receive basic health services and have the opportunity to access health services as well as the knowledge of better health behaviors. The women that provide sexual services are a disadvantaged group in Thai society. However, the current background information on the health of women who provide sex for pay is limited. A review of information and knowledge that exists today in understanding the situation and circumstances of the health information system on the health of this

population are the important, both in terms of the scope of check services and to check the policy and development plan appropriate to public health in the future.

The issue of HIV infections in Thailand as a medical problem and a social issue became important in since 1984 with the discovery of the first case of an infected male homosexual. The problem is intensifying and expanding into broader social issues which resulted in the operation of a wider surveillance of HIV infection since 1989 in order to monitor the situation of HIV trends in most forms of transmission initially through women selling sexual services to men directly before it spread into the family. Women selling sexual services are an important factor associated with the spread of HIV infection to other populations. The average female commercial sex worker will provide sexual services six times a day. If an infection spreads to his wife, the potential daily encounter could affect up to 12 people, which affects both the patient's family, society and the nation. Because AIDS is a disease that affects the body's immune system, infected patients are more susceptible to opportunistic infections resulting in decreased physical performance, which affects the economic resources of the nation. A report on AIDS around the world May 2005 by UNAIDS / WHO found that the number of people infected with HIV/AIDS was estimated at 38.6 million people worldwide and it also found that new HIV cases in the same year were about 4.1 million people (UNAIDS / WHO, 2006).

Data from monitoring behaviors associated with HIV infection among female commercial sex workers in Thailand in 2006 found that patients with STIs including HIV /AIDS had changed their situation from the past, both changed as a result of the success of preventive measures and change resulting from the new value added (Wiwat Rojanaphithayakorn, 1989; Thanarak Phaliphat. 2006: 27-34; Manee Piyaanant. 2005.)

The nature of prostitution has changed from direct service facilities (brothels for example) to a more indirect or hidden locations such as massage parlors, karaoke bars, beer bars, telephone lists, etc. It was also found that some commercial sex workers were only working casually for extra income or were freelancing, not associated with any location Pornphan Booranasacha 2006: 73-75), which shows the difference in trying to monitor the control and spread of AIDS since its first appearance here. This has a direct impact on surveillance techniques and the ability to monitor commercial sex workers.

Surveillance of women infected with HIV in the population shows that commercial sex workers have high at risk behaviors for HIV infection and the prevalence of infection is high. (Thanarak Phaliphat. 2005: 1-12) and are also a source that can spread HIV to other populations.

Due to this problem, an annual government surveillance of HIV infections at a national level began in 1990. Surveillance behaviors associated with HIV infection in Thailand are applied to 6 groups, none of which includes women selling sexual services, (Khamnuan Ungchusak, et al., 1996: 225-243) even though this population is a population group with a wide range of behavioral risk factors including multiple sex partners and drug use. In 2004, the Board of Directors of Bureau of Epidemiology developed a model of surveillance behaviors associated with HIV infection. It has been suggested that epidemiologists can apply to start monitoring the behaviors of women in prostitution in order to follow the trending behaviors of women selling sexual services to keep pace with changes during this period. This is very useful for evaluating projects related to this population, as well as to plan campaigns for commercial sex workers to realize the importance of AIDS.

In addition, sexually transmitted infections (STIs) in 2006, as reported by Bureau of Epidemiology (2008), were 15,415 per 100,000 population, with a morbidity rate of 26.0 cases per thousand people. The STIs were broken down by type: Non-specific STIs 4983 patients (32.33%), gonorrhea in 4,572 patients (29.66%), chlamydia trachomatis 4,062 patients (26.35%), syphilis 1,557 patients (10.10%), and disease chancre 241 (1.56%). Figure 1.1 shows that the rate of sexually transmitted disease in Thailand increased continuously during the closing of the Office of Public Health STD Clinic and the Provincial Office of Disease Prevention and Control during the Year 2001 – 2004. It also shows that the morbidity rate increased from 22.65 per hundred thousand in 2001 to 29.29 per hundred thousand population in 2004 and dropped to 26.00 cases per hundred thousand populations in 2006 as shown in Figure 1.1.



Figure 1.1 The Rate of Sexually Transmitted Disease per Hundred Thousand Populations in Thailand in the Year 1995-2006Source: Bureau of Epidemiology, 2008.

When classified by disease, it was found that: gonorrhea cases increased from 23.66 cases per hundred thousand populations in 2004 to 29.66 in 2006 but the rate of the disease is constant from 2001 as is the morbidity. Syphilis remained stable in the year 2005 and 2006 morbidity rate was 10.1 per hundred thousand populations as shown in figure 1.2.



Figure 1.2 The Rate of Sexually Transmitted Disease per Hundred Thousand Populations Classified by Type of Disease in the Year 2001-2006Source: Bureau of Epidemiology, 2008.

When classified by age group, the rise is seen in the 15 to 24 age group, while other groups have decreased. The 15-24 age group increased from 33.26 cases per hundred thousand population in 2002 to 52.14 per hundred thousand population in the year 2006 as shown in figure 1.3.

4



Figure 1.3 The Morbidity Rates Of Sexually Transmitted Disease per Hundred Thousand Populations by Age Group in Year 2002 - 2006Source: Bureau of Epidemiology, 2008.

From the survey of Bureau of Epidemiology (2008) found that the top five provinces with high morbidity were: Phuket (294.11 per 100,000), Lampang (158.39 per 100,000), Chanthaburi (116.31 per 100,000), Amnatcharoen (89.90 per 100,000) and Pracheenburi (76.15 per 100,000 (Bureau of Epidemioloy office, 2008). Phuket is a popular province where tourists like to travel. The main income comes from Phuket's tourism industry that is increasing every year. In the first three months of 2006, Phuket had 1,074,558 tourists including both Thais and foreigners. The income from the tourism industry is around 18,454.34 million baht. High tourist numbers encourage higher numbers of professional commercial sex workers in both the direct and indirect spheres. A survey in 2005, found that female commercial sex workers migrated from other provinces such as Chiang Rai (21.5 percent), Nakhon Ratchasima (6.6 percent), Udon Thani (6.4 percent), Khon Kaen (4.9 percent), and Bangkok (3.38 percent) which effects in areas such as the service problems of foreign workers and health problems as shown in figure 1.4.



Figure 1.4 Causal Framework Linking Migration, Health and Socio-Economic Status **Source:** Kahn, 2003.

Phuket Provincial Health Office (2006: 6) began monitoring the prevalence of HIV infections among female commercial sex workers in both direct and hidden workplaces in 1989 to follow the trends of HIV infection. After surveillance began, it found that the prevalence of infection among female commercial sex workers in both direct and hidden workplaces was increasing rapidly. The women in the group matching the prevalence of infection increased from 3 percent in 1989 to 40.1 percent in 1993. The group of female latency increased rapidly from 0 percent in 1989 to 11.9 per cent 1997. Afterwards the potential infection in the two groups decreased rapidly. Commercial sex workers who are in direct service decreased continuously. The prevalence of infection in the year 2005 is 11.6 percent of the likely prevalence among hidden women who work as commercial sex workers after 1998 have tended to decrease slowly. The prevalence of infection in 2005 was 2.7 percent in conjunction with the survey of facilities in Phuket during January and February 2005, there were 8 facilities, 340 commercial sex workers and 735 places of hidden sex workers and 1969 hidden women who work as commercial sex workers.

Report of sexually transmitted infections in Phuket between the year of 2003-2005 by AIDS Tuberculosis and Sexually Transmitted Diseases Control Department, Ministry of Health found that patients with gonorrhea increased from 51 in 2003 to 145 in 2004 and 303 in 2005. The epidemic situation is likely higher due to unsafe sexual behaviors and the lack of knowledge on how to protect themselves of these transient women that do not have the opportunity to access medical services. In addition, STD clinics and Provincial Public Health Offices which can aid in preventing and controlling diseases are closing down. Although there is treatment available for STIs in Service Center replacements at hospitals, they do not provide the time nor the right channel for women commercial sex workers. In addition, authorities are required to have different skills and services to deal with this group in general. This is why the spread of HIV infection and sexually transmitted infections is rising among female commercial sex workers.

In addition, the Behavior Surveillance Survey (BSS) of female commercial sex workers by using a questionnaire of 592 persons in 2004 compared with 662 people in 2005. The BBS in 2005 found that female commercial sex workers had an average age of 29, most had only a primary education (50 percent), 21.1 percent were a patient with an STDs treated in the past 12 months and 36.8 percent continue to serve with the symptoms of STIs and condom use while working declined from 76.1 percent in 2004 to 71.4 percent in 2005.

Based on information above, the BBS found some weaknesses in operations to prevent and control the spread of HIV infection. The people involved find it difficult to strictly follow HIV prevention recommendations. To have healthy sexual behaviors that are appropriate in order to avoid problems and lessen severity of problems. However, this phenomenon shows that HIV infection may be situational and for reasons dealing with the behavior of a sexual relationship. That makes the practice inappropriate. Risk behaviors for transmission to persons not yet infected and from pregnancy are known to cause problems in terms of illness, suffering and impact on family, socially and economically.

From the above data, the problem of HIV infection in women is still a problem of significance in Phuket. As the forum of places for sex change, through spas, karaoke, restaurants, etc., the problems HIV prevalence continues to trend higher rather than lower. Therefore, the surveillance of behavioral risk for HIV infection is an important link in planning strategies to reduce infection. In addition, behavioral information suggests ways to prevent the spread of HIV infection and sexually transmitted diseases among sex workers and to develop multiple strategies to understand the female sex worker in condom usage, avoiding the use of drugs, etc. Sexually transmitted diseases are a particularly important public health problem that impacts the economy, society and the health of people both directly and indirectly. As the rate of STDs in patients increases, so do these knock on effects.

Therefore, the study of surveillance data with sexual risk behaviors associated with sexual health and epidemiological characteristics of sexually transmitted infection and HIV are used to evaluate potential changes in the epidemic. Analysis of risk factors for sexually transmitted infections and HIV leads to better planning for prevention and control of sexually transmitted infections and HIV infection in such a performance.

1.2 Objectives of the study

1) To study the general population, sexual risk behaviors, knowledge and awareness about AIDS among female commercial sex workers.

2) To study the health status and sexual health of women selling sexual services.

3) To analyze the risk factors of HIV infection and sexually transmitted diseases of female commercial sex workers.

1.3 Scope of the study

1) Scope of the study population were female commercial sex workers who worked in massage parlors in Phuket province and every employee who worked in a nightclub or karaoke bar in restaurants that could be sampled during March and April 2007 and data taken from a behavioral survey in June 2007.

2) The range of sexually transmitted disease being tracked for at that time were limited to HIV, Syphilis, Chlamydia Trachomatis (CT) and Neisseria Gonorrhea (NG) infections only.

1.4 Expected Benefits

1) To know the health status and sexual health of women selling sexual services in Phuket.

2) To know the at risk sexual behaviors as linked to HIV and other sexually transmitted infections of female commercial sex workers.

3) As a guide to government agencies and private sector agencies who are responsible for matters relating to public health and taking data in planning of prevention and control of sexually transmitted infections and HIV infection among female commercial sex workers.

CHAPTER 2

LITERATURE REVIEW

Researcher proposed concept/theory and studies related to sexual behavioral study on HIV infection and AIDS and sexually transmitted infection (STI) of female sex workers in Phuket province in the following aspects:

- 2.1 AIDS and Sexually transmitted infection: STI
- 2.2 Effects of HIV infection
- 2.3 Situation of AIDS
- 2.4 Female Sexual Health
- 2.5 Health Status Evaluation
- 2.6 Related Study
- 2.7 Summary of Literature Review

2.1 AIDS and Sexual Transmitted Infection: STI

Acquired Immuno Deficiency Syndrome (AIDS), a disease caused by the Human Immunodeficiency Virus (HIV) that destroys leukocytes, the primary source for creating immune system. Thus, those infected become susceptible to diseases such as tuberculosis, pneumonia, velum, encephalitis or certain types of cancer at far greater rate than normal people. The symptoms will also be highly severe and result in rapid death. HIV infection is most commonly found in blood cells, lymph and tissues and also found, though less common, in seminal fluids. It is least likely to be found in saliva, phlegm and breast milk and rarely to never found in sweat, urine and excrements. Despite HIV mixing with released liquid waste, the disease can only be transmitted via blood and seminal fluids. There are 3 ways to contact AIDS: sexual intercourse, blood transmission, and from mother to child. AIDS is divided into 3 stages:

1) Asymptomatic HIV infection is a stage where HIV antibodies are detected in the bloodstream but no apparent symptoms of opportunistic infection. This stage will last up to 10 years in which the infected person is free from any symptoms but can become a carrier of the disease.

2) Symptomatic HIV infection is the stage where HIV antibodies are detected in the bloodstream with apparent symptoms of opportunistic infection.

3) HIV to AIDS is the stage where HIV antibodies are detected in the bloodstream. Detection of one of the 27 diseases or symptoms indicating infection of the body's immune system or detection of less than 200 cell/m of CD4 twice though possibly without infection of one of the 27 diseases.

Sexually Transmitted Infections (STIs) are illnesses transmitted from one person to another by means of sexual intercourse. Originally these infections are referred to as 'sexually transmitted disease' which includes gonorrhea, chancre, syphilis, etc. However, many other infections have been discovered to be capable of being transmitted sexually. Thus, these infections are referred to as 'Sexually transmitted infection' which includes Hepatitis B and Acquired Immuno Deficiency Syndrome (AIDS), to name a few.

Sexually Transmitted Infections can be divided several ways depending on patient treatment. They can be divided by types of infection that cause the disease: bacteria, virus, fungus, and parasite; or divided by symptoms: lesions in genitalia, abnormality of leucorrhea, fever and pelvic pain.

Sexually transmitted infections occur mainly by engaging in sexual intercourse with an infected person. However, some sexually transmitted infections can be transmitted by other means. For example AIDS, which apart from being transmitted via sexual intercourse, can be transmitted by blood transmission. Blood transmission often occurs with intravenous drug users by sharing the same syringe to inject drugs into their bloodstream. It is also transmittable by mother to fetus. People who live with infectors but do not engage in sexual intercourse or cross contaminate blood will not become infected.

There might not be any apparent abnormality in patients with a sexually transmitted infection. However, there might be signs of abnormality of leucorrhea, lesions on the genitalia, urinary frequency, or abnormalities in other bodily systems depending on the types of infection and current phase of the sexually transmitted infection. Therefore, detection of any abnormalities should be by a doctor's diagnosis as soon as possible in order to receive the appropriate diagnosis and treatment. Patients should avoid sexual intercourse and strictly follow the doctor's advice, as well as regularly and continuously doing examinations. Today, there are several sexually transmitted infection treatments, principally to exterminate all the infections in the body, to reduce pain, to prevent complications, to prevent the return of the disease and to prevent spreading to other people. Medicine used for treatment includes pills, injections, and vaginal suppositories. Stages of treatment vary according to the types and stages of disease. Pill treatment therefore depends on the doctor's discretion. Buying pills will not help cure the disease and are susceptible to complications arising from the disease or from the pills purchased. However, there are sexually transmitted infections that can't be fully cured, such as AIDS, which require sustained treatment to prevent any complications or intensifying of the infections and preventing the transmission to other people.

Due to the various side effects as well as treatment difficulties or inability to fully cure the disease, it is important to prevent sexually transmitted infections. Doctors and medical practitioners should provide knowledge on the matter to their patients and the wider public. In turn, people should avoid sexual intercourse with others who aren't their husbands or wives. If in any unavoidable circumstances, it is best to use barrier devices such as condoms. If any signs of abnormality are detected, it is best to seek a doctor's advice.

2.1.1 Epidemiology of Sexually Transmitted Disease

Epidemiology is the study of the spread of disease or the indicators influencing disease infection in humans. Sexually transmitted disease is the disease that is easily and quickly contracted by sexual promiscuity. But, in some cases, patients may accidentally contact this disease, for example, blood transfusion during which the virus gets into a wound or eyes. Sexual promiscuity diseases are infectious diseases, resulting from the reaction among disease agent, host and environment. The process of such disease infection contains an element called chain of infection: 1) There are several agents that are the cause of the disease, comprising

(1) bacterial infections such as Neisseria Gonorrhea, Chlamydia, Trachomatis, Hemophilus Ducreyi, Treponema Pallidum and the like.

(2) viral infections such as Herpes Simplex Virus, Hepatitis B Virus, Papilloma Virus, Human T-Cell, Leukemia Virus and the like.

(3) Protozoas such as Trichomonas Vaginalis, Entamoeba Histolytica and the like.

(4) Fungi such as Candida Albicans and the like.

2) Transmission sources of sexually transmitted infection in humans can be divided into:

(1) persons that are symptomatic with a sexually transmitted disease.

(2) persons that are asymptomatic carriers of the disease, that is, those who have been infected and remain infectious without any visible symptoms. This could be due to the infection being in an incubation or recovery phase, or some patients have chronic conditions without ever showing symptoms.

3) Some STI's can be transmitted to the fetus or the child during birth. But most transmissions are the result of sexual relations where one or both partners engages with multiple sex partners. Transmission can occur in several ways: oral, genitalia, anal, and placenta.

4) Persons who are at risk of contracting an STI are infants in the womb of mothers that are infected, and those who are sexually promiscuous. Sexually promiscuity could be due to many reasons: persons who like having sex with commercial sex workers; those that engage in alcohol or drug consumptions that can impair judgment; having family problems such as a divorce; are migrant laborers that live separately from their spouses temporarily; are tourists; work in the service section of the hotel; are homosexual; are involved in occupations such as soldiers or unskilled labors that encourage promiscuity. These persons seek sexual relaxation with commercial sex workers and other sexually promiscuous persons, thereby having a high risk of disease transmission.

5) The study of epidemiology helps understand the mechanisms that are a direct factor of disease transmission. In addition, indirect factors such as the environment are also involved in disease transmission. That is to say, the factors that affect transmission and the spread of STIs in Thailand are as follows:

(1) Demographic factors

Population increases, especially in the sexually active age groups, the increasing density of population and migration from the country to city, leads to urban overpopulation problems and slums, deteriorating health, increasing emotional pressures especially in single persons and separated couples who seek relaxation with commercial sex workers.

(2) Socio-economic factors

After WW II, the decline of the economy led a number of poor rural women to become commercial sex workers who worked in entertainment places and offered sexual services. They hardly needed to invest financially, but their income was high. They had a chance to dress beautifully and to spend a lot of money luxuriously. Later, when the country developed economically, cities became urbanized and industrialized and people had more income because laborers moved to work in the industrial sector. An increase of sexual service places and commercial sex workers resulted. Such increases are more diversified than in previous patterns. In addition to the increase in domestic and international tourism, army force mobility and labor mobility lead to an increase in the population who are at risk to becoming infected with syphilis and have sexually transmitted infections.

(3) Cultural and behavioral factors

As society develops more, western culture influences Thai people more as well. Some values change, especially values surrounding sex. Society accepts sexual promiscuity of men and women more as well as an increased openness to homosexuality, partner exchange, polygamy and sexual experiment of adolescents leading to problems of illegal marriage and criminal abortion. There are also other factors leading people to being more sexually promiscuous including drinking alcohol, being addicted to some drugs and wandering for entertainments.

(4) Medical factors

Medical factors are those that influence patients directly. There is an inadequacy of treatment, non-detection of symptoms in some phases of the disease and antibiotic drug resistance infections. There are medical restrictions on treatment and lead patients not to pay attention to serious treatment or know that they are indeed sick. As a result, there are more and more patients. Besides, some patients like selfprescribing medication at the chemist's. But most of them are still sick after taking those medications. Self-treatment rather than physician proscribed treatment is a major cause of drug resistance.

According to the study of epidemiology and factors contributing to the disease infection and spread of sexually promiscuous diseases above, it can be concluded in terms of a framework showing the relationship among various factors leading to the infection of sexually promiscuous diseases.

(5) Disease infection risk behaviors

In Epidemiology, there are three factors contributing to disease infection: host, agent and environment. If these three factors are balanced, then disease does not result. If not, sickness results. The unbalance results from human behaviors that lead humans to at risk conditions to contract disease or infection. These are actions are differing behaviors, such as having drugs that are injected into blood vessels by using the same needles, which leads to risk of having HIV infection. Risk behaviors can be linked to many diseases such as smoking which is the risk behavior for having emphysema, lung cancer and heart disease and the like. However, this does not mean everybody having such behaviors must have these diseases. It all depends on time, place, agent and environment of those who have at risk behaviors. The study of risk behaviors for fixing them does try to show the benefits and drawbacks of risk behaviors toward health and suggest the behaviors for preventing the diseases by giving knowledge or changing behaviors of each person or motivating thru fear of contracting those diseases. This leads to a change of behavior of people (Orathai Ruayarjin, 1991: 116) which behaviorologists conclude the concept into three major groups as follows:

Concept 1 believes that behaviors result from self decision. The causes of behaviors or factors influencing behaviors are seen through intra individual causality assumption such as knowledge, attitudes, belief, values, motivation and intention to have those behaviors

Concept 2 believes that the causes of behaviors come from extra individual causality assumption. The behaviorologists of this concept are interested in studying factors of environment, structural systems of society, economy and education, population elements, and geographical and cultural characteristics. This concept applies demographic, sociological, psychological and economic theories to use.

Concept 3 believes the causes of behaviors come from multiple causality assumptions as well as intra individual causality assumption and extra individual causality assumption (Boomyeam Trakoolwong, 1985: 70-71).

There are several concepts that are in accordance with the Concept 3. For example, the concepts of Green et al. (Green et al., 1980: 245) state that human behavior comes from several factors. Analysis for factors contributing to those behaviors leads to the ability to plan and determine how to change behaviors effectively. Or, the concept framework called PRECEDE FRAMEWORK (Predisposing Reinforcing Enabling Cause in Educational Diagnosis and Evaluation) determines major, supporting complementary factors for processing behaviors. Predisposing factors are those that are inside people. They cause change that comprise knowledge, attitudes, belief, value and learning. Enabling factors are those that contain skills and resources necessary for the behavior occurrences. Such resources like having health facilities and having opportunities to develop skills have an effect on health. Reinforcing factors are those that show what behaviors of involved people such as father, mother, friends, teachers and the like. The occurrences of these behaviors always involve these three factors.

2.1.2 Ways to Prevent HIV Infection

HIV, as mentioned above, damages the immunity of people and puts them at risk to other opportunistic infections. HIV viral load is highest in blood, lymphatic fluid, semen, vaginal secretions in HIV infected people. It is found at much lower levels in saliva, breast milk and urine. However, although HIV is found in all bodily fluids, transmission is mostly done through blood, lymphatic fluid, semen and vaginal secretions. It can be concluded that HIV is mostly contracted from sexual contact with HIV infected people without using some form of barrier. This includes the use of injecting needles that have HIV infected blood (addicted to drugs that require direct injection into the bloodstream) or the receiver of HIV infected blood (donation blood). Other contacts are from mothers to babies during pregnancy or caesarean operation, mother's milk that is infected with HIV, cut by HIV contaminated medical equipment, and ear piercings or tattooing by HIV contaminated equipment. Hence, we can prevent AIDS by safe sexual intercourse with condoms or HIV infected persons not having sex with a non-infected partner, avoid sharing needles especially among drug addicts, be careful to donate only non HIV infected blood, prevent and control disease infection through proper sterilization of equipment, the removal of contamination and waste and maintaining a preventive environment (Grassanai Wangrangsimagool, Jarunya Hoonsrisagool, Duangporn Kerdphol, Neils Herup et al., 1998). Good self practice of preventing HIV infection is good sexual health behavior, the best is to use a condom, but people need to have the correct knowledge and understanding of condom usage for the sake of effectiveness in preventing HIV infection.

2.2 Effects of HIV Infection

2.2.1 Effects on individuals

2.2.1.1 Body

When any individual receives HIV into the body, their health is imbalanced according to the intensity of the disease. The symptoms are no-symptoms until the appearance of symptoms. When asymptomatic, if they can take good care of their health or have no more risk behaviors, no symptom is found apart from the detection of antibodies or antigens against HIV inside the body. The symptomatic phase has signs that make patients suffer, starting from the swelling of lymphatic fluid glands around body, loss of appetite, tiredness, weight loss, insomnia, chronic diarrhea, chronic cough, and white tongue.

Some patients are chronically tired and have shortness of breath as the virus spreads. The ability to help themselves is decreased. In late stages, symptoms can include the body deteriorating through further complications setting in including; dramatic weight loss, and signs of skin and fungal infections. They are then in the last phase of HIV, needing to depend on close individuals, relatives and doctors and nurses to watch and take care and treat their complications. The patients in last phase usually pass away shortly afterwards.

2.2.1.2 Mind

Besides a physical impact, some patients experience the spread of HIV into the nervous system, resulting in mental deterioration such as forgetfulness, mood swings, depression and mental regression. Patients are affected emotionally as well, experiencing sadness, depression, fear, uncertainty, confusion, frustration, isolation, self anger, blaming others and society for their condition. When the symptoms of AIDS are more serious, some think of committing suicide.

It may be said that HIV infection is the threat, making withdrawals to the health of body by limiting the ability of the body to function. As health decreases or changes, patients cannot perform activities as usual, get sick, have body suffering, affect mind, emotional, depression, and worry, which intensifies to the point that they want to commit suicide.

2.2.2 Effects on the Family

Family members have to face intense reactions by covering up, so that others don't know that a member is sick. Finally, they have to face the death of the patient and worry that members will get infected with HIV. When patient cannot help themselves the burden passes on to the family, including treatment expenses. Some families lack the compassion or resources to take care of a patient and ignore taking care of them. Patients then turn to networks and clubs for HIV people for care and support.

2.2.3 Effects on the Economy

The age groups mostly likely to contract HIV are also the groups that have the biggest impact on the economy and security of the nation. The government must increasingly cover the rising expense of health care, medication and hospices to care for patients, as well as money spent on public education and awareness campaigns and to research vaccines and other treatments.

2.3 HIV/AIDS Situation

Report on global HIV / AIDS updated (December 2003) by UNAIDS / WHO found that the number of infected people and patients around the world was

approximately 34-46 million people, 31-43 million adults and 2-3 million children under the age of 15. Worldwide fifty percent of newly infected HIV young women are in the 15-24 age group. The rate of HIV infections worldwide average per day at over 6000 people in Sub-Saharan Africa with infection rates of HIV among adolescent girls at 75 per cent (http://www.newlifeforthai.com/html/nlft_ situation.htm, 2004). UNAIDS estimates that by the end of 2004, a total of 39.4 million people (35.9-44.3 million range) will be infected worldwide. The highest concentrations will be in North Africa with 26.0 million people, followed by Asia with 8.2 million, South America with 2.1 million, Europe with 2 million and North America with 1 million. In the year B.E. 2004, new infections around the world will be 4.9 million people (range. 4.3 to 6.4 million people) and 3.1 million (range 2.8-3.5 million) people will have died worldwide.

The HIV/AIDS situation in Thailand began with the first report of an AIDS patient in Thailand in November, 1984 by epidemiologists with the Ministry of Public Health. Subsequently, the infection of HIV began spreading among homosexual men and later to a serious outbreak among injection drug users. The spread continued to female commercial sex workers, promiscuous men, women in general and infants infected from their mothers. The HIV/AIDS situation as of 30 March 2004 showed that the number of infected people who have symptoms, and patients with AIDS was 322,565 cases and 74,356 deceased. The AIDS morbidity and mortality trend went down from the early years. Most commonly found cases were in the 25-29 age group - about 26.2 percent, followed by 30-34 age group - 25.6 percent, and 35-39 age group with 16 percent, this represents the main reproductive age as well as the active workforce engaged in manual or physical labor, general hire laborers, and drivers at 46.7 per cent, and agricultural workers at 20.9 per cent. The major causes of risk behavior for HIV infection are sexual intercourse which was found in 83.7 percent of infected homosexuals, infected heterosexual men at 58.4 percent, infected heterosexual women at 23.2 percent and of drug addicts, those infected from mothers and the blood transfusion cases respectively (Sanchai Chasombat and Cheewanant Lertphiriyasuwat, 2004). From the latest report of epidemiologists in November 30, 2006 found that the number of AIDS patients and those infected with HIV who have symptoms at 307,114 cases with 85,459 deceased.

The mortality trends in HIV / AIDS was reduced from before, (Year 1995-2005). AIDS patients were found most commonly in the age group of 30-34 years- 25.84 percent, 25-29 years old-24.26 percent, 35-39 years old 17.31 percent followed by children aged 0 -14 years -4.18 percent respectively (Bureau of Epidemiology, 2005). During the past three years, it was discovered that HIV morbidity rates were 2:1 higher among female adolescents than males. We must, therefore, study the attitudes of male adolescents toward sexual behavior, or how the concepts of sexual values for teenagers has changed from the past. Adolescents who are 15-19 years old and 20-24 years old tended to have higher risk factors for having sex in the year 1996-97 with a resulting higher infection rate. But trends have declined in recent years in both age groups. (Progress Update on the Global Response to the AIDS Epidemiz, 2004).

2.4 Sexual Health of Women

Women's sexual health is often found to be more problematic than men's due to the overlap of sexual background, the rights of women in sex, and traditions that woman should not to talk about sex. The female adolescents at present often find health problems occur continuously with sex. In Thailand, it was found that adolescents face many sexual health problems for example:

1) Lack of accurate information and quality health services. There is an attitude that the school-aged teens should pay high attention to their studies rather than showing an interest in sex. There is a lack of sexual health services and especially providing information on sex education for adolescents accurately to both men and women. This encourages teenagers to get sex information from sources that could create misunderstandings of the subject.

2) Facing the sexual health of adolescent girls. By encouraging teenage boys to have more sexual freedom than girls a situation has been created where a large number of teenage girls are facing sexual exploitation and also unsafe abortions and sexually transmitted diseases.

3) Maternal and child health problems when the child is small. Studies in the world have found that having children while under the age of 20 years will put

both mother and child at risk of death because mothers at this age have not fully grown up physically.

4) Pregnancy when unprepared. Teenagers engage in sexual behavior before marriage, but are not provided birth control. It is likely that teenagers will face pregnancy when they're not ready which may result in serious problems. Their future will turn out to be a disastrous one, including family disappointment and regret. Unwanted pregnancy among female adolescents may cause the loss of educational opportunities, affect job prospects, a disgrace to their parents and relatives and they may have to moved from their family to live somewhere else.

5) Unsafe abortion. Abortion in Thailand poses a serious health risk but it is also a common problem. The demand for abortion services, even illegal ones are high. Because qualified doctors are legally prevented from rendering abortions services, the demand for illegal services provided by unskilled practitioners is common. For this reason, abortions in Thailand are of poor quality, unsafe, and costly. Besides the possible mental and physical traumas these unsafe abortions risk the chance of death for the woman.

6) Sexually transmitted diseases. AIDS patients and patients with STIs continue to occur among adolescents. This reflects the lack of accurate information and health services particularly for the young and points out potential problems for the future.

7) Sexual violence. Sexual violence is a problem that is evident in society. Teenage girls face physical and mental problems due to the threat of sexual exploitation, sexual assault and enticement to prostitution. The violation of the rights of homosexuals among male or female adolescents also affects their sexual health. Discrimination exists against female teenagers such as limited educational opportunities, work and so on.

Problems that occur among these teenage girls reflect problems that will occur in the future. HIV infection among the adults is the result of sexual health problems from the adolescent's time. Women's health situation is affected by social values to which a person has a good or bad sexual health experience. Thai social values considered men's sexual experiences as important whether before or after the marriage, while women should not have sexual experience before marriage. After the marriage she must have only one husband and sleep only with her husband, it is regarded as an important function of the wife's duty. While condoms are the only tools that help reduce the sexual risk for both disease and pregnancy, they are not commonly used with married couples. This results in women mostly getting sexually transmitted diseases from their husbands (Natthaya Boonpakdee, 2004). Women die from cancer of the reproductive organs 6.5 times more than men (Natthaya Boonpakdee, 2004). Forty-five out of every 100 pregnancies are unplanned and 16 percent end in abortion, as compared to planned pregnancies which have only a 1 percent abortion rate (Natthaya Boonpakdee, 2004). It is already known that abortion is hazardous to women's health due to the risk of blood infection and punctured uterus. (Natthaya Boonpakdee, 2004) Significant bleeding as a result of an abortion remains a leading cause of death in pregnant women since 1997 (Natthaya Boonpakdee, 2004) There is report that 4 percent of pregnant women have been physically assualted by their partner while pregnant. One in four women had been punched or kicked on the stomach by the fathers (Natthaya Boonpakdee, 2004). Reports in related research also shows that people lacked information on sexual health and reproductive health, such as the pros and cons of hormone menopause, HPV infection causing cervical cancer, etc. (Natthaya Boonpakdee, 2004).

2.4.1 Sexual Rights

Sexual rights may be divided into 3 components;

1) Freedom in decision making and responsibility for every sexual matter, including protection and promotion of one's own reproductive and sexual health.

2) Freedom against obstruction, extortion, violence in sex life and decision making in every sexual matter.

3) Involved in a responsible sexual relationship, respecting each other, consent, desire and equal expectation.

Furthermore, there is the WHO declaration of rights (PAHO WHO, 2000) as follows:

1) The right to sexual freedom – able to be fully expressed in relation to sexual secret

2) The right to sexual autonomy, sexual integrity, and safety of the sexual body – able to freely make decisions in relation to sex life within the personal and social moral for safety of the sexual body due to sexual matters such as sexual torture, sexual violence, and mutilation.

3) The right to sexual privacy for behavior and decision in relation sexual intimacy, as long as not violating sexual right of others.

4) The right to sexual equity – being freed from all types of segregation, whether it is sexual, sexual characteristics, sexual orientation, age, race, social status, religion, physical and mental impairment.

5) The right to sexual pleasure in physical, mental, and spiritual aspects.

6) The right to emotional sexual expression, from satisfaction and practice, whether it is through communication, touch, emotional expression, and love expression.

7) The right to sexually associate freely, from marriage to nonmarriage, divorce, and sexual relationship creation in the desired form.

8) The right to make free and responsible reproductive choices, from having children or no children, age difference between one child to the other, access to birth control.

9) The right to sexual information based upon scientific inquiry by referring to scientific evidence with appropriate manner without delay.

10) The right to comprehensive sexuality education.

11) The right to sexual health care.

2.4.2 Sexual Health Model

Robinson, Bockting Rosser and Miner (2002) have improved the sexual health model to be able to access sexual matter which will be used in preventing the spread of HIV. This model begins from combing experience from the test and theoretical data from 3 sources;

1) Way to widely access sex education to increase understanding in sexual expression of each person, and help analyze viewpoint in relation to sexual matters of general person. 2) Review recommended literature relating to specific culture, relationship, tradition of sexual health from experience received from community.

3) Quantitative and qualitative research relating to sexual attitude, practice and risk factors of each group, and decision making to have safe sex. These three components are applied to prevent the spread of HIV which can be divided into 10 issues;

(1) Talking about sex – in the perspective of sexual relationship negotiation for safe sex.

(2) Culture and sexual identity – influence of culture and sexual identity for safe sex options, such as maintaining virginity as long as possible, reduces the risk of contracting sexually transmitted diseases.

(3) Sexual anatomy and functioning –better understanding the sexual cycle leads to better negotiation skill by female which lead to safer sex. In certain case where male is having sex with male, sexual relationship is quite difficult which will affect condom usage.

(4) Sexual health care and safer sex – Genitalia inspection can reduce the chance of spreading HIV.

(5) Challenges: overcoming barriers to sexual health – risk and barriers are sexual violence, physical abuse, sexual abuse, prostitution, fatigue, and segregation, etc.

(6) Body image – physical beauty is important in sexual health which may be directly related to unsafe sexual relationship.

(7) Masturbation and fantasy – masturbation and fantasy also has an impact on the spread of HIV. Encouraging male partners to masturbate can reduce stress for female partners because it may reduce the desire for sexual intercourse.

(8) Positive sexuality – generally, sex education can lead to positive thinking, which is one of the important components for sexual health model.

(9) Intimacy and relationships – intimacy has an impact on decision making for safe sex. Opting to use condom with uncertain partner more often than own regular partner has an impact on the spread of HIV.

(10) Spirituality – spirituality does not only focus on religion but also taking into account issues of morality and virtue.

2.4.3 Sexual Health Behavior

Social refinement between genders in relation to sexuality is the determination of role and status, as well as important gender relationships; especially the belief that "female" is merely a sexual object for sexual desire of the "male". This leads to different special characteristics of male and female which also leads to different sexual behavior (Kunti Tophothai, 1997). Knowledge and experience in relation to sexual matters including sex education for women in Thai society are based on traditions taught to children. In the past women were taught to keep their virginity until the right time, or wait until marriage before having sex. These studies indicate the double standard in Thai society where the society accepts men to have sex before marriage but does not accept women having the same behavior. Social refinement has an impact on health problems especially sexual health which can be measured from satisfaction from sexual intercourse, the rate of sexual transmitted disease, as well as abortion. Sex education can get rid of fear, curiosity, and worry, as well as negative thoughts relating to sexual matters. There is a study that mentions sexual expression of male and female, certain women see physical contact as inappropriate which sometimes is quite difficult for sexual desire between men and women who are lovers. Most are unwilling to allow their male partner to do as he desires just to maintain the relationship. Some women only allow their male partners to hold hands, but do not allow hugging or kissing because it is hard to stop from there. Some women think that if their parents know they are having sex, they will be forced to marry. Some women attempt to use other non-vaginal sexual activities with their partners in order to preserve their virginity for their future husband. This attempts to satisfy the demands of their partners so that the partners will not go out and have sex with other women or commercial sex workers, which would put them at risk for a sexually transmitted disease (Suchada Thaweesit, 2004). It is quite difficult for women to be cautious and maintain their own sexual health because men can express their desires more forcefully and be difficult to manage.

2.5 Evaluation of Health Status

Sadanant Piyakul (1999) uses Medical Outcomes Study 36: MOS item. (short form: SF-36) of Wu AW. et al to study the quality of life of HIV infected and AIDS

patients. Medical Outcomes Study 36: MOS item. short form: SF-36 of Wu A. et al. (1997) created and developed this equipment 1991. It has been used as a tool to evaluate the health condition of HIV infected and AIDS patients in many countries since 1992 – 2003. More than 33 chapters of MOS – SF 36 are translated and used in more than 14 languages including Thai. In addition, it is used as a secondary data collection tool used in clinics to identify the stages of the disease. The tool also strengthens and covers the health condition of people both physically and mentally. The result of this tool are shown in the score. The higher the score the better the quality of life. Jan A. et al (1999: 908) uses MOS – SF 36 to experiment on reliability and validity in France, Germany, Italy, England and the Netherland. It showed that reliability scores are similar (Approximately 0.7). Paton et al (2002: 456) studies the quality of life of AIDS patients in Singapore by using MOS – SF 36 and discovered that it can be used in many areas.

This study examines the condition of HIV patients who have to confront toleration of illness, snatched infection, weak health, depression, stress and treatment failure etc. By applying this tool, the purpose of the Medical Outcomes Study 36: MOS item. short form: SF-36 of Wu A. et al is to assess the health condition of commercial sex workers. The information is able to identify their physical and emotional health and ability to do activities in their daily lives. Medical Outcomes Study 36: MOS item. short form: SF-36 of Wu AW. et al was chosen to access the health condition in 10 Domains which are stated below.

1) Physical Functioning means the physical health condition which can be limited to do activities such as carrying heaving things, running or playing heavy sports, activities that are needed to use moderate power, moving tables, carrying baskets on the way back from market, walking up to the hill or crouching, walking for the distance between 2 electric posts, dressing up, taking shower or using the bathroom, eating by themselves.

2) Role Functioning means the general role due to the problem of physical sickness which can be an obstacles to work or cleaning house.

3) Body pain means the physical illness from the heath condition

4) Social Functioning means the health or emotional situation can be a limitation on participating in social activities such as visiting friends, relatives or going to participate activities in village or community.
5) Emotional means the feeling of stress, depression, live long desperation and happiness.

6) Energy / Fatigue means the energetic feeling that patients have enough power to do everything they want or exhausted, no power or chronically tired.

7) Cognitive Function means the feeling of difficulty to find reason or solve problem such as planning, making decision, learning new things, forgetting situations that just happen and no concentration to do activities

8) General Health Perception means strong health like others or weakness

9) Health distress means the anxiety of health and the feeling of desperation, depression and fear about health distress

10) Overall Quality of Life means how good or bad of the quality of life.

In addition, created Model from MOS – SF36. Summary Measures are stated below.

1) Physical Health Summary such as Physical Functioning, Role Functioning, Body Pain, Social Functioning and General Health Perception.

2) Mental Health Summary such as Emotional, Energy/Fatigue, Cognitive Function, Health Distress and Quality of Life.

2.6 Relevant Research

Most research is from overseas, which have found that condom usage is very important in preventing the spread of HIV due to its efficacy. It is the best way to prevent the spread of HIV. The followings are relevant factors for condom usage behavior;

1) Personal factor: this is an internal factor of each person. Generally people think about birth control, but very few think about using condoms to prevent sexually transmitted disease (Semaan, Lauby and Walls, 1997). Some males have no faith in condoms, or some lack skill in condom usage (Bedimo, Bennett, Kissinger and Clark, 1998).

Other researches show that there is a relationship between income and condom usage, especially female employees who earn very little, do not use condoms very often, and this group always have sex with at risk males (Kennedy, Skurnick, Wan, Quattrone, 1993). Other behaviors that do not encourage condom usage are alcohol and drug consumption, which makes users become less conscious of their own behaviors (Ehrenstein, Horton and Samet, 2004). There is a belief that condoms reduce the pleasure of sexual intercourse (Kline and VanLandingham, 1994). Females who use birth control pills will often not use condoms (Santelli, Kouzis, Hoover and Polacsek, 1996). Some may feel it is inconvenient to use condoms or only use them for birth control and not for preventing HIV (Frank, Poindexter, Cox and Bateman, 1995). There are also some positive and negative viewpoints that affect condom usage;

(1) Positive viewpoint; seeing condom usage as useful and being responsible for both society and their own family.

(2) Negative viewpoint; seeing condom usage as nonsense and not realizing the value of condom usage. Never want to change their own behavior.

2) Environmental factor: people who live in rural and urban areas have differing access to condoms and therefore different condom usage behaviors (Morrison and Lewis, 2001). People in developed and developing countries also have different condom usage behavior, i.e. different government policies and campaigns (Meechai Weerawaithaya, 2005). At the present, the spread of condom usage to infected people is quite limited. It is emphasized more with young people, and mostly relies on the intervention of medical personnel (Prudhomme, Msellati, Soville and Moatti, 2002).

3) Family factor: HIV infected person need the acceptance of their families and society. It is found that an HIV infected person is not willing to tell their partner due to the stigma (Bedimo, Bennett, Kissinger and Clark, 1998). Therefore, there is an impact on condom usage behavior because it is perceived that no condom usage is normal behavior while condom usage is considered to be a sign of risk (i.e. a person that must have multiple partners). Condoms will be used every time if the other partner is aware of the other partner's infection. Females tends to use condom with regular partner more often than females who have multiple partners (Santelli,

Kouzis, Hoover and Polacsek, 1996) despite having the lowest risk (Bureau of Epidemiology 2005). With those that have a lower education, the emphasis should not only be in reducing the risk but also to try to maintain the period of safe sex as long as possible (Dublin, Rosenberg and Goedert, 1992). Some infected couples who love each other very much tend to use condom regularly despite knowing that the other partner is infected (Bedimo, Bennett, Kissinger and Clark, 1998). Good family support can also help improve the condition of the infected person. In the past, not many Thai people use condoms but after the spread of HIV, more have turned to using condoms. In the 100% Condom Project, the research that was conducted on male clients and female commercial sex worker in Ayutthaya found that 93.6% of female commercial sex workers use condoms. The spread of sexually transmitted infection was reduced from 15.38% in 1993 to 9.12% in 1994. However, it is found that the number of female commercial sex workers who had a sexually transmitted infections and also contracted HIV increased from 9.03% in 1993 to 20.15% in 1994 (Nantha Sudkasaem, 1997). It is obvious that despite condom usage encouragement which can prevent the spread of HIV to some extent, we still cannot relaxed regarding the spread of HIV. If people no longer realize the risk of HIV infection through sexual intercourse or through prostitution, condom usage will be reduced which will quickly bring back the great epidemic.

For the research on female patients and their confrontation with AIDS, it is very important to understand the state of mind of female patients. Each female patient has different aspect of life which has lead to being infected with HIV. The study of quantitative research demonstrates that AIDS is totally different from other diseases. Besides being an incurable disease, it is seen as being a sinful disease. It represents dirtiness and immorality. HIV patients are seen as awful and immoral, and a danger to society. (Pimpawan Boonmongkol, Niporn Sanhajariya and Sansanee Ruengsorn, 1999) The stated meaning in society has more implication if AIDS patients have inferior status in society. Female patients confront more severe complications than male patients, if they are of lower status or authority in the family. The confrontation and reaction of female AIDS patients are complemented by emotion, thinking and behavior. These 3 factors are physiological related. First it starts as spontaneity. Patients have emotional reactions later on; they adjust their emotions by using their past experience to understand. Female HIV infected patients are panicked, frightened and scared because they know that the disease is abominable, incurable. They never imagined that they would be infected or have a chance to be infected. Women tend to fall back on religion to seek acceptance of their situation, using Buddhist concepts of Karma to explain their situation (Pimpawan Boonmongkol, Niporn Sanhajariya and Sansanee Ruengsorn, 1999). The acceptance of an inevitable situation is the Karmic thought of most housewives. After discovery, husbands and wives of infected families are advised by consultants to use condoms when they have sexual intercourse to protect the non-infected partner from receiving and spreading HIV. However, using condoms between husbands and wives is irregular and hard to manage. Many HIV infected partners face problems of adopting condom behavior. Moreover, after long period of infection, the effort to protect themselves and their partners is reduced. Though, they are still numbers of couples who continuously use condoms to prevent the spread of HIV. If doctors and nurses repeat this knowledge and pay attention to patients regularly, couples will have a better quality of sexual behavior. Although married, the authority of females to negotiate is limited. For instance, the research of Thaweethong Hongwiwat et al (1993) states that, "In some cases, husbands do not know that their wives are HIV infected. They use violence against women. Wives want to use condoms but husbands do not. Wives do not dare to inform their husbands that they are infected for fear of repercussions."

The study of Suchada Thaweesit and Sureeporn Phanphueng (2008) states that "HIV infected patients still maintain a normal sexual life even though they are infected." Even if accessibility of information on how to take care of their health is extensive, many patients do not use condoms every time they have sexual intercourse. Examples for this are: patients' partners are also HIV infected; or, their partners do not want to use condoms. Moreover, comparing between male and female patients, male patients state that condoms decrease their sexual pleasure while female patients never mention this reason. They say that their regular partners do not want to use a condom." This information shows that decision making on condom use depends more on males than females. Furthermore, the study of Krittiya Archavanichkul et al, 2008 (Kanya Apipornchaisukul and Dusita Phungsamran, 2008) states that, "Behavior of not using condoms, not only happens in HIV infected patients, but also in normal people." They explain that respondents listed a number of reasons for this: they were

confident in the safety of their partners; they did not prepare or cannot find a condom at that time; or, they did not want to use it because the condom decreases their sexual pleasure.

2.7 Summary of Literature Review

From the literature review, there are many factors that affect the health of both HIV and non HIV infected women. These factors include family, environment, individual understanding of their sexual health, perception of inequalities between men and women, which has high effect on sexual health relations. These sociocultural factors are taught from an early age, imparted by family and school. After they grow up, influence from society plays a more important role in setting standards about male domination over female, this leads to sex disparity in society. HIV infected patients have to take antivirus HIV medicine to maintain their health, improve immunity, prevent opportunist infections and decrease risk factors that will influence to their health. The examples of the risk factors are: avoiding sexual intercourse, using condoms and checking their health regularly. The capacities to reduce the risk of female HIV infected patients relates to many factors and influences.

Even though many researchers had studied both HIV and non HIV infected people, there is still a lack of pertinent data on HIV infected commercial sex workers. Therefore, researchers are interested in having more studies related to the sexual behavior of commercial sex workers in order to have a better understanding about the sexual health condition of these women. Furthermore, using quantitative research as a tool to collect extensive data can reflect many aspects of the emotional and sexual health and the sexual behavioral factors of women who are at risk of being HIV infected. All in all, this research can be used successfully by people who are working in supporting and preventing HIV infection.

2.8 Conceptual Framework

From the study of sexual behavior of HIV infection and other contagious sexual diseases of commercial sex workers in Phuket, a conceptual framework can be created that illustrates the relationship between many variables which lead to sexually transmitted infections. Please see figure 1.6.



Figure 2.1 Conceptual Framework

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research Method

This research uses Descriptive Qualitative Design using in-depth interviews, data from HIV surveillance and a survey of the health status of commercial sex workers. This data was obtained to better understand the situation and reality of this group of women.

3.2 Quantitative Method

1) Secondary Data are obtained from the surveillance of HIV infection and sexually transmitted disease from 2007, the 25th surveillance round in Phuket by the method of survey in the same population (Kleinbaum, Kupper and Morgenstern, 1982). This survey of the behavioral data was conducted during the months of June 2007 by investigating the behavior of female commercial sex workers who lived in Phuket province at least 1 month and they were all Thai citizens who could read and write Thai. Data was analyzed by selecting only the variables that were associated with HIV infection and sexually transmitted diseases based on the literature review, theories, concepts and related research. The data are provided by Phuket Provincial Health Office which include:

(1) Sentinel Sero-surveillance System from blood samples checking for HIV and syphilis.

(2) Data on sexually transmitted infections based on the results of urine tests for infection and Gonorrhea

(3) Data monitoring behaviors associated with HIV infection (Behavior Surveillance System: BSS)

2) **Primary Data** from the survey of the health status of female commercial sex workers in Phuket. The questionnaire was applied from a Health-Related Quality of Life survey SF-36 (Short form 36). Sampling units were the same units of Phuket Provincial Health Office conducted.

3.2.1 Data Collection for Quantitative Data

To collect data on surveillance behavior associated with HIV infection among female commercial sex workers in June, 2007 in-depth interviews were set up with potential informants volunteers as recommended by health officials with health data including a detailed description of the study. Objectives of the study were explained in order to obtain informed consent to participate. If the informants were willing to participate, researcher asked informants to sign a consent form of participation. An informant could withdraw from the study if they did not want to answer the questions.

3.2.2 Tools for Data Collection

Tools used to collect survey data on health status of female commercial sex workers in Phuket were applied SF-36 (Short form 36) that looks at the quality of life (Health-Related Quality of Life) including 36 questions that evaluate 8 health assessments;

- 1) Physical Function
- 2) Rol Limitation due to Physical Problems
- 3) Body Pain
- 4) General Health Perceptions
- 5) Energy / Vitality
- 6) Social Function
- 7) Role Limitation due to Emotional Problems
- 8) Mental Health

3.2.3 Sample Size

By using this formula,

n =
$$\underline{N Z_{\alpha}^2 \rho (1-\rho)}$$

d² (N-1) + Z_{\alpha}^2 \rho (1-\rho)

- n = Sample size
- N = Population size
- $Z_{\alpha}\,$ = the (1- $\alpha)$ 100 percentile point of the standard normal distribution
- ρ = Prevalence Type I Error
- d = Error Precision (P) of Estimation

 Table 3.1
 Population and sample size

| Type of CSWs | Population | Sample Size |
|---------------------------------|------------|-------------|
| Direct commercial sex workers | 430 | 244 |
| Indirect commercial sex workers | 4,269 | 392 |
| Total | 4,699 | 636 |

3.2.4 Variables and Measurements

Variables and Variable Measurements of the study are shown in Table 3.2 as follows;

Table 3.2 Variables and Variables Measurement of this study

| Variables | Description | Level of variables |
|--------------------|--------------------|--------------------|
| HIV Infection | 1 = yes, 0 = no | Nominal Scale |
| Syphilis Infection | 1 = yes, 0 = no | Nominal Scale |
| STI Episode | 1 = yes, 0 = no | Nominal Scale |
| Health Status | 1 = good, 0 = poor | Interval Scale |

| Continued) |
|------------|
| |

| Variables | Description | Level of variables |
|-----------------------|---------------------------------|--------------------|
| Age | 1 =< 19 years | Ordinal Scale |
| | 2 = 20 - 29 years | |
| | 3 = 30 - 39 years | |
| | 4 = 40 and above | |
| Education | 1 = No School | Ordinal Scale |
| | 2 = Primary Education | |
| | 3 = Secondary Education | |
| | 4 = Diploma/High Vocational | |
| | Certificate | |
| | 4 = Bachelor Or Higher | |
| Marital Status | 1 = single | Nominal Scale |
| | 2 = married | |
| | 3 = divorced/separated,/widowed | |
| Income | 1 = < 5,000 baht | Ordinal Scale |
| | 2 = 5,000 - 10,000 bath | |
| | 3 = 10.001 - 15,000 baht | |
| | 4 = 15,001 - 20,000 baht | |
| | 5 = > 20,001 baht | |
| Nationality | 1 = Thai | Nominal Scale |
| | 2 = Non-Thai | |
| Duration as CSW | 1 = Less Than 1 Year | Ordinal Scale |
| | 2 = More Than 1 Year | |
| Drug usage | 1 = yes, 0 = no | Nominal Scale |
| Having sex during | 1 = yes, 0 = no | Nominal Scale |
| venereal disea | | |
| Condom usage | 1 = yes, 0 = no | Nominal Scale |
| Sleeping with several | 1 = yes, 0 = no | Nominal Scale |
| ones | | |

Table 3.2 (Continued)

| Variables | Description | Level of variables | |
|-----------------------|--------------------|--------------------|--|
| HIV testing | 1 = yes, 0 = no | Nominal Scale | |
| Knowledge of HIV/AIDS | Low =1, High = 2 | Ordinal Scale | |

3.3 Qualitative Method

The target for this study were Thai female commercial sex workers who worked in massage parlors as well as service employees worked in nightclubs and karaoke bars in restaurants in Phuket.

3.3.1 Criteria for Selection of the Data

1) Women selling sexual services or employees that worked on site locations (massage parlor, restaurants, bars nightclubs and karaoke clubs) who presented themselves to the venereal disease health clinic, at the Phuket Provincial Public Health office.

2) Employees working in services, restaurants, bars nightclubs and karaoke

3) Ethnic Thais with the ability to speak, listen, read and write Thai

4) Illnesses, both physical and emotional (stress, anxiety, depression, etc) were not an obstacle to participating in the research

5) Voluntarily participated in this study by signing a letter of consent to have their data used in this study

3.3.2 Exclusion Criteria

1) The informant did not consent to using their data

2) The informant could not provide data by the end of the process

In this study, 15 informants were screened but only 10 completed the project. The 5 informants that were dropped because they were unable to provide all the information required, or were unable to complete in time. The 10 informants that

completed the study provided complete data that could answer the audit objectives and these findings, described a variety of new information, without recurrence.

3.3.3 Data Collection for Qualitative Data

For data collection, protection of the right to information provided by informants was an issue as most of this study was based on the interview technique (In-depth Interview). A permission letter to apply for research was sought from Director of Phuket and Patong Hospital, Phuket. After obtaining permission to collect information, the researcher met with those officials in charge of AIDS control and prevention. Phuket Provincial Public Health Office approved the recommendation to draw on their research. Application was made for research purposes and to indicate the nature of the interviews. Application for recording the duration of each interview and a place to interview that would be convenient and appropriate was requested, so that informants would feel comfortable to talk confidentially. The analysis of data and its publication for dissemination in recognized academic settings was agreed to after confidentiality of informants was assured, especially that no actual names would be used. Any evidence linking data to informants would be destroyed at the end of the study. During the interview, if informants did not want to answer a difficult question than the interview could be stopped by the informant. The researcher provided an opportunity to ask questions in a variety of ways with informants until satisfactory information was obtained.

3.3.4 Place for Data Collection

Patients of venereal disease clinics were asked to volunteer to be informants for the study after its objectives were explained. A private consultation room was provided to insure confidentiality with no walk thru traffic. Additional information was gather by the researcher in beer bars, night clubs and karaoke rooms in either a separate room or in a quiet corner that ensured the informant was comfortable to speak.

3.3.5 Procedures for Data Collection

Data collection the researchers divided into 2 steps: the process of preparation and the process of data collection as outlined below.

3.3.5.1 Preparing step

1) Basic information on the informant. The researchers requested the cooperation of officials of STD clinics who were responsible for treating this group. Recommendations for potential informants were provided as well as a treatment history and history of condom use. Officials were asked to recommend potential informants to the study and to inform them that it was a student research investigation. Permission was sought to discuss questions regarding general information, housing and voluntary assessment to provide input with informants.

2) Relationships and trust were developed with officials because researchers had previously worked with those responsible for surveillance of HIV infections in this province. The researcher was familiar with the place so creating relationships and trust with officials was more easily achieved. Researchers already knew and applied their relationships to the people familiar with the data. The guidelines for asking permission of those interviewed mentioned the preliminary study and applied the experience of previous HIV related work. Principles in building relationships for the research began by explaining the information required, including a detailed description of the study and objectives. Informants who are informed and willing to participate have a strong motivation to share their life experiences and complete the study. Researchers asked informants to sign a consent form to participate. If the informant was not available to provide answers to or was reluctant to talk, they were not obliged to, but could not participate further. An informant could withdraw from the research at any point.

3) Check the location information. When informants agreed to provide information voluntarily, the researcher explained the origins and significance of this study. Consent to participate in research was documented by signing a consent form to join this research project, as shown in the Appendix. In order that the rights of the informants and the privacy of their information was protected by making appointments for interviews in appropriate settings as previously described.

3.3.5.2 Steps to Collect Data.

When the informant consented to participate in the research study their information was gathered with the informant's privacy in mind.

1) The appointment date. When selecting the time and place of interviews with informants, it was important that the place was not likely to be

disturbed by others, as the interviews were of a delicate nature. Informants felt more at ease to speak freely and comfortably when they knew there was little chance of being overheard. At times this required making an appointment to speak with informants in their place of employment in the evening. The informants would select an area where they would feel free to talk.

2) Interview data was collected using the interview to access the data. The researcher tried to talk to the informant in a natural way, based on the principle that every informant is a unique individual. Researchers attempted to listen to and perceive all that the informant was trying to relate of their experiences.

3) Climate of the interview -- Researchers talked with the informant in a manner that was friendly and used the nickname of the informant to put them at ease. This created a situation where the informant was comfortable with rather than being overly formal. Stress of the interview was reduced through location as well.

4) Recording of information at the time. The researcher explained the reason for recording the interview. The informant was recorded during each interview after being put at ease, and assurances used that identifying information would not be disclosed. Their name would not appear in any report or in this study. The researcher began by greeting the informant to establish a general relationship during the first few minutes. If all the data was collected and no further follow up was required, the researcher stated that there would be no further meetings and reiterated the confidentially of the informant would be kept. Should the informant have any additional questions, they could contact the researcher at any time. Time spent on the interview depended on the availability of informant. If the informant was at ease to talk, the interview could go on for 1-2 hours. If it became clear that the informant was losing concentration or growing tired, the researcher would terminate the conversation and schedule a follow up.

5) Planning the conversation. The interview process was free flowing. While there was a structure to the interview to ensure data was collected, conversations were allowed to wander if it provided a better insight into the emotional state of mind of the informant. This will help researchers better understand the context of the data. (1) In order to ensure that data was collected, researchers would summarize information provided by informants into categories. The researcher attempts to do a preliminary analysis of the data so that follow up questions could be asked in the interview. An attempt was made to have similar questions that could be used through all the interviews to ensure continuity of style and information (tracking). Questions were refined before the interview to avoid offending or threatening the informant. The interview also allowed informants to shape some of the questions as well as to vent their frustration about their situation. As well as an overt information gathering tool, researchers tried to observe non-verbal behaviors to asses emotional state of mind and to suggest areas of follow up.

(2) In the event that an informant became emotional and was unable to continue, the research may have to switch roles and become a consultant to provide information if possible. This would help maintain rapport and allow the conversation to continue.

(3) Interview questions would always be broad to begin with in order to encourage informants to speak at ease and to create a framework for what they were talking about. As the interview progressed, researchers would ask increasingly detailed questions to gain the data they required.

(4) Sometimes an informant would be uncomfortable to answer a question or would be unable to answer. Space was given for informants to collect their thoughts. Alternative questions were asked in order to check understanding. Informants were solicited to supply their own ideas of what was important. The researchers were flexible at all times during the interview to put informants at ease and to collect relevant data for the research.

(5) To end the interview, researchers thanked the informants for their time and information. It was restated the value of their contribution to the objectives of the study. Finally researchers would go over the confidentiality of the interview, with informants being assured that the only people knowing who provided the information were the researcher and the informant.

3.3.5.3 Equipment Used in Research

The main tool used in this study was the indepth interview following the basic guidelines:

1) The preparation of the research. It is important to take the time to review the theoretical principles of qualitative research before forming your research questions. Researchers should also be aware of the areas of sexual health education, negotiating gender and sexual behavior, technical content related to AIDS pathogenesis, the use of condoms, common psychological and social changes, as well as past research studies related to HIV infection. All this helps to guide data analysis.

2) Interview Guidelines – preparation of questions based on the research allows the researcher to remain focused during the interview. It is good to check proposed questions with experienced researchers that are familiar with the topic. Being familiar with the background of potential informants can also help shape questions, as can relying on primary care givers that interact with this clientele on a regular basis.

3) Voice. How questions are asked can be as important as the questions themselves. Researchers should use a tone that puts informants at ease. It is important to speak clearly so that interviews can be recorded. Recording also helps catch any details that the researcher may miss during the interview. Informants need to be reassured that recording is done for the benefit of the researcher and that it will not impact on the confidentiality of the information supplied.

4) The recording of field notes as soon as possible after the interview ensures that information is recorded while still fresh. Researchers should already be categorizing the information into data sets for future sets. Notes can also help shape questions for later interviews.

3.3.5.4 Check the Accuracy of the Information

To check the reliability of information the principles of triangulation were used. Questions were often restated in a number of different ways during an interview to check if responses were the same. By this means, the most pertinent facts could emerge and provide meaningful information to confirm the preliminary analysis of the research as correct or not. In addition, information was also checked through other sources without compromising the confidentiality of the informant.

Saturation monitoring.

For the research methodology used in this interview additional data could be brought in to aid in questions with informants. Informants' answers could be checked with data and an assessment of data saturation done.

3.4 Definition of Operations

Sexual health means having good healthy sex in all its dimensions (physical, psychological and socio-cultural), not just the absence of disease or disability. This is shown through the free and responsible expression of sexual capabilities that enrich individual and social life. For sexual health to be attained and maintained then the sexual rights of all people must be upheld.

Healthy sexual behavior refers to the ability of the individual to use accurate health information to practice safe, pleasurable sex. The individual is able to engage in sexual activities without threat or coercion and has the ability to express their sexuality without fear or condemnation.

Sexual risk behavior refers to actions that put the individual at risk. This includes: the use of drugs or alcohol that could impair judgment; sexual intercourse during symptoms of STI; unprotected sex; sex with multiple partners; and, the lack of regular testing for HIV or other STIs.

Knowledge and awareness about HIV/AIDS means understanding and awareness to prevent HIV infection.

Sexually transmitted infections (STIs) mean Syphilis, Chlamydia Trachomatis (CT) and Neisseria Gonorrhea (NG).

Commercial sex worker (CSWs) mean those that provide sexual services to multiple partners in exchange for economic compensation whether it is within a facility or not.

3.5 Data Analysis

3.5.1 Quantitative Data

1) Descriptive statistics to describe the general nature of information, such as frequency, percentage, mean (Mean) and standard deviation (S.D).

2) Inferential statistics to analyze the relationship between demographic factors were analyzed using Chi-square test. The factors taken into account were: sexual risk behavior; knowledge and awareness of HIV/AIDS, gonorrhea, and syphilis; and an analysis of the health status of women selling sex by types of premises. Statistical analysis using regression Binary Logistic Regression was used for an analysis of risk factors for HIV infection and sexually transmitted diseases of female commercial sex workers.

3.5.2 Qualitative Data

Data analysis for the study of this qualitative research methods was the collection of data from a variety of in-depth interviews with informants. Further information was gathered from primary care givers and a review of medical histories. This helped to organize the material for the structure and meaning of the data. In this regard, the researcher applied data analysis techniques of Colaizzi (1987):

Step 1: Use the Literature review to gain a comprehensive overview of information relating to the topic of research. Raw data should be stored in format that allows researchers to review (researchers taped all interviews). It is important not to lose the emotional content of the interviews as this can also provide insight in to the behaviors of the informant. The final document needs to reflect this information even if it can not be detail word for word.

Researchers may need to modify or clarify the language used by informants in order to meet the needs of the research, but must not lose the mood as expressed by the informants to the questions.

Step 2: Content analysis. It is necessary for the researcher to code the information collected from interviews in a way that can allow meaningful analysis to take place. This is done by creating a series of keywords for categories, for example family background, and then the data needs to be coded and entered. Coding in this way should be checked to see if other researchers would code the same way. This should be tested before engaging in interviews so that questions can be modified as necessary.

Step 3: Apply codes and inspect the accuracy and completeness of the information as the data is compiled into categories according to a preset code check.

Because the code allows multiple code meanings, data can be grouped in various ways to meet the needs of the research question.

Step 4: interpretation of the meaning or sentence. Transcribing must include the interpretation of symbols or hidden phenomenon with social structure and culture. In the interpretation and analysis of the recordings, researchers must be careful that the information expressed is that of the informants and not changed just to meet the conceptual framework of the researcher.

Step 5 Extract important information for research purposes to conclude the process as a concept induction (Analytical Induction) of qualitative research further.

CHAPTER 4

RESEARCH FINDINGS

Study results of sexual behavior and HIV infection as well as sexual disease infection of commercial sex workers in Phuket Province can be classified into 2 parts following:

- 4.1 Quantitative research findings
- 4.2 Qualitative research findings

4.1 Quantitative Research Findings

4.1.1 General Characteristics of the Sample

The average age of the commercial sex workers in the sample was 29 years old, with the largest group (46.8%) were between 20-29 years old, followed by 30-39 (38%), and less than 19 years old (5.7%). Most respondents had completed some level of education (97.8%) which broke down as: 55.0% secondary school, 36.3% primary school, 5.3% had a diploma from a technical college and 3.3% held a bachelor degree. Only 2.2% had not completed any level of education. 60.8% of sampling units were married, 34.6% were single and 4.6% were widow/divorced. Income ranges of sampling units were 5,000 – 10,000 baht per month: 30.0% earned, 26.7% earned: 10,000 – 15,000 baht and 17.1% earned: 15,000 – 20,000 baht. The sampling units were Thai 97.7% and only 2.3% were foreigners. There were 53.7% had worked as commercial sex workers for less than 1 year, while 46.3% had worked for more than 1 year. 57.8% of those sampled live in Phuket for less than 1 year, while 42.2% of those sampling units lived in Phuket for more than 1 year. The details of the study can be shown in Table 4.1.

| Socio-demographic Variables | Number | % |
|-------------------------------------|------------------------|------|
| Age | | |
| Less than 19 years | 39 | 5.7 |
| 20-29 years | 318 | 46.8 |
| 30-39 years | 258 | 38.0 |
| 40 and above | 64 | 9.4 |
| Min = 16 Max = 59 M | ean = 29.78 S.D. = 7.3 | 9 |
| Education | | |
| No schooling | 15 | 2.2 |
| Attended school | 658 | 97.8 |
| Highest Education | | |
| Primary | 239 | 36.3 |
| Secondary | 362 | 55.0 |
| Diploma/High Vocational Certificate | 35 | 5.3 |
| Bachelor or higher | 22 | 3.3 |
| Marriage Status | | |
| Single | 210 | 34.6 |
| Married | 369 | 60.8 |
| Divorced/separated/widowed | 28 | 4.6 |
| Income | | |
| Less than 5,000 THB | 79 | 12.3 |
| 5,000 – 10,000 THB | 193 | 30.0 |
| 10,001 – 15,000 THB | 172 | 26.7 |
| 15,001 – 20,000 THB | 110 | 17.1 |
| 20,001 THB and above | 89 | 13.8 |
| Nationality | | |
| Thai | 673 | 97.7 |
| Non-Thai | 16 | 2.3 |

 Table 4.1
 Number and Percentage of Commercial Sex Workers's Social and

 Population Information

Table 4.1 (Continued)

| Socio-demographic Variables | Number | % |
|-----------------------------|--------|------|
| Duration as CSW | | |
| Less than 1 year | 360 | 53.7 |
| More than 1 year | 310 | 46.3 |

Regarding commercial sex workers' sexual behavior, it was found that 85.1% did not use drugs, while only 14.9% used drugs. Most of commercial sex workers, 89.1% did not having sex with customers when they had symptoms of an STI, i.e. pain while urinating, itching, or rash. 97.4% of commercial sex workers used a condom when having sex with a customer. 81.7% of informants had slept with multiple partners. 75.4% had their blood checked for HIV. The details of study can be shown in Table 4.2.

 Table 4.2
 Number and Percentage of Commercial Sex Workers's at Risky Sexual Behavior

| Risk Sexual Behavior Variables | Number | % |
|---------------------------------------|--------|------|
| Drug use | | |
| Yes | 96 | 14.9 |
| No | 547 | 85.1 |
| Having sex during venereal disease | | |
| Yes | 70 | 10.9 |
| No | 573 | 89.1 |
| Condom Usage | | |
| Yes | 408 | 97.4 |
| No | 11 | 2.6 |
| Sleeping with several ones | | |
| Yes | 347 | 81.7 |
| No | 77 | 17.3 |

Table 4.2 (Continued)

| Risk Sexual Behavior Variables | Number | % |
|---------------------------------------|--------|------|
| HIV Blood testing | | |
| Yes | 486 | 75.4 |
| No | 158 | 24.6 |

Regarding knowledge and awareness of AIDS, it could be found that 84.9% of sampling units could answer correctly regarding condom usage when having sex and its ability to prevent AIDS. 74.5% could answer correctly that in spite of the appearance of good health, people could be HIV positive. 70.8% could answer correctly about treatment for AIDS. Only 39.3% could answer correctly that only sleeping with a single partner is one of the methods to prevent AIDS. The details of study can be shown in Table 4.3.

 Table 4.3 Number and Percentage of Commercial Sex Workers's Knowledge and Encouragement of HIV/AIDS

| | Knowledge of HIV/AIDS | Corrected answer | | Incorrected answer | |
|----|----------------------------------|------------------|------|--------------------|------|
| | Kilowledge of HTV/AIDS _ | | % | No. | % |
| 1. | Sleeping with only single one | 271 | 39.3 | 418 | 60.7 |
| | can protect AIDS infection | | | | |
| 2. | Use condom can protect AIDS | 585 | 84.9 | 104 | 15.1 |
| | infection | | | | |
| 3. | Health guy possibly infects HIV | 513 | 74.5 | 176 | 25.5 |
| 4. | Mosquito can be HIV host | 396 | 57.5 | 29 | 42.5 |
| 5. | Having food with AIDS patient | 405 | 58.8 | 24 | 41.2 |
| | may infect | | | | |
| 6. | Presently there is anti-virus to | 488 | 70.8 | 201 | 29.2 |
| | prohibit AID | | | | |

With regards to scoring of knowledge and awareness of HIV/AIDS, the results of ranking show that only a few of those sampled had a comprehension at a lower level (score in range of 1-3) 20.8%. While 79.2% of those sampled had a greater comprehension level (score in range of 4-6). The details can be shown in Table 4.4.

Table 4.4 Level of Knowledge and Awareness of HIV/AIDS

| Knowledge of HIV/AIDS | No. | % |
|-----------------------|-------------|-------------|
| Low (1-3 score) | 143 | 20.8 |
| High (4-6 score) | 546 | 79.2 |
| Min = 0, Max = 6 | Mean = 3.86 | S.D. = 1.59 |

According to the analytical results from the laboratory to test for HIV, Syphilis, Chlamydia Trachomatis, and Neisseria Gonorrhea infection amongst commercial sex workers, it was found that 3.2% of commercial sex workers were infected with HIV, 6.8% with Chlamydia Trachomatis, 0.8% with Syphilis, and 0.2% with Neisseria Gonorrhea. The details can be shown in Table 4.5.

 Table 4.5
 Number and Percentage of Commercial Sex Workers's HIV, Syphilis,

 Chlamydia Trachomatis, and Neisseria Gonorrhea Infection

| Infaction | Positive | | Negative | |
|----------------------------|----------|-----|----------|------|
| Infection | No. | % | No. | % |
| HIV | 20 | 3.2 | 605 | 87.8 |
| Syphilis | 5 | 0.8 | 620 | 99.2 |
| Chlamydia Trachomatis (CT) | 47 | 6.8 | 578 | 92.5 |
| Neisseria Gonorhea (NG) | 1 | 0.2 | 624 | 90.6 |

4.1.2 Commercial Sex Workers' Health

A study of commercial sex workers' health in Phuket Province can be categorized into 8 parts as follows:

- 2) Role-Physical (RP)
- 3) Body Pain (BP)
- 4) General Health (GH)
- 5) Vitality
- 6) Social Functioning (SF)
- 7) Role-Emotional (RE) and
- 8) Mental Health (MH)

It could be found that Physical Functioning scored highest at 87.85. The next orders are Body Pain (79.76), and Social Functioning (78.45). The lowest score was General Health (63.22) and Mental Health (62.38). The details are shown in Table 4.6.

 Table 4.6
 Mean and Standard Deviation of Commercial Sex Workers's Health

| Domain | Mean | Std. Deviation | • |
|---------------------------|-------|----------------|---|
| Physical Functioning (PF) | 87.85 | 17.17 | |
| Role-Physical (RF) | 70.32 | 32.17 | |
| Role-Emotional (RE) | 75.05 | 33.51 | |
| Vitality (VT) | 57.57 | 16.51 | |
| Mental Health (MH) | 62.38 | 18.65 | |
| Social Functioning (SF) | 78.45 | 19.38 | |
| Bodily Pain (BP) | 79.76 | 18.92 | |
| General Health (GH) | 63.22 | 17.10 | |
| Health Change | 59.28 | 22.39 | |
| | | | |

4.1.3 Analysis of Relation between Variables of Population, Risky Sexual Behavior, and Commercial Sex Workers's Encouragement about HIV, Syphilis, Chlamydia Trachomatis, and Neisseria Gonorrhea Infection

According to the analysis of the relationships between variables of at risk sexual behavior (drug usage, having sex while having and STI, lack of condom use, sleeping with multiple partners, and lack of regular blood testing for HIV, Syphilis, Chlamydia Trachomatis, and Neisseria Gonorrhea infection) of commercial sex workers, no correlation between behavior and infection could be found. The details can be shown in Table 4.7 thru Table 4.10.

 Table 4.7 Relation between Sexual Behavior Variables and Commercial Sex

 Workers's HIV Infection

| Dish Game I Daharian |] | | | |
|----------------------------|----------|------------|-----------|------------------|
| Kisk Sexual Benavior | Positive | Negative | Total | Statistics |
| variables | No. (%) | No. (%) | No. (%) | |
| Drug use | | | | |
| Yes | 3 (3.4) | 86 (96.6) | 89 (100) | $\chi^2 = 0.004$ |
| No | 16 (3.2) | 478 (96.8) | 494 (100) | p-value = 1.00 |
| Having sex during venereal | | | | |
| disease | 3 (4.7) | 61 (95.5) | 64 (100) | $\chi^2 = 0.465$ |
| Yes | 16 (3.1) | 503 (96.6) | 519 (100) | p-value = |
| Never | | | | 0.453 |
| Condom usage | | | | |
| Use | 13 (3.6) | 348 (96.4) | 361 (100) | $\chi^2 = 0.373$ |
| Not Use | 0 | 10 (100) | 10 (100) | p-value = 1.00 |
| Sleeping with several ones | | | | |
| Yes | 10 (3.3) | 296 (96.7) | 306 (100) | $\chi^2 = 0.855$ |
| No | 4 (5.6) | 68 (94.4) | 72 (100) | p-value = |
| | | | | 0.316 |
| HIV blood testing | | | | |
| Yes | 14 (3.2) | 426 (96.8) | 440 (100) | $\chi^2 = 0.034$ |
| No | 5 (3.5) | 138 (96.5) | 143 (100) | p-value = |
| | | | | 0.791 |

| Disk Samuel Dehavior | Sy | | | |
|----------------------------|----------|------------|-----------|------------------|
| Kisk Sexual Denavior | Positive | Negative | Total | Statistics |
| variables | No. (%) | No. (%) | No. (%) | |
| Drug use | | | | |
| Yes | 1 (1.1) | 88 (98.9) | 89 (100) | $\chi^2 = 0.295$ |
| No | 3 (0.6) | 491 (99.4) | 494 (100) | p-value = 0.485 |
| Having sex during venereal | | | | |
| disease | | | | |
| Yes | 0 | 64 (100) | 64 (100) | $\chi^2 = 0.497$ |
| Never | 4 (0.8) | 515 (99.2) | 519 (100) | p-value = 1.00 |
| Condom use | | | | |
| Use | 2 (0.6) | 359 (99.4) | 361 (100) | $\chi^2 = 0.56$ |
| Not Use | 0 | 10 (100) | 10 (100) | p-value = 1.00 |
| Sleeping with several ones | | | | |
| Yes | 3 (1.0) | 303 (99.0) | 306 (100) | $\chi^2 = 0.712$ |
| No | 0 | 72 (100) | 72 (100) | p-value = 1.00 |
| Syphilis blood testing | | | | |
| Yes | 4 (0.9) | 436 (99.1) | 440 (100) | $\chi^2 = 1.309$ |
| No | 0 | 143 (100) | 143 (100) | p-value = 0.577 |

Table 4.8 Relation between Sexual Behavior Variables and Commercial Sex Workers's Syphilis Infection

| | Chlar | Chlamydia Trachomatis | | | |
|-----------------------------|----------|-----------------------|-----------|--------------------------------------|--|
| Risk Sexual Behavior | | Infection | | C 4-4 2 -4 2 -7 | |
| Variables | Positive | Negative | Total | - Statistics | |
| | No. (%) | No. (%) | No. (%) | | |
| Drug use | | | | | |
| Yes | 6 (6.7) | 83 (93.3) | 89 (100) | $\chi^2 = 0.191$ | |
| No | 40 (8.1) | 454 (91.9) | 494 (100) | p-value = 0.83 | |
| Having sex during venereal | | | | | |
| disease | 6 (9.4) | 58 (90.6) | 64 (100) | $\chi^2 = 0.218$ | |
| Yes | 40 (7.7) | 479 (92.3) | 519 (100) | p-value = 0.62 | |
| Never | | | | | |
| Condom use | | | | | |
| Use | 31 (8.6) | 330 (91.4) | 361 (100) | $\chi^2 = 1.564$ | |
| Not Use | 2 (20.0) | 8 (80.0) | 10 (100) | p-value = 0.22 | |
| Sleeping with several ones | | | | | |
| Yes | 28 (9.2) | 278 (90.8) | 306 (100) | $\chi^2 = 0.023$ | |
| No | 7 (9.7) | 65 (90.3) | 72 (100) | p-value = 0.82 | |
| Chlamydia Trachomatis blood | | | | | |
| testing | | | | | |
| Yes | 32 (7.3) | 408 (92.7) | 440 (100) | $\chi^2 = 0.941$ | |
| No | 14 (9.8) | 129 (90.2) | 143 (100) | p-value = 0.3 | |

| Table 4.9 | Relation between Sexual Behavior Variables and Commercial Sex |
|-----------|---|
| | Workers's Chlamydia Trachomatis Infection |

| | Neisseria | | | |
|----------------------------|-----------|------------|-----------|------------------|
| Risk Sexual Benavior | Positive | Negative | Total | Statistics |
| v ariables | No. (%) | No. (%) | No. (%) | |
| Drug use | | | | |
| Yes | 0 | 89 (100) | 89 (100) | $\chi^2 = 0.180$ |
| No | 1 (0.2) | 493 (99.8) | 494 (100) | p-value = 1.00 |
| Having sex during venereal | | | | |
| disease | 0 | 64 (100) | 64 (100) | $\chi^2 = 0.124$ |
| Yes | 1 (0.2) | 518 (99.8) | 519 (100) | p-value = 1.00 |
| Never | | | | |
| Condom use | | | | |
| Use | 1 (0.3) | 360 (99.7) | 361 (100) | $\chi^2 = 0.028$ |
| Not Use | 0 | 10 (100) | 10 (100) | p-value = 1.00 |
| Sleeping with several ones | | | | |
| Yes | 1 (0.3) | 305 (99.7) | 306 (100) | $\chi^2 = 0.236$ |
| No | 0 | 72 (100) | 72 (100) | p-value = 1.00 |
| Neisseria Gonorrhea blood | | | | |
| testing | 1 (0.2) | 439 (99.8) | 440 (100) | $\chi^2 = 0.32$ |
| Yes | 0 | 143 (100) | 143 (100) | p-value = 1.00 |
| No | | | | |

| Table 4.10 | Relation between | Sexual Behavior | · Variables a | nd Commercial | Sex |
|-------------------|-------------------|-------------------|---------------|---------------|-----|
| | Workers's Neisser | ria Gonorrhea Int | fection | | |

According to the analysis of relation between variables of commercial sex workers' knowledge of AIDS and the rates of infection for HIV, Syphilis, Chlamydia Trachomatis, and Neisseria Gonorrhea, no relationship could be found. The details can be shown in Table 4.11 thru Table 4.14.

| |] | | | |
|-----------------------|----------|------------|-----------|------------------|
| Knowledge of HIV/AIDS | Positive | Negative | Total | Statistics |
| | No. (%) | No. (%) | No. (%) | |
| High | 5 (3.8) | 125 (96.2) | 130 (100) | $\chi^2 = 0.221$ |
| Low | 15 (3.0) | 480 (97.0) | 495 (100) | p-value = 0.583 |

 Table 4.11
 Relation between Commercial Sex Workers's HIV/AIDS Knowledge

 Variables and HIV Infection

 Table 4.12
 Relation between Commercial Sex Workers's HIV/AIDS Knowledge

 Visit All and the set of the set of

Variables and Syphilis Infection

| | Sy | | | |
|-----------------------|----------|------------|-----------|------------------|
| Knowledge of HIV/AIDS | Positive | Negative | Total | Statistics |
| | No. (%) | No. (%) | No. (%) | |
| High | 1 (0.8) | 129 (99.2) | 130 (100) | $\chi^2 = 0.002$ |
| Low | 4 (0.8) | 491 (99.2) | 495 (100) | p-value = 1.00 |

 Table 4.13 Relation between Commercial Sex Workers's HIV/AIDS Knowledge

 Variables and Chlamydia Trachomatis Infection

| | Chlamydia | | | |
|-----------------------|-----------|------------|-----------|------------------|
| Knowledge of HIV/AIDS | Positive | Negative | Total | Statistics |
| | No. (%) | No. (%) | No. (%) | |
| High | 13 (10.0) | 117 (90.0) | 130 (100) | $\chi^2 = 1.452$ |
| Low | 34 (6.9) | 461 (93.1) | 495 (100) | p-value = 0.261 |

| | Neisseria | | | |
|-----------------------|-----------|------------|-----------|------------------|
| Knowledge of HIV/AIDS | Positive | Negative | Total | Statistics |
| | No. (%) | No. (%) | No. (%) | |
| High | 0 | 130 (100) | 130 (100) | $\chi^2 = 0.263$ |
| Low | 1 (0.2) | 494 (99.8) | 495 (100) | p-value = 1.00 |

 Table 4.14 Relation between Commercial Sex Workers's HIV/AIDS Knowledge

 Variables and Neisseria Gonorrhea Infection

4.1.4 Analysis of Risk Variables Against Commercial Sex Workers's Infection of Analysis of Risk Variables Against Commercial Sex Workers's Infection of HIV, Syphilis, Chlamydia Trachomatis, and Neisseria Gonorrhea

After risk variables of 20 HIV infected commercial sex workers in model-1 had been tested, it was found that there was no statistically significant variable related to HIV infection. However, when risk analysis was conducted it was found that the highest risk for HIV infection resulted from sleeping with multiple partners (2.78 times more likely). The next orders were HIV blood testing (2.32 times), having sex while having an STI (1.17 times), and drug usage (1.11 times) When individual variables were considered, it could be found that commercial sex workers who used drugs had a greater risk of HIV infection than those that do not at 1.11 times. Having sex while having an STI was 1.14 times greater risk of Syphilis infection.

After risk variables of 5 Syphilis infected commercial sex workers in model-2 had been tested, it could be found that there was no statistically significant variable related to Syphilis infection. When risk analysis was conducted, it could be found that the highest risk for Syphilis infection resulted from having sex while having an STI 1.79 times.

After risk variables of 47 Chlamydia Trachomatis infected commercial sex workers in model-3 had been tested, there was a statistically significant variable related to Syphilis infection (P=0.05). Those that have tested for HIV infection were at a greater risk for Chlamydia Trachomatis infection than the ones who had never been tested by 2.83 times.

After risk variables of 1 Neisseria Gonorrhea infected commercial sex worker in model-4 had been tested, it could be found that the highest risk for Neisseria Gonorrhea infection resulted from drug usage at 6.15 times. The details can be shown in Table 4.15.

Table 4.15 Risk Variables Against Commercial Sex Workers's HIV, Syphilis,Chlamydia Trachomatis, and Neisseria Gonorrhea Infection

| Sexual Behavior | Odd Ratios of Different Infection | | | | | | |
|-----------------------|--|-----------|-----------|-----------|--|--|--|
| Variables and | HIV | Syphilis | СТ | NG | | | |
| Knowledge of | (Model-1) | (Model-2) | (Model-3) | (Model-4) | | | |
| HIV/AIDS | | | | | | | |
| Drug use | | | | | | | |
| Yes | 1.112 | 0.275 | 1.472 | 6.153 | | | |
| No | 1 | 1 | 1 | 1 | | | |
| Having sex during | | | | | | | |
| venereal disease | | | | | | | |
| Yes | 1.141 | 1.792 | 1.128 | 3.447 | | | |
| No | 1 | 1 | 1 | 1 | | | |
| Condom use | | | | | | | |
| Use | 0.000 | | 1.878 | | | | |
| Not Use | 1 | | 1 | | | | |
| Sleeping with several | | | | | | | |
| ones | 2.789 | | 1208 | | | | |
| Yes | 1 | | 1 | | | | |
| No | | | | | | | |
| HIV blood testing | | | | | | | |
| Yes | 2.329 | | 2.831* | | | | |
| No | 1 | | 1 | 1 | | | |

Table 4.15 (Continued)

| Sexual Behavior | Odd Ratios of Different Infection | | | |
|-----------------|-----------------------------------|-----------|-----------|-----------|
| Variables and | HIV | Syphilis | СТ | NG |
| Knowledge of | (Model-1) | (Model-2) | (Model-3) | (Model-4) |
| HIV/AIDS | | | | |
| Knowledge of | | | | |
| HIV/AIDS | 0.627 | 0.111 | 0.65 | 3.990 |
| Low | 1 | 1 | 1 | 1 |
| High | | | | |

*Significant at p-value < 0.05

4.2 Qualitative Research Findings

This qualitative study is aimed to describe the sexual risk behaviors and sexual health of commercial sex workers by using the interview as the primary method of data collection. This study is an example of this type of research using the life experiences of women who sell sexual services to provide input on at risk sexual behavior and the sexual health of commercial sex workers, including their ability to negotiate with clients to use condoms to prevent HIV infection and other sexually transmitted diseases. Researchers present their findings here but have changed the names of the informants in order to respect the rights and dignity of these women and presented as separate these sections.

4.2.1 Life History and Background of the Perfect Female Commercial Sex Worker

Informants for this study were 10 commercial sex workers who presented themselves at STD clinic services at the Provincial Public Health Office in Phuket. All were Thai Buddhists. The mean age was 35, with ages ranging from 22 years old to 50 years old. Marital status was 3 were single, three people were divorced, 1 was widowed and 3 lived with a husband or lover. All came from outside of Phuket, 4

from the North-Eastern region, 4 from the Northern region, 1 from the Central region and 1 from Bangkok. All are currently residents in Phuket. Their reasons for coming to Phuket for work were to apply for jobs to send money back home, or moved from a place previously worked. Educational levels ranged from primary level to Bachelor's Degree. One person had finished primary school, 3 people had graduated from high school, 3 had completed their vocational education, and 3 people graduated with a Bachelor Degree. The reasons given by those that did not complete higher education was that they came from poor economic backgrounds needing to work to support themselves and their families or they married and had children and couldn't go on in their studies.

Family background of the informants was diverse, whether from a nuclear family or separated on their own. Three informants, Tak, Poi and Liu, came from poor rural families, whose main occupation was farming. They all had partners but were not officially married, and they had children by these partners. Family life was not as smooth as expected and all ended up separating from their partners and being left to care for their children. Children were left with a grandmother, so that the women could go and find jobs to support their families. Most said the reason for their separation was that their husband/boyfriends were not supporting or being responsible for their families.

One informant was a 50 year old widow with three children. She has worked in Phuket for 3 years. Only one informant had been a steady relationship for the past three years. Other informants had no partner or lover in while working in Phuket.

4.2.2 Sexual Risk Behavior and Sexual Health of Women Selling Sexual Services

Sexual risk behaviors and the sexual health of commercial sex workers are diverse depending on lifestyle and life changes in a variety of areas. These women are independent with a strong desire to maintain themselves and their families. They have had to adapt and change their behaviors in order to deal with their circumstances. Their normal sexual behavior is one obvious thing that they have had to change in order to meet the requirements of their profession.

4.2.2.1 Behavior of using condoms

The background history of the informants showed that three informants had regular sex with more than one partner. When asked about their sexual behavior, informants of this group, almost universally stated that they never used condoms when having sex with a regular partner, though they may have initially. This reflects on a number of sexual issues, including their lack of knowledge about safe sexual health behaviors, the role of hygiene in maintaining good health and the socio-cultural values they have towards sexual relationships.

Many informants had a lack of understanding of risky sexual health behaviors, as they were not concerned about their own sexual health. There was a great lack of knowledge about at risk sexual behaviors, including the use of condoms, drug use, birth control and sexually transmitted diseases.

All informants were not consistent with condom usage. Four informants had never used condoms before becoming commercial sex workers, but now use condoms occasionally. Some informants were more self-aware, as they see their lovers as flirts. Some male partners want to use condoms. This shows that the lack of condom usage is due to a lack of knowledge about the role of condoms in preventing the transmission of sexually transmitted diseases. Most informants had only a limited knowledge of differing STIs including HIV. Informants understood that people with AIDS would have visible symptoms, and therefore base their decisions on condom use upon a visual check of their partner. Informants knew that HIV could be spread via blood transmission during sex, but had no idea that it could be transmitted from mother to fetus. They engaged in risky behavior because they all saw AIDS as something distant.

Female commercial sex workers get tested at the STD clinic in the Provincial Health Office every week due to the rules of their employers, and have a blood test for HIV every three months which heightens their awareness of the importance of being checked. But testing is not always consistent as women miss appointments due to illness or are not available at that time.

Interviews also revealed that another reason affecting regular examinations was the continued support from medical professionals. Supportive medical staff are able to track patient histories and are able to highlight health issues and raise awareness which promotes regular visits by informants.

4.2.2.2 Maintaining hygiene

Commercial sex workers take no additional efforts as regards personal hygiene and do not worry about it. Only two informants, Ik and Liu, paid any special attention to personal hygiene. Ik stated that she always washes her body and genitals immediately after having sex because she felt dirty and uncomfortable. Most informants do not take any additional methods of hygiene besides using water to wash themselves. Most did not use any other personal hygiene products, though they are widely available and promoted on TV and radio advertising. Wan stated that she feels clean enough with water washing and needs no additional chemical products to maintain hygiene. Informants were all asked about hygiene behavior after sex, only one reported not doing anything.

4.2.2.3 Sexual behavior

8 informants always used condoms, 2 informants use them occasionally, only when male clients requested to use condoms. Other informants will request that customers use condoms. Not all clients are cooperative and so it requires negotiation techniques to convince clients to use condoms. Sometimes clients need help to put on the condom.

Informants stated that they rarely use condoms with a boyfriend or lover, the number that did was quite small. Informants regarded this as a sign of trust in their partners. This shows that the knowledge of informants about the protection offered by condoms and associated sexual behaviors is insufficient. Their partners were also lacking knowledge of their risk behaviors. Only a few informants had more than a general understanding of their sexual health.

These social values regarding unprotected sex in relationships have existed in society for a long time. It is believed that marriage is a contract between a husband and a wife that sex will only occur within that relationship, therefore there is no need for condoms. Indeed, having only one sexual partner is one way to reduce the risk of HIV or other sexually transmitted diseases. Reality differs from societal ideals, but it is difficult to change condom usage among couples.

4.2.2.4 Sexual intercourse during symptoms of STI

Data from interviews showed that some informants continued to have sexual intercourse with clients even though they had symptoms of an STI such as a
burning feeling during urination or in the vagina, a rash or even herpes symptoms and were not worried about transmitting anything to their clients. Some will attempt non-vaginal sex as an alternative, but lack the understanding that STIs can be transmitted this way as well. More attention needs to be given to raising awareness about this with commercial sex trade workers.

4.2.2.5 Substance Abuse

From the interviews five informants reported regular alcohol consumption and smoking during and after work. Informants felt that alcohol was necessary to feel relaxed and more engaging with customers. Only a small percentage never drank alcohol or smoked cigarettes, but they instead try to persuade customers to give drinks to their friends. Only one was concerned that if she drank alcohol she may become drunk and pass out during work.

No informants reported drug use due to fears of the legal measures that might be taken. Informants were sometimes subjected to random drug testing as well.

In summary, data from interviews show that commercial sex workers wrongly believe that simply washing after intercourse will prevent HIV, or that it is not necessary to wear condoms with trusted partners or regular customers who appear clean. Women lack the power often to negotiate condom use. Substance abuse may affect condom usage. The quality of the condoms and the use of proper lubricants may be a factor in condom use, or breakage.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

This study aimed to investigate the sexual behaviors of female commercial sex workers who had an STI or HIV in Phuket Province. It was found that the prevalence of HIV infection of women who work as commercial sex workers is continuously being reduced. This trend can only continue if a number of misconceptions can be corrected: washing after sex will prevent HIV; and, that unprotected sex with trusted partners or regular customers who seem healthy poses low risk. Women also need to have more power to negotiate with clients over condom use. Substance abuse that impairs this negotiation needs to be lowered. The quality of condoms and the use of lubricants needs to be promoted, as well as proper usage to prevent breakage.

Additionally, the coordination and cooperation among medical personnel and relevant government officials is also a factor effecting HIV transmission. This study applies information and trends of infection among female commercial sex workers for the benefit of those coordinating efforts to control the spread of HIV in society. However, the prevalence of infection and the ability to hinder transmission are hindered for several reasons. The transient nature of commercial sex workers, the changing background of people that enter this profession, and movement of the sex trade from direct establishments (e.g. brothels) to indirect or hidden establishments (e.g. bars and karaoke places) all make monitoring and designing promotion campaigns difficult. So information on this issue is not yet complete and existing tools for data collection and analysis may not be complete. A continuous ongoing study that analyzes the patterns of HIV/AIDS prevention and control using anthropological methods to the qualitative data needs to happen.

5.1 The Result of the Research

5.1.1 Characteristics of Socio-Demographic of the Sample Group

Mean age of the sampling units were 29 years. Most were aged between 20 to 29. The average educational level obtained was secondary level at 55 percent, followed by primary school at 36.3 percent. A small number held a diploma from a technical college or a bachelor degree. Only a very few never completed primary school. In regards to marital status, it was found that the majority, more than half, were married or living with a husband, followed by unmarried at 34.6 percent and widowed / divorced / separated at 4.6 percent. Their average income was between 5,000 to 10,000 baht. Most are Thais with only a few foreign workers. Commercial sex workers were equally divided between those that had worked for more than one year and those that hadn't. Most had lived in Phuket for less than one year.

For the sexual behavior of female commercial sex workers, most do not use drugs, nor do they have sex with customers while they have signs of an STI such as urinary burning, or itching with blisters (89%). In addition, condom use with clients is high at 97.4 percent, while many have multiple partners (81.7%). 75.4 percent of workers have regular blood tests for HIV infection.

Knowledge and awareness about HIV/AIDS was found to be high (scores between 4-6 points) at 79.2 percent. The most common correct answer was that a condom will protect against HIV infection, while the least correct answer that having sex with only one partner will help protect against HIV infection, only 39.3 percent correctly answered.

The results of laboratory tests to identify STIs including HIV infections, among commercial sex workers found that 3.2 percent were infected with HIV, 6.8% with Chlamydia Trachomatis, 0.8% with Syphilis, and 0.2% with Neisseria Gonorrhea

5.1.2 Health Status of Commercial Sex Workers

The study of the health status of commercial sex workers in Phuket found that Physical Functioning scores highest with an average of 87.8513, followed by Body Pain (79.7612), and Social Functioning with 78.4537. The lowest scores were General Health (63.2251) and Mental Health (62.3893).

5.1.3 The Relationship between Demographic Factors and Sexual Risk Behaviors and Knowledge about HIV / AIDS Awareness on HIV / AIDS, HIV Infection, Gonorrhea, Syphilis and Gonorrhea Imitation of Commercial Sex Workers

An analysis of the relationship between factors of at risk sexual behaviors and knowledge and awareness about AIDS found that there was no variable between these factors associated with HIV infection, gonorrhea, syphilis and chlamydia trachomatis.

5.1.4 Risk Factors for Infection with HIV Infection, Gonorrhea, Syphilis and Gonorrhea Imitation of Commercial Sex Workers

There were no statistically significant variables which correlated infection risk with infection of HIV, syphilis, or gonorrhea. The only risk factor found was for chlamydia trachomatis (CT). After risk variables of 47 chlamydia trachomatis infected commercial sex workers in model-3 had been tested, there was a statistically significant variable related to Syphilis infection (P=0.05). Those that have tested for HIV infection were at a greater risk for chlamydia trachomatis infection than the ones who had never been tested by 2.83 times.

5.2 Discussion

For the sexual behavior of female commercial sex workers that are mentioned here most have multiple partners (81.7%). This would indicate that female commercial sex workers are at a greater risk for HIV infection and other infectious diseases which is consistent with other research (Peter, 2001), that the spread of HIV / AIDS and sexually transmitted diseases is occurring at a rapid pace currently. This study also finds that the factors affecting the spread of HIV/AIDS and other sexually transmitted diseases are population factors, social knowledge, attitude and perceived risk of infection. As mentioned, multiple partners of both the female commercial sex workers and their husbands or lovers increases risk due to the lack of condom use by couples. There needs to be more done to monitor and track infection rates among female commercial sex workers in Thailand again. (Ghys et al, 2001).

The best measures to prevent infection among female commercial sex workers are providing education and counseling, appropriate and easy access to information and support for negotiating condom use and greater access to condoms (Kishindo, 1995).

When considering socio-demographic factors, it found that the spread infection will mostly affect those in the 20-29 year old bracket who are mostly likely to become commercial sex workers. The study found that commercial sex workers in Phuket have a low level of education, most have only an elementary or middle school education. Only a minority hold a Bachelor degree or a diploma from a technical college in accordance with (Nguyen, 1997). And the study showed an association between sexual behaviors and the protection of sexual rights.

Condom use for men who visit commercial sex facilities was high (97.4 percent) which would indicate that in Thailand the rate of access to condoms is higher than in other countries. The level of knowledge and awareness about AIDS among female commercial sex workers was high, unlike other countries in Asia such as Bali, Indonesia, and that access to condoms was affected by the expense of the commercial sex workers.

It is widely accepted that the prevention of HIV and other sexually transmitted infections is achieved following 3 best practices: using a condom; reducing partners; and, preventing sexually transmitted infections because one infection often becomes a gateway for HIV (Asiimwe-Okiror et al, 1997; Pool et al, 1996; and Kwesigabo et al, 1999).

Prevention systems in Thailand have developed and advanced materially from the past. The Epidemiologists Office has an improved system in both, methods of preventing and standard data collection. The types and kinds of data collection are always kept up to date with the current situation of the problem of HIV / AIDS. The current surveillance system consists of seven sub-systems:

- 1) surveillance system and behavior associated with HIV infection
- 2) surveillance system for HIV infection
- 3) surveillance of the incidence of HIV infection
- 4) surveillance system and infection of HIV drug resistance
- 5) surveillance system reported by AIDS patients
- 6) surveillance of children born from mothers infected with HIV and
- 7) surveillance system for adverse events from antiretroviral drugs

It can be seen that the surveillance systems are the actions that store quantitative data that was collected by using sampling laboratory results. There is still a lack of qualitative data to explain the phenomenon of commercial sex work and the areas of safe sex. It is important to use the in-depth inquiry in order to obtain the best data, similar to Uganda's use of in-depth interviews to gather information about the number of partners of commercial sex workers

5.3 Recommendations

5.3.1 Policy Suggestion

Voluntary Counseling and Testing should be readily available.
 VCT is a significant policy both medically and socially and needs to be linked to confidentiality and provided free of charge.

2) To support the advisory services of voluntary HIV blood testing for the general public even those without specific risks but may possibly have symptoms.

3) Government agencies should coordinate with other networks such as private sector organizations to support the purchasing and distribution of condoms. Linked to this should be awareness programs that infected people can lead normal lives in society to reduce the stigma of condom use, commercial sex workers need to know that they have the authority to negotiate condom usage.

4) There should be a strategic collaboration for agencies in the creation of policies, operations and implementation of these policies to prevent and control sexually transmitted diseases among female commercial sex workers in the campaign for blood infections as undertaken by the Office of the National Health Security.

5) Knowledge and awareness about AIDS needs to be increased. Although education campaigns have existed for a long time, this study found that there are still some issues that female commercial sex workers have not understood correctly. Without this understanding female commercial sex workers have no understanding of how to protect themselves.

6) The central government's plan to distribute authority to provincial and local levels needs to ensure that the budget relating to HIV / AIDS is maintained at levels similar to previous years.

7) Development should be coordinated between the Ministry of Health and other agencies in order to comply with the policies and to insure that programs are moving in the same direction particularly access to prevention procedures, such as condoms.

8) The Ministry of Health should coordinate with the Office of National Police, to share operations to prevent HIV infection among the commercial sex workers in both men and women who do not use a condom or in possession of evidence related to allegations of prostitution.

5.3.2 Recommendations on the Development of Surveillance Systems

1) In-depth information should be collected on issues such as condom use, negotiating with customers to use condoms during sexual intercourse.

2) An intensive and continuous campaign to raise awareness and understanding of clients about sexually transmitted diseases and AIDS.

3) Monitoring systems should be developed that allow for the tracking the patterns of spread of HIV infection in specific target groups, such as injection drugs users, homosexual men, commercial sex workers, prisoners and other vulnerable populations, while maintaining ethical and human right considerations.

4) There should be a system of surveillance of sexually transmitted diseases that has a standardized alert system when there is an epidemic of sexually transmitted diseases.

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APPENDIX

Questionnaire for Health Status

Explanation: This questionnaire is prepared with the purpose to evaluate your health performance. It could be used to indicate your attitude on your health and capability of your daily activities. Please answer the question sincerely. Your personal data shall be confidential due to no first name and last name identified. When you are ready, please either circle O or mark X at these figures which match with your feeling. If you are not sure in any questions, please choose the one which is your most favorite.

- 1. Presently, how about your health?
 - □ excellent
 - very good
 - **G** good
 - 🗖 fair
 - 🗖 bad
- 2. Compared with your health in a year ago, how about your present health?
 - **better than last year**
 - □ rather better than last year
 - □ no difference from last year
 - □ rather worse than last year
 - worse better than last year

3. Following are related to your activities in each day. Please evaluate your health whether it is obstruction against your activities, and if it is, please how does it obstruct you?

| Itom | Activity | Big | Small | No |
|------|------------------------------|-------------|-------------|-------------|
| Item | | obstruction | obstruction | obstruction |
| 3.1 | Activities requires strength | 1 | 2 | 3 |
| | and fast e.g. lifting up | | | |
| | heavy stuff, sport such as | | | |
| | running, aerobic dance, etc. | | | |
| 3.2 | Non extreme activities e.g. | 1 | 2 | 3 |
| | moving stuff such as table, | | | |
| | cleaning house such as | | | |
| | sweeping, polishing, etc. | | | |
| 3.3 | Lifting up light- | 1 | 2 | 3 |
| | heavyweight stuff | | | |
| 3.4 | Walking up and down stair | 1 | 2 | 3 |
| | more than 1 floor | | | |
| 3.5 | Walking up and down stair | 1 | 2 | 3 |
| | 1 floor | | | |
| 3.6 | Bending and shortening | 1 | 2 | 3 |
| | your knee | | | |
| 3.7 | Waking to distance more | 1 | 2 | 3 |
| | than 1.5 km ¹ | | | |
| 3.8 | Walking between Soi more | 1 | 2 | 3 |
| | than 1 Soi | | | |
| 3.9 | Walking between 1 Soi | 1 | 2 | 3 |
| 3.10 | Showering and wearing | 1 | 2 | 3 |
| | your clothes | | | |
| L | | | 1 | |

¹ distance derived by expectation

4. During a month ago, have you encounter trouble in your periodic working and activities resulting from your health?

| Item | | yes | no |
|------|---|-----|----|
| 4.1 | Spent less time for your working and activities | 1 | 2 |
| 4.2 | Achieving under expectation | 1 | 2 |
| 4.3 | Have limitation on working and activities (could not conduct some activities or non fully work) | 1 | 2 |
| 4.4 | Have difficulty on working and activities (non actively work) | 1 | 2 |

5. During a month ago, have you encounter trouble in your periodic working and activities resulting from your mental health?

| Item | | yes | no |
|------|---|-----|----|
| | | | |
| 5.1 | Spent less time for your working and activities | 1 | 2 |
| 5.2 | Achieving under expectation | 1 | 2 |
| 5.3 | Could not conduct some works or working with less details | 1 | 2 |

- 6. During a month ago, have your activities with family, friends, or people around been disturbed by your health and your mental health?²
 - 🗖 not at all
 - □ slightly disturb
 - □ fair disturb
 - □ highly disturb
 - □ extremely disturb

² question no.6 need to determine level of disturbance

- 🗖 not at all
- very slightly pain
- □ slightly pain
- □ fair pain
- □ highly pain
- extremely pain
- 8. During a month ago, do you feel how much your normal working (including external work and in-house work) been disturbed by your painful?^{3 3}
 - $\hfill\square$ not at all
 - □ slightly pain
 - □ fair pain
 - □ highly pain
 - extremely pain
- During a month ago, what do you feel about incidents happened to yourselves?
 Please choose the answers closest with your feeling in each question.

| Item | Feeling | Always | Mostly | Often | Sometimes | Slightly | Never |
|------|--|--------|--------|-------|-----------|----------|-------|
| 9.1 | You feel your life is perfect | 1 | 2 | 3 | 4 | 5 | 6 |
| 9.2 | You have been anxious | 1 | 2 | 3 | 4 | 5 | 6 |
| 9.3 | You feel depressed until nothing can make you cheerful | 1 | 2 | 3 | 4 | 5 | 6 |
| 9.4 | You have felt peacefully and | 1 | 2 | 3 | 4 | 5 | 6 |

³ question no.9 only concern in physical painful e.g. body pain, broken arm, etc.

| Item | Feeling | Always | Mostly | Often | Sometimes | Slightly | Never |
|------|-------------------|--------|--------|-------|-----------|----------|-------|
| | | | | | | | |
| | happily | | | | | | |
| 9.5 | You have high | 1 | 2 | 3 | 4 | 5 | 6 |
| | energy to work | | | | | | |
| 9.6 | You feel | 1 | 2 | 3 | 4 | 5 | 6 |
| | depressed and sad | | | | | | |

| Item | Feeling | Always | Mostly | Often | Sometimes | Slightly | Never |
|------|---------------------------------|--------|--------|-------|-----------|----------|-------|
| | | | | | | | |
| 9.7 | You feel weakly | 1 | 2 | 3 | 4 | 5 | 6 |
| 9.8 | You are happy guy | 1 | 2 | 3 | 4 | 5 | 6 |
| 9.9 | You feel tired and exhausted | 1 | 2 | 3 | 4 | 5 | 6 |

- 11. During a month ago, how your social activities with people around been disturbed by your health and your mental health? ⁴⁴
 - □ always disturb
 - □ mostly disturb
 - □ fair disturb
 - □ slightly disturb
 - □ never disturb

⁴ question no.10 only need to determine quantity of time being disturbed by physical and mantle health

| Item | | Certainly | True | Not | Not | Not |
|------|--|-----------|------|------|------|---------|
| | | true | | know | true | true at |
| | | | | | | all |
| 12.1 | I feel being painful easier than others | 1 | 2 | 3 | 4 | 5 |
| 12.2 | I am strong, good health as same as others I know | 1 | 2 | 3 | 4 | 5 |
| 12.3 | I think my health getting worse | 1 | 2 | 3 | 4 | 5 |
| 13.4 | My health is excellent | 1 | 2 | 3 | 4 | 5 |

12. How about your feeling in these items below:

Thank everyone for participating in this questionnaire

BIOGRAPHY

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