CHAPTER II

LITTERATURE REVIEW

2.1 HIV/AIDS as a global health problem

The Human Immuno-deficiency Virus and the Acquired Immuno-deficiency Syndrome is a global health problem. The first HIV/AIDS case was reported in 1981 in USA although actually it is believed that the HIV virus was spreading undetected since the 1970 (9). It has caused a tremendous impacts on social, cultural, economic, political, health problems of affected countries. A recent report released by the Joint United Nations Program on HIV/AIDS (10) and WHO, shows that infection with HIV, the virus that causes AIDS is far more common than previously thought. Over 33 millions adults and children are now believed to be living with HIV infection. One in every 100 sexually active adults world wide and, if current transmission rates hold steady, by the year 2000 the number of the people living with HIV/AIDS will soar to 40 million .

" The more we know about the AIDS epidemic, the worse it appears to be" said Dr. Peter Piot (11). Executive Director of UNAIDS " We are now realizing that rates of HIV transmission have been grossly under estimated particularly in Sub-Saharan. Africa, where the bulk of infection has been concentrated to date. South Africa now estimates that one in 10 adults are living with HIV, up by more than a third since 1996. And in Namibia, AIDS now kills nearly twice as many people as malaria, the next most common killer".

UNAIDS and WHO (3) estimated that around the world 40 million people living with HIV/AIDS, 3 million died of AIDS, and there were 5 million new infection with HIV in 2001. This includes 800,000 new infections among children, bringing the total number of children under the age of 15 currently living with HIV/AIDS to 2.7 million. About one-third of those currently living with HIV/AIDS are aged 15-24. Most of them do not know they carry the virus. Many millions more know nothing or too little about HIV to protect themselves against it.

The HIV came relatively late to Asia, affording the region the opportunity to learn from the experience of other countries. It seems that some lessons are indeed translating into successful prevention efforts, although prevention failures can also be found. Until the late 1980, no country in the region had experienced a major epidemic and, in 1999, only Cambodia, Myanmar and Thailand had documented significant nationwide epidemics. This situation is now rapidly changing. In 2001, 1.07 million adults and children were newly infected with HIV in Asia and the Pacific, bringing to 7.1 million the total number of people living with HIV/AIDS in this region. Of particular concern are the marked increases registered in some of the world's most heavily populated countries (3).

Surveillance data on China's huge population are sketchy, but the country's health ministry estimates that about 600,000 Chinese were living with HIV/AIDS in 2000. Given the recently observed rises in reported HIV infections and infection rates in many sub-populations in several parts of the country, the total number of people living with HIV/AIDS in China could well have exceeded one million by late 2001. HIV levels in specific groups are known to be rising in several other areas. Seven Chinese provinces were experiencing serious local HIV epidemics

in 2001, with prevalence higher than 70 percent among injecting drug users in a number of areas, such as Yili Prefecture in Xinjiang and Ruili County in Yunnan. There are also of heterosexually transmitted HIV epidemics in at least three provinces (Yunnan, Guangxi and Guangdong), with HIV rates reaching 4.6 percent (up from 1.6%in 1999) in Yunnan and 10.7 percent (up from 6%) in Guangxi among sentinel sex worker populations in 2000 (3).

At the end of 2000, the national adult HIV prevalence rate was under 1 percent, yet this meant that an estimated 3.86 million Indians were living with HIV/AIDS. Indonesia, the world's fourth-most populous country offers an example of how suddenly a HIV/AIDS epidemic can emerge. After more than a decade of negligible rates of HIV, the country is now seeing infection rates increase rapidly among injecting drug users and sex workers, in some places, along with an exponential rise in infection among blood donors. In 1999-2000, 40 percent of injectors in treatment in Jakarta were already infected. In Bogor, in West Java province, 25 percent of injecting drug users tested were HIV infected, while among drug using prisoners tested in Bali, prevalence was 53 percent. Many countries have seen major epidemics grow out of initially relatively contained rates of infection in these populations. Northern Thailand's epidemic in the late 1980 and early 1990 was primed in this way. Over 10 percent of young men became infected before strong national and local prevention efforts, including the "100 percent condom program", reduced high-risk behavior, encouraged safer sex and lowered HIV prevalence. Cambodia has over 4 percent HIV prevalence among adult population and 42.6 percent among CSW in 1998 (1). At the same time, there is ample evidence that early, large-scale and focused prevention programs, which include efforts directed at

both those with higher risk behavior and the broader population, can keep infection rates lower in specific groups and reduce the risk of extensive HIV spread among the wider population. Commercial sex provides the virus with considerable scope for growth. The limited national behavioral data collected in the region to date show that, over the past decade, the percentage of surveyed adult men who reported having visited a sex worker in a given year ranged from 5 percent in some countries to 20 percent in others. India and VietNam are countries where levels of infection among clients and sex workers are rising. In Ho Chi Minh City, the percentage of sex workers with HIV has risen sharply since 1998, reaching more than 20 percent by 2000. Few countries are acting vigorously enough to protect sex workers and clients from the virus. Although recent behavior surveillance surveys show that, in 11 out of 15 Asian countries and Indian states, over two-thirds of sex workers report using a condom with their last client, the need to boost condom use remains. In Bangladesh, Indonesia, Nepal and the Philippines, for instance, fewer than half of sex workers report using condom with every client. Sharing injecting equipment is a very efficient way of spreading HIV, making prevention programs among injecting drug user populations another top priority. Upwards of 50 percent of injecting drug users have acquired the virus in Myanmar, Nepal, Thailand, China's Yunnan province and Manipur in India. Thailand's well funded, politically supported and comprehensive prevention programs, which accelerated in the early 1990, have trimmed annual new HIV infections to about 30,000, from a high of 140,000 a decade ago. Although an estimated 700,000 Thais are living with HIV today, Thailand's prevention efforts probably averted millions of HIV infections. Nevertheless, one in 60 Thais in this country of 62 million people is infected with HIV, and AIDS has become the leading

cause of death, despite the country's prevention successes. There are indications that transmission between spouses is now responsible for more than half of new infections a reminder that mainly targeting high risk groups is inadequate, and that countries need to carefully track patterns of HIV spread and adapt their responses accordingly. Furthermore, ongoing high rates of HIV infection through needle sharing in Thailand highlight the need to sustain prevention efforts as the epidemic evolves (3).

2.2 HIV/AIDS situation in LAO P D R

The prevalence of HIV/AIDS in Lao PDR was still low (0.02%). The first case of HIV infection was reported in 1990 and the first case of Aids was officially identified in early 1992. As of the year 2000, 61,130 blood samples from 11 groups of people including patients, Lao repatriates, prisoners, seasonal migrants, service women, voluntary testers, employees, bar workers, pregnant women, students, and blood donors were tested for HIV and 717 of them were found positive. There were 190 report cases of AIDS and 72 of them died of AIDS. The provinces reporting the highest number HIV positives were Savannakhet, Vientiane Municipality and Champasak. The number of HIV cases in these provinces during 1999 - 2000 was 125, 78 and 34, respectively. The majority of HIV positive were males aged 20-29 years old, and the primary mode of transmission was heterosexual. Most of the HIV case reports from Savannakhet were male seasonal migrant workers to Thailand. They were tested for HIV because they were found to have opportunistic infections associated with AIDS. The second most common group testing positive in Savannakhet were service women who had sex in exchange for money (12).

In 1997, the Ministry of Health assayed to institute a HIV sentinel surveillance program to develop a clearer picture of HIV seroprevalence in Lao PDR instead of relying on case reports. After completion of two of the four target provinces, the surveillance was miscarried. Other studies of HIV prevalence in specific target populations have been conducted, but a large scale study of HIV prevalence and the behaviors leading to its spread was still lacking in Lao PDR. Therefore, the recommendation of the NCCA, non-governmental, and international organizations working in HIV, it was decided that the rapid implementation of a second generation HIV surveillance system, studying HIV related risk behavior and the prevalence of HIV and other sexually transmitted infections, was obligatory for understanding and combating HIV in Lao PDR (28).

2.3 Research and some studies

2.3.1 Cause of HIV/AIDS and mode of transmission

AIDS is caused by Human Immuno deficiency Virus (HIV), which is classified under the retrovirus group. It is transmitted by body fluids especially semen and vaginal secretions as well as by blood. The virus can also cross the placenta during pregnancy and infect the foetus and by breast milk to the baby. However, it is rarely transmitted by saliva, tears and other body secretions because the amount of HIV viruses present in them is so small (13). Unprotected sexual intercourse exposing to vaginal and seminal secretions, receptive anal intercourse traumatizing the fragile rectal mucous, sharing of the needle for injection, contact with the blood of an infected person and having multiple sexual partners are the high risk behaviors from which AIDS can be contracted. If a person acquires major sexually transmitted

diseases, there is a fair chance of HIV virus transmission through the ulceration (14). The chances of virus transmission are decreased if a person is circumcised. Epidemic of syphilis that occurred in the past took decades to spread throughout the world. But HIV virus being a slow virus and less infective than syphilis spread very rapidly because of today's world development in communication, transportation, massive human movement from one continent to another revolution on sex and social problems like prostitution, and drug addiction. Thus, AIDS is not a simple sexually transmitted disease like syphilis, and it spreads as an epidemic will be shared by the contemporary science, political, and cultural responses (15).

The mode of HIV transmission in America are mainly homosexual and intravenous drug use, but in Africa it is heterosexual. As significant number of women are infected, the prenatal transmission is increasingly becoming a major route of transmission. The linkage is clearest between HIV infection and STDs that cause genital ulcers, although not all studies find an association. With major STDs the chances of transmission range from 2 to9 times greater than without ulcers (16). The high prevalence rate of sexually transmitted diseases in Sub-Saharan Africa is partly responsible for heterosexual transmission of HIV infections, where probably five-sixths of all HIV positive women in the world are found there (17).

According to a study on risk factors for HIV transmission to regular female partners of HIV positive male blood donors in Northern Thailand, 46.5 percent of the 396 females partners were HIV infected. HIV positive women did not differ from HIV negative women by demographic characteristics, mean age at first sexual intercourse and frequency and type of sexual practice. HIV positive women were more likely to have history of any STDs (OR 1.9, 95% CI 1.0-3.4), genital herpes (OR

3.1, 95% CI 1.3-7.9), and swollen lymph nodes in the groin (OR 5.4, 95% CI 1.1-36.7) during the three years prior to the interview and a positive serology for HSV-2 (OR 2.2, 95% CI 1.2-4.1). STDs history of diagnosis in the male index were not associated with HIV positivity in the females (18).

2.3.2 Knowledge about HIV/AIDS

Knowledge about HIV/AIDS and their consequences plays an important role in modifying sexual behavior. In a study rural adolescents in New Delhi India, 83 percent had heard about AIDS. Two third knew about sexual and injectable modes of transmission. About half and 45.8 percent were aware of the HIV transmission by blood and IDU respectively. Majority did not know the methods of HIV prevention, only 27.1 percent girls knew about condom usage (19).

A high level of knowledge related to risk factors but lower level of transmission mode of HIV/AIDS of childbearing women in Korea. They showed avoidance toward HIV/AIDS persons but acceptance toward HIV/AIDS prevention measure (20).

According to the Reproductive Health Survey 2000 (RHS) (21) in Lao PDR, 31% of women had never heard of HIV/AIDS and 48% had never heard of STIs/RTIs. Of those who had heard about HIV/AIDS, awareness of different modes of transmission was as follows: sexual intercourse 64%, blood transfusion 35%, injection 46%, and mother to child 15%.

In the Adolescent Reproductive Health Survey 2000 (ARHS) (22) in Lao PDR, young people aged between 15 to 25 were interviewed nation-wide. The study revealed that 25% of them had never heard of HIV/AIDS. Compared to the

young people with some education were twice as likely to have heard about HIV/AIDS (81% vs. 33%). Similarly, urban youth had greater awareness than their rural counterparts (93% vs. 67%), and males were more aware than females (81% vs. 68%). Those in the central region seemed to have much higher knowledge on HIV/AIDS than those in northern and southern regions (86% vs. 65%). For people who had heard about HIV/AIDS, the main sources of information were family, relatives and friends (24%), TV (23%), radio (23%), print media (19%), and health workers (7%). In Vientiane Municipality, television was identified by 82 percent as the main source of information, followed by radio (64%) and newspapers 51 percent (VSB & CUS 1999) (12). The majority of respondents in the ARH survey 2000 recognized several ways of preventing HIV/AIDS, such as not being sexually promiscuous (62%), not visiting sex workers (60%), and not sharing needles and syringes (56%). However, the knowledge on condom use as a preventive measure was relatively low (55%). There were also many misconceptions regarding prevention, such as taking medicine before sexual intercourse and washing genitals after sexual intercourse.

2.3.3 Attitude towards sexual and drug risk behavior for HIV infection

There exists little in-depth formal research information on the sexual behavior and attitudes of people in Lao PDR, especially of the minority groups. In the study of ARHS 2000 (22) on sexual intercourse before marriage and among unmarried adolescents and youth is still low, with only 8 percent reporting ever having sexual intercourse. Most of the first experiences of sexual intercourse were unprotected (79%), among close friends (80%), and took place at home (63%). Male

respondents reported much more frequent sexual encounters than female respondents (12% vs. 4%). The higher sexual activity of young men compared to young women was reported also in the Vientiane Sexual Behavior and Condom use Survey 1999 (75% vs. 5%). In both surveys it was found that the less educated respondent was more likely to engage in early sexual relations (<19 years). Sensitivity of sexual matters shows in communication of these issues, with 67 percent of adolescents have never discussed about sexual matters before marriage with anybody (12).

In addition, Drugs are already included to some extent in HIV/AIDS considerations in Lao PDR even though most drug use in Lao PDR is inhaled or swallowed, rather than injected, but this can also be linked to unsafe sex by the resulting impaired judgement. In the year 2000, UNDCP with LCDC conducted a survey (23) on drug abuse among 2,631youths (1,333 males and 1,298 females)in 13 schools in Vientiane. The most popular drug used (life time use) by youths aged between 12 - 21 years old were solvents (5.4%), methamphetamine (Ya Ba) (4.8%) and abuse of prescribed drugs (4.7%). The data also showed that the most susceptible age group was between 15 to 19 years old. Males (25.1%) reported a higher percentage of drug use at some point during their lifetime compared to females (9.9%). The most popular drugs used among males were " Ya Ba" (8%), followed by solvents (7.6%) and abuse of prescribed drugs (4.7%). The average age of first drug use was 15.7 years. The percentage of current drug use varied from 5.3% for males to 2.1% for females. The main reasons given by Ya Ba users were family problems (20.4%) followed by expected benefits such as being happy (16.0%). Peer group, bad feeling and other reasons were the main reasons of drug use among females. Similarly in the study on HIV risk among Ya Ba abusers in northern Thailand (24),

found that: in the first 10 weeks of intended one year recruitment, 264 participants (77%) reported having used "Ya Ba", 236 (69%) were current users (used in last 3 months) and 167 (49%) were admitted for detoxification from " Ya Ba". The major route of administration has been inhalation; some use by injection was found. Of current users, 5 percent injected, 97 percent inhaled and 1.7percent both inhaled and injected and 16 percent reported recent heroin injection. 44 percent also reported recent heroin or opium use, 66 percent of injectors shared injection equipment. 9.8 percent of current and 10.8 percent of lifetime "Ya Ba" users were HIV sero positive. 89 percent of lifetime users are current users. Current " Ya Ba" users were mainly Thai and hilltribe adolescents (50% < 21 Yrs), unmarried (65%), sexually active (82%), had paid for sex (51%), did not use condoms with wives (86%) or lovers (68%) and 27 percent reported having had an STD. 26 percent reported past HIV testing; of those reporting a last negative test, 23 percent were seropositive on this admission.

2.3.4 Attitude toward condom and condom use

The access to condoms and research on related issues has made significant progress in recent years. The research on condom use has been dealing with knowledge about condoms both as a means of protection against STIs including HIV, as well as a means of contraception. The source of knowledge and the purchasing place for condoms have been asked, attitudes and beliefs towards condom use has been another crucial study aspect. The research has observed gender, age, rural/urban, professional and educational disparities.

There appears to be a gap between knowledge and practice regarding condom use: what people know and they apply this knowledge in their lives may diverge considerably. The baseline Survey of 1999 on KAP regarding STIs in Luang Prabang and Oudomxay Provinces observed the same pattern in all study areas: the percentage of people who knew about condoms was much higher (68-78%) among those who said they had ever used one (22-26%) (25).

In the Adolescent Reproductive Health Survey 1999 (22), it was found that although there is widespread recognition that condoms protect against STIs, there also seems to be an unwillingness to use them. One reason given for not using condoms was the belief that a man will not have sexual satisfaction if he uses a condom. There seemed to be less awareness about condoms as means of contraception, and rural men particularly had less knowledge of the dual benefits of condom use. Reasons for not using condoms were given in the Vientiane Sexual Behavior and Condom Use Survey (27) as trust in partner (40%), lack of availability (27%), and dislike of condoms (13%). More women complained about the lack of availability than men, and men were more likely to have ever used condoms than women. It appears also that some persons, especially men, tend to play with AIDs. They claim to be unafraid of it because 'we all die someday'. Some young people, both men and women, report that young men may not use condoms because it is a challenge to not use protection. Some commercial sex workers commented that young people are most at risk of not using condoms as this group feels 'the most powerful, healthy, young and untouchable from disease and virus'. Alcohol is also like to be a factor for non-use among young people .

Accordingly, the study on multiple condom use and decreased condom breakage and slippage in Thailand (26). There found that there is compelling evidence that male condoms effectively prevent transmission of sexual pathogens, including HIV-1. Condom breakage and slippage reduce this effect. They measured rates of condom slippage and breakage during heterosexual commercial sex in northern Thailand of 7,594 condom examined in 4,734 client visits (5,040 sex acts), breakage was noted in 1.8 percent of single condom use (49.3% of acts), as compared with 0.2 percent with two condoms (49% of sex acts), and no breaks with more than two condoms (1.2% of sex acts). These breakage rates declined from 5.9 percent in a similar 1992 study in which 2.8 percent of sex acts were with more than one condom used at a time. Slippage occurred in only 0.1 percent of sex acts.