

CICRED'S SEMINAR

**Vulnerability towards HIV and network support.
An exploratory survey within couples in Thailand**

Sophie Le Cœur, Wassana Im-Em, Eva Lelièvre

**Vulnerability towards HIV and network support.
An exploratory survey within couples in Thailand**

Sophie Le Cœur*, MD, PhD

Wassana Im-Em⁺, PhD

Eva Lelièvre*, PhD

* Institut national d'Etudes Démographiques, Paris, France

⁺ Institute for Population and Social Research, Mahidol University

Study supported by the Agence Nationale de Recherche sur le Sida. ANRS1259

Paper presented at the

Interregional Seminar on Reproductive Health, Unmet Needs and Poverty:

Issues of Access and Quality of Service

Pathumwan Princess Hotel, Bangkok

Chulalonglorn University, November 25-29, 2002

CICRED

Introduction

The concept of vulnerability

HIV infection is closely related to sexuality and reproductive health. It is a sexually transmitted infection, thus affecting both partners in a couple ; it is transmitted to their children, thus jeopardizing their progeny.

Although risk behaviors for HIV have been extensively studied in Thailand ^{1,2,3,4}, we still do not know the circumstances or combination of circumstances which favor (or protect against) HIV infection in an individual's life history.

In this study, we define as “vulnerability” the circumstances which favor HIV infection, circumstances less biological and behavioral than socio-cultural, psychological and economical. In order to identify vulnerable situations, we will take into account not only the intrinsic characteristics of the individuals such as sex, age, psychological profile (risk perception, self esteem, projection in the future), but also the global context in which he/she lives and which drives him/her to get exposed to the risk of acquiring HIV during his/her life.

This global context— which includes the family situation, the educational context, the professional, economic, and residential situation, as well as the health/reproductive health situation—, evolves during the course of life, and individuals are going through more or less marked phases of vulnerability that we will try to identify and analyze.

The life-event history approach

In life-events history approach⁵, individual life histories are considered as a continuum of events of various nature involving family, housing, occupation, health, etc. To better understand the complex interactions between these factors –themselves influencing demographic and social behaviors–, specific tools are needed. Within the life-event history approach, individual life histories are considered as a dynamic factor that affect the dependent variable, e.g. vulnerability to HIV^{6,7}. The underlying hypothesis is that specific life events or life-event sequences may be the precipitating factors that account for increasing or decreasing an individual's risk behavior, and that the resulting changes in vulnerability can not be predicted from social, demographic or psychological status alone.

The role of health events has been rarely considered in life-event history studies. In our study, health history and reproductive health will first be taken into account as a determinant of family, residential or occupational history. Then, we will examine the effect that poverty, unemployment,

and lack of solidarity network has on health or reproductive health problems including HIV infection.

HIV epidemic in Thailand

Thailand was the first Asian country affected by the AIDS epidemic in the late 1980s⁸. Among all Asian countries, it is by far the most hardly hit by the epidemic and over one million people have been infected so far⁹. The epidemic first developed among intravenous drug users, and then among sex workers and their clients⁸. As the epidemic matured, heterosexual transmission became the major route of infection in the general population and the first cases of mother-to-child transmission of HIV were reported in 1991^{8,9}.

However, considerable efforts have been invested by the government to curtail the epidemic. The Royal Thai Government responded quickly to the HIV/AIDS epidemic and implemented a multi-sectoral AIDS program in 1987. These efforts appear to have been successful to reduce not only the incidence of HIV in the general population but also the prevalence of other sexually transmitted diseases^{10,11}. The overall rate of infection in pregnant women now reaches about 1.8 percent nationwide¹².

Nevertheless, the number of AIDS cases and AIDS deaths will continue to increase for a number of years, reflecting earlier infection trends⁹. Most of the epidemic's demographic, economic, public health and social impact is still unknown as well as the strategies put in place by the affected families and communities^{10,13}.

In order to study the vulnerability to HIV infection and its impact on network support, we are combining a life-event history approach with an epidemiological (case/control) approach, to perform a **case-control life-event survey** comparing HIV-infected mothers and their partners with HIV-uninfected mothers and their partners.

Objectives

The objective of this pilot study is to evaluate the feasibility of the life-event history approach in the context of HIV in Thailand:

- develop and test a life-event history questionnaire including health and reproductive health history;
- define an appropriate study population and sample selection method;
- assess the acceptability of interviewing couples (each member separately);
- compare life-event history interviews with in-depth interviews.

Issues to be explored

1. To understand better the factors of vulnerability towards HIV. These factors include:
 - Individual history: family, education, occupation, residential, reproductive/sexual, and health;
 - Knowledge, perception of risk and access to information and services,
 - Emotional support and social solidarity networks,
 - Self-esteem and negotiating skills,
 - Representations of the future.
2. To investigate the consequences of HIV infection on the life of the individuals, couples or their families. Using a life-event history approach, it is possible to compare the life-events before and after HIV infection or HIV diagnosis and to identify the specific impact of HIV infection (or its disclosure) in terms of family disruption, employment, network disruption or creation and reproductive decisions.
3. To investigate the possible strategies that can be used by the affected families:
 - Access to health care,
 - Support for AIDS orphans,
 - Legal support,
 - Financial support,
 - Emotional, religious support,
 - Logistical support.

The role of the solidarity networks (family versus society) will be clarified. This information will provide helpful information to policy makers for the design of social strategies for HIV-affected families.

Methods

Population:

“Cases” (HIV-positive mothers) and their current husbands have been interviewed separately and compared to controls (HIV-negative mothers) and their current husbands.

The pilot study was performed in two sites: a non governmental organization for people living with HIV/AIDS in a rural village 30 km from Chiang Mai, in Chiang Mai province; and a mother-child hospital in Chiang Mai city.

In the rural site, respondents who had to have at least one child below 3 years old, were approached in the community by the head of the organization. They were provided with an appointment for the interview. Their participation was voluntary. They were explained about the study by the interviewers and asked about consent.

In the mother-child hospital, respondents were attending the hospital for a routine visit for their child and therefore were not expecting to be interviewed. For cases, potential respondents identified by their usual counselor were explained about the study, and were then introduced to one of the interviewers who would explain the study in more details, and if they agreed, they could either be interviewed the same day or provided with an appointment for a later time, even outside the working hours. Controls were approached by the interviewers while they were waiting for the immunization of their child. The interviewers explained to them the purpose of the study and the interview duration. Although some reimbursement was provided to the respondents at the end of the interview (transport/time reimbursement), money was never mentioned as an incentive to participate in the study.

Interview process

Two male interviewers interviewed male respondents and two female interviewers interviewed female respondents. The interviews of each partners were performed in two separate, private rooms. The respondents were told that their answers would be kept confidential, and that information would not be disclosed to anyone, in particular their partner. The interviewers also did not ask for names of the respondents.

The interviewers were all psychiatric nurses who, in addition to their general training in psychiatric counseling and psychotherapy received a 3-day training for these specific life-event history interviews and HIV/AIDS counseling.

The framework of the interview was a classical questionnaire, but all dated events or period of lives were recorded on a calendar-type of questionnaire (Figure 1), and therefore the interviewers had to

switch back and forth from the questionnaire to the calendar. The events or durations recorded on the one sheet calendar could easily be linked together and be visualized at a glance (Figure 1).

The interviewers first introduced themselves and the study objectives. Then they discussed the topics covered by the study: family life, residential life, education, occupation life and health history including reproductive life and HIV. They stressed the fact that the respondent was free to decline from answering any questions if he/she wanted to, that there were no good or bad answers, and that the interview was completely anonymous. Only after this introduction of the study was the consent to participate solicited.

In the first section of the interview, after asking the respondent's age, the interviewer continued by asking the status of the respondent's parents, the frequency of visits, date of separation or death, if appropriate. Then, the interviewers asked about the respondent's siblings. The next issue was about the marital life, where the interviewers asked for each spouse/partner of the respondent a number of questions to assess the duration and strength of the relationship, the degree of family integration, possible domestic violence, and reasons for separation, visits to commercial sex workers. The respondent was asked to grade his/her happiness in the course of his life, defining these periods by him/herself.

The second section of the interview focused on the respondent's places of residence since birth, as well as the co-residents in each place.

In the next section, the interviewers asked about education, and occupations (including extra-jobs) and the financial situation of the respondents (incomes, assets and debts).

The health history was then recorded, with a special focus on reproductive health including age and circumstances of the first intercourse and a complete contraceptive history, abortion and birth history (for women only).

Finally, HIV test history was reconstituted (date and results for the first and subsequent HIV tests). The topics explored were the following: risk perception of HIV infection, timing and circumstances of HIV infection, HIV results disclosure, couple communication/discussion about HIV, attitudes towards HIV-infected people, HIV stage, access to treatment, impact of HIV on reproductive choices, prevention of mother-to-child transmission and support from the family and the community.

Analysis of data

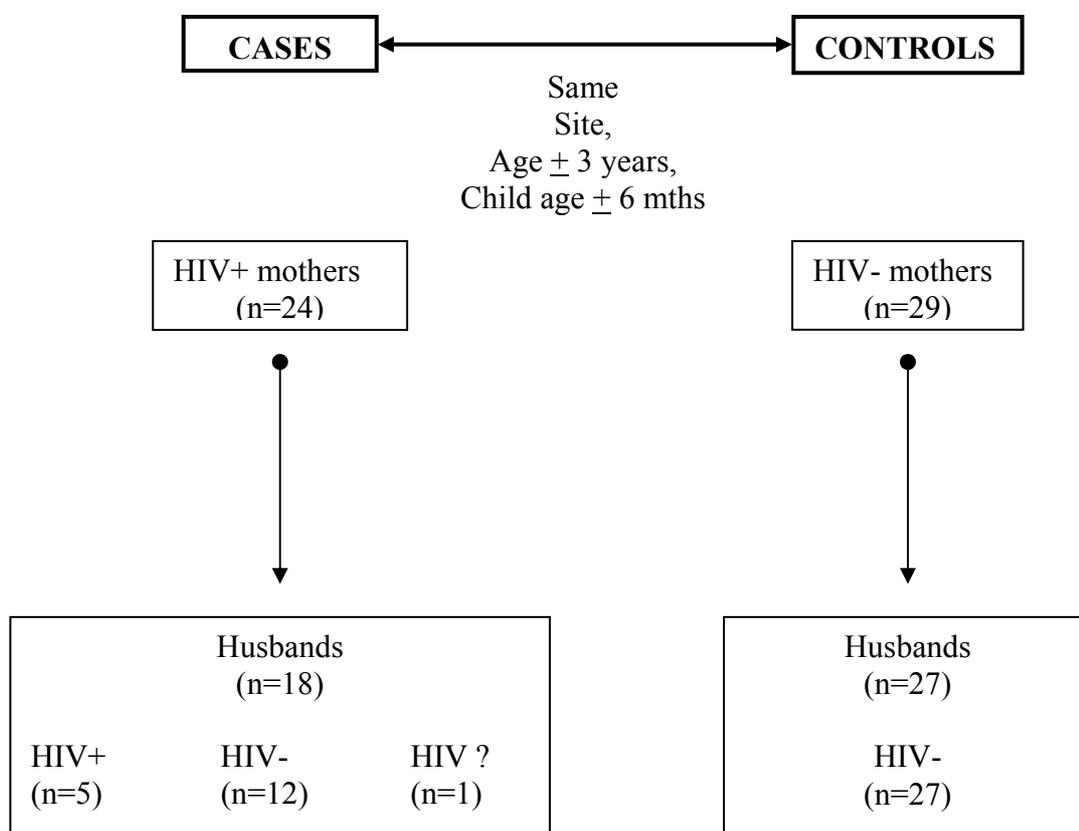
Life-event history studies the occurrence over time of one or more interacting demographic phenomena. It can also simultaneously involve a large number of individual characteristics, some of which may change over time. Thus the basic dimension of life event analysis is **time**, and the

sequence in which the various events occur. Various statistical software can be used to run an event history analysis such as SAS, SPSS or STATA. To date, only preliminary univariate analysis have been performed using SPSS version 11.0. The multivariate analysis taking into account time-periods is on going, but the results are not yet available.

Data collection process

Description of study population

A total of 98 respondents (45 couples and 8 individual persons) were interviewed. They were 53 women and 45 men. Eighteen respondents were interviewed in the rural site and 80 were recruited in the well baby clinic of the Mother and Child Health hospital. In terms of HIV serostatus, 29 individuals (5 men and 24 women) were HIV positive, 68 individuals (39 men and 29 women) were HIV negative and one man was of unknown HIV status. Women are our index cases of interest so we define cases as women living with HIV and control as women living without HIV. Our study population therefore includes 24 cases (HIV-infected women) and 29 controls (HIV-non-infected women) and 18 cases's husbands (5 HIV-infected men, 12 HIV non-infected men and one of unknown HIV status) and 27 controls' husbands (all HIV non-infected men).



Couple counselling

Couple counseling is very well established in Thailand. Among the couples interviewed, all women had been counseled and tested for HIV mostly during their antenatal visits. Only one male partner had not been tested for HIV, and most of the women and men were aware of their partner's HIV status.

Respondent acceptance rate

All cases approached agreed to be interviewed. For controls, about half of the couples declined participation, mostly because they were not expecting to stay at the mother-child clinic for an extended period of time.

Interview duration

The median interview duration was 45 minutes (range from 20 minutes to 1 hour 45 minutes). Interview duration was longer for cases (median: 1 hour) than for controls (median: 35 minutes) due to the higher number of spouses/partners, and more complicated lives.

Life events history reconstruction

The calendar questionnaire greatly helps the respondents remember/situate their life-events relative to others. The respondents were able to grade their happiness during different periods of their lives, and date/describe the most important life crises they have been through. These will be important events/periods to take into consideration in the analysis of vulnerability.

Poverty

We were able to evaluate the financial status of the respondents, through a set of indicators, such as their current income, the persons with whom they had to share it, the amount of loan/debt, the difficulties faced to reimburse it, their assets such as land, house, car, motorcycle, etc. In addition, the financial situation was describe throughout the life course, and the respondents were asked about possible financial crisis in their lives.

Reproductive health and HIV history

Respondents could speak without difficulty about their sexual and reproductive history, in particular the circumstances of their first intercourse (with whom, condom use). Contraceptive history was recorded for women only, because men were not able to remember it. Respondents did not appear to show any embarrassment when asked about their's/their partner's visits to commercial sex workers and responses were quite concordant within couples. Respondents could talk frankly about domestic violence and responses were also quite concordant within couples.

Finally, the life-event history approach allowed most of the cases to determine the period of time they acquired HIV infection. The answer, “I was infected through my first husband who died of AIDS later on” for example, can easily be translated in a year period. Similarly, respondents were able to date their HIV tests because the tests are usually linked with other life-events such as a pregnancy, a new job, or an hospitalisation.

Emotional distress

Some respondents were very emotional when recalling harsh/sensitive life events, such as domestic violence, HIV infection, or when speaking about their future or the future of their children. The interviewers who had been trained in psychotherapy and HIV/AIDS counselling were able to handle the situation, but referral for social/psychological support was sometimes needed.

Couple interviews

Because of the presence of the child, one of the parent was interviewed while the other was taking care of the child. Since each interview was taking about one hour, the parents had to stay about two hours at the hospital in addition to their regular visit. In two cases, after waiting for their spouse’s interview, the husband refused to be interviewed. Refusals may introduce selection bias in the sampling procedure.

After the interviews, both partners were coming back home together, each of them knowing that they had disclosed sensitive events of their lives . Even if they knew that their own life histories had not been revealed to their partners, the possibility of adverse consequences of these interviews on the couple interaction such as subsequent domestic violence, cannot be ruled out.

Moreover our assumption that we will learn about the women’s risk of HIV through their husband life-event history was not verified since most women had been infected during a previous union and not by the current partner who was the one who was interviewed.

Therefore, since the assessment of responses concordance within couples was not an objective purpose of our survey, we think that life–event history of couples may not be appropriate to evaluate vulnerability to HIV and its impact.

Respondents evaluation

Overall, respondents found the interview pleasant. The interaction with the interviewer was of high quality, close to a one to one conversation and more flexible than a formal questionnaire. The respondents were able to deny responding to the questions that they were not feeling comfortable to answer to. Some respondents were worried about confidentiality issues and had to be reassured by the interviewers.

First descriptive results

We are providing some descriptive results from our pilot survey. Caution should be taken in interpreting these results. Because of its small size and of possible selection bias in the sampling procedure, our study population is not representative of the general population of HIV-infected women and their husbands in Thailand. However, the differences observed between cases and controls, men and women are consistent with our knowledge about the HIV epidemiology, and confirm that our approach is relevant.

As shown in Table 1, the study population was composed of young adults (median age 29), living in couples, with a mean number of 1.4 children. Thirty nine percent of them had already lost at least one of their parents and 20% had lost one of their siblings. Twenty two percent of their parents had divorced.

Most couples were poor with a median income of 4,000 Bahts per month (US \$100), with half of the population earning less than the minimal monthly wage. Thirty two percent of the respondents thought their income were not sufficient. The median amount of loan was 50,000 Bahts (US\$ 1250) and 61% of the respondents said it would be difficult or very difficult for them to reimburse it.

The prevalence of domestic violence in this population in any union was 29%. Consistent with data on sexual behavior in Thailand, the median age at first sex was 18 years in both sex. Seventy four percent of women and 44% of their spouses were tested for HIV because of pregnancy. Eight percent of women have had an abortion although it is illegal in Thailand. Overall, 28% of the respondents said that they discuss about HIV with their spouse at least once a month, 50% at least once a year, and 27% never. Interestingly, the concordance of response within couple was poor (data not shown).

Table 2 compares the respondent's socio-demographic characteristics between cases and controls and between their husbands. The median age of the cases and the controls as well as the age of their husbands were not statistically different. As expected, husbands were older than women. Except for the number of life crisis which was statistically significantly higher in cases than in controls, cases and controls did not differ for most of the basic socio-demographic variables. More differences were seen between husbands. Husbands of cases had a significantly higher number of residence changes than husbands of controls ($p = 0.051$) which probably shows their increased instability in life. The fact that the husbands of cases have a significantly lower amount of loan than the husbands of the controls ($p = 0.051$) is difficult to interpret and needs to be confirmed on a larger sample. Finally, the husbands of the cases tend to have a lower education level than the husbands of the controls ($p = 0.066$).

Table 3 compares the family events related to parents and siblings. Except the mean number of siblings which was significantly higher for cases than for controls ($p=0.006$), all other variables such as history of parent's death, parent's separation or sibling's death did not differ significantly. Overall family disruption during childhood will be compared in further analysis.

Table 4 compares the circumstances of the first sexual relationship and of the first union. Although the median age at first sex did not differ, the first sex partner was significantly less often the husband or the future husband for cases than for controls ($p=0.009$). Also, husband of cases were less likely to use condom at first sex than husband of controls ($p=0.01$). The median amount of bride price tend to be lower for the cases and their husbands but the difference was not statistically significant. Similarly, the percentage of first union involving a bride price tend to be lower for cases compared to controls.

Table 5 compares the marital life of the respondents. The mean and median number of spouse was significantly higher in the cases than in the controls ($p=0.002$), and the same was true for their husbands ($P=0.03$). The distribution of lifetime spouses was also significantly different for cases and controls ($p=0.002$). The number of separation was therefore obviously higher in the cases than in the controls. Husbands of cases were significantly more likely to have sex with commercial sex partners while living with the respondent than controls ($p=0.01$), and the trend was the same (although not statistically significant) before marriage. This may relate either to a more risky sexual life or to sex outside the union because the current partner was HIV positive. History of spouse death was obviously significantly more frequent in cases than in controls because of AIDS related death ($p=0.006$). Although physical violence and sexual violence were more frequent in cases than in controls the differences were not statistically significant.

Table 6 presents the data related to HIV infection and HIV testing. The median age for first HIV testing did not differ between cases and controls. The median age at contamination was 23 years old in the cases. It could not be calculated for their husbands because only three of them were able to date their infection. The circumstances of HIV testing did not differ between cases and controls most of them being tested during pregnancy.

Conclusion: learnings from the test

The life-event history approach is particularly appropriate to study vulnerability and network support in the context of HIV infection. It allows to explore, in one very comprehensive quantitative survey, several relevant and interactive issues such as family disruption, marital life, domestic violence, education, occupation, mobility, poverty, reproductive health and health history, and their possible association with HIV infection.

The case-control approach is also necessary. Indeed, in the absence of a control group, hasty conclusions could have been drawn with regards to vulnerability. For example, the prevalence of family disruptions such as parents separation or death, which could be considered as a vulnerability factor, is not significantly different in cases and in controls. Therefore only a careful comparison with appropriate controls allows to draw any conclusions.

The results from our preliminary analysis already indicate some vulnerability factors/indicators to HIV such as higher mobility, lower education level, complicated marital life, sex debut with partners other than the spouse, and absence of condom use at first sex. However, these results should be considered with caution and can not be generalized. A larger survey using the same methodology on a sample of 200 HIV infected mothers and 200 controls is planned. The current husbands will not be interviewed because of logistical issues and potential for couple disruption. A group of partners of HIV-infected mothers (not included in the sample) will be interviewed instead.

Figure 1: Life-event history calendar questionnaire : Exemple

| SECTION 1 | | | | | | SECTION 2 | | SECTION 4 | SECTION 6 | SECTION 7 | | |
|-----------|-----|--------------------|--------------|----------|-----------|--------------------|----------|-----------|----------------------|------------------------|---------|---------|
| Year | Age | Family Events | | | | Place of Residence | | Life | Reprod. Health | HIV TEST/HIV INFECTION | | |
| | | Parents & siblings | Marital life | Children | Happiness | District | Province | Crisis | 1st Mens/ 1st Sex | Tests/ INF | Reasons | Results |
| 1 | 2 | 3 | 4 | 5 | 6 | 7,1 | 7,2 | 11 | 13 | 14,1 | 14,2 | 14,3 |
| 25_ | 0 | | | | | | | | | | | |
| 25_ | 1 | | | | | | | | | | | |
| 25_ | 2 | | | | | | | | | | | |
| 25_ | 3 | | | | | | | | | | | |
| 25_ | 4 | | | | | | | | | | | |
| 25_ | 5 | | | | | | | | | | | |
| 25_ | 6 | | | | | | | | | | | |
| 25_ | 7 | | | | | | | | | | | |
| 25_ | 8 | | | | | | | | | | | |
| 25_ | 9 | | | | | | | | | | | |
| 25_ | 10 | | | | | | | | | | | |
| 25_ | 11 | | | | | | | | | | | |
| 25_ | 12 | | | | | | | | | | | |
| 25_ | 13 | | | | | | | | | | | |
| 25_ | 14 | | | | | | | | | | | |
| 25_ | 15 | | | | | | | | | | | |
| 25_ | 16 | | | | | | | | | | | |
| 25_ | 17 | | | | | | | | | | | |
| 25_ | 18 | | | | | | | | | | | |
| 25_ | 19 | | | | | | | | | | | |

Table 1. Overall characteristics of the study population

| | All respondents | |
|--|-----------------|---------------|
| | N=98 | Range |
| Median age (years) | 29 | 17 - 46 |
| Mean number of spouses | 1.6 | 1 - 8 |
| Mean number of separations | 0.5 | 0 - 7 |
| Mean number of children | 1.4 | 1 - 3 |
| Median number of residences | 3.4 | 1 - 11 |
| Median income (Bahts) | 4,000 | 300 - 30,000 |
| Median amount of loans (Bahts) | 50,000 | 300 – 700,000 |
| Mean number of life crisis ¹ | 1.4 | 0 - 6 |
| Median age at first sex (years) | 18.0 | 13 - 32 |
| Median age at first HIV test (years) | 26.0 | 15 - 44 |
| Median age at HIV infection (years) ² | 23.0 | 15 - 31 |

| | % | 95% Confidence Interval |
|--------------------------------|-----|-------------------------|
| History of Parent's death | 39% | 29% - 49% |
| History of Sibling's death | 20% | 13% - 30% |
| History of Parent's separation | 22% | 15% - 32% |
| History of Spouse's death | 13% | 7% - 21% |
| History of Domestic violence | 29% | 20% - 39% |
| History of Child death | 3% | 1% - 9% |
| History of Abortion | 8% | 4% - 15% |

1. Any significant crisis such as love, financial, family, health, death, or work-related crises.

2. Based on 26 HIV infected individuals

Table 2. Socio-demographic characteristics of respondents according to their type (cases or controls and their gender).

| | Women | | Husbands | |
|--------------------------------|-------|----------|-----------------|-----------------|
| | cases | controls | cases | controls |
| Total number | 24 | 29 | 18 ¹ | 27 ² |
| Median age (years) | 28.0 | 29.0 | 32.0 | 30.5 |
| Median number of residences | 3 | 2 | 4 | 3* |
| Median monthly income (baht) | 2,220 | 3,000 | 4,400 | 5,000 |
| Median amount of loan (baht) | 4,500 | 17,000 | 2,500 | 50,000* |
| Median number of life crisis | 2 | 1** | 1 | 1 |
| Median number of health crisis | 0 | 0 | 1 | 0 |

| | N | % | N | % | N | % | N | % |
|-----------------------|----|------|----|-----|----|-----|----|------|
| HIV positive | 24 | 100% | 0 | 0% | 5 | 28% | 0 | 0% |
| Age distribution | | | | | | | | |
| up to 24 | 5 | 21% | 7 | 24% | 2 | 11% | 3 | 11% |
| 25-29 | 11 | 46% | 10 | 34% | 4 | 22% | 8 | 30% |
| 30+ | 8 | 33% | 12 | 41% | 12 | 67% | 16 | 59% |
| Level of education | | | | | | | | |
| Up to primary | 11 | 46% | 13 | 45% | 10 | 56% | 6 | 22%* |
| Secondary | 5 | 21% | 11 | 38% | 3 | 17% | 10 | 37% |
| Higher than secondary | 8 | 33% | 5 | 17% | 5 | 28% | 11 | 41% |

^{1, 2}Five out of 18 husbands of the cases (28%) were HIV positive, 12 (67%) were HIV negative, and 1 (6%) did not know HIV status. Six cases were either separated or widow and their husbands therefore could not be interviewed. Two control's husbands refused to be interviewed.

* Significantly different, P value < 0.05

** Significantly different, P value < 0.01

Table 3. Events related to parents and siblings

| | Women | | Husbands | |
|---------------------------|-------|----------|----------|----------|
| | cases | controls | cases | controls |
| Total number | 24 | 29 | 18 | 27 |
| Median number of siblings | 3 | 3 | 4 | 3 |
| Mean number of siblings | 2.9 | 3.7** | 3.9 | 3.6 |

| | N | % | N | % | N | % | N | % |
|--------------------------------|----|-----|----|-----|----|-----|----|-----|
| History of parent's death | 9 | 37% | 12 | 41% | 7 | 39% | 10 | 37% |
| History of parents' separation | 8 | 33% | 5 | 17% | 4 | 22% | 5 | 18% |
| Parents still living together | 11 | 65% | 14 | 66% | 13 | 72% | 18 | 75% |
| History of siblings' death | 4 | 17% | 6 | 21% | 4 | 22% | 6 | 22% |

* Significantly different, P value < 0.05

** Significantly different, P value < 0.01

Table 4. Circumstances of first sexual relationship and first union

| | Women | | Husbands | |
|--|-------|----------|----------|----------|
| | cases | controls | cases | controls |
| Total number | 24 | 29 | 18 | 27 |
| Median age at 1st sex (years) | 28.0 | 29.0 | 32.0 | 30.5 |
| Median bride price for 1st marriage (bath) | 6,000 | 20,000 | 6,750 | 10,000 |

| | N | % | N | % | N | % | N | % |
|--|----|-----|----|-------|----|-----|----|-------|
| First sex's partner | | | | | | | | |
| Spouse/future spouse | 17 | 71% | 28 | 97%** | 5 | 28% | 6 | 23% |
| Other (eg. boyfriend, friend, others) | 7 | 29% | 1 | 3% | 13 | 72% | 20 | 77% |
| Use any method to prevent STD/pregnancy at first sex | | | | | | | | |
| yes | 12 | 50% | 13 | 45% | 2 | 12% | 12 | 46%** |
| no | 12 | 50% | 16 | 55% | 15 | 88% | 14 | 54% |
| Circumstances meeting 1st spouse | | | | | | | | |
| Leisure place | 1 | 4% | 4 | 14% | 1 | 6% | 1 | 15% |
| Not leisure place | 23 | 96% | 25 | 86% | 17 | 94% | 17 | 85% |
| First marriage involved bride price | 13 | 54% | 20 | 69% | 10 | 61% | 14 | 70% |

* Significantly different, P value < 0.05

** Significantly different, P value < 0.01

Table 5. Events related to spouse(s) and children

| | Women | | Husbands | |
|-----------------------------|-------|----------|----------|----------|
| | cases | controls | cases | controls |
| Total number | 24 | 29 | 18 | 27 |
| Median number of spouses | 2 | 1** | 2 | 1** |
| Mean number of spouses | 1.8 | 1.2** | 2.7 | 1.2** |
| Median number of separation | 0.5 | 0** | 1 | 0* |

| | N | % | N | % | N | % | N | % |
|--|----|-----|----|-------|----|-----|----|------|
| Distribution of lifetime spouses | | | | | | | | |
| 1 | 8 | 33% | 23 | 79%** | 6 | 33% | 22 | 81%* |
| 2 | 13 | 54% | 6 | 21% | 6 | 33% | 5 | 19% |
| 3-8 | 3 | 13% | 0 | 0% | 6 | 33% | 0 | 0% |
| Reasons for separation ¹ | | | | | | | | |
| Spouse had other partner | 4 | 17% | 2 | 7% | 6 | 33% | 1 | 3%** |
| Husband/Self had sex with CSW ² | | | | | | | | |
| Before living with respondent | 17 | 71% | 14 | 48% | 13 | 72% | 15 | 56% |
| While living with respondent | 11 | 46% | 4 | 14%** | 5 | 28% | 5 | 18% |
| History of spouse's death | 9 | 37% | 2 | 7%** | 2 | 11% | 0 | 0% |
| Ever experienced physical violence with spouse | 10 | 42% | 7 | 24% | 5 | 28% | 7 | 26% |
| Ever experienced sexual violence with spouse | 5 | 21% | 4 | 14% | 1 | 6% | 2 | 7% |

¹. Other reasons include problems related to sexual relationship, money, cannot get along, lack responsibility, and alcoholism/gambling.

². Women were asked if they think that their husbands visited commercial sex workers before living with them and while living with them. Husbands were asked if they visited commercial sex workers before living with their wives and while living with them.

* Significantly different, P value < 0.05

** Significantly different, P value < 0.01

Table 6. Events related to HIV infection and HIV test

| | Women | | Husbands | |
|------------------------------|-------|----------|----------|----------|
| | cases | controls | cases | controls |
| Total number | 24 | 29 | 18 | 27 |
| Median age at first HIV test | 26.0 | 24.0 | 28.5 | 26.0 |
| Median age at HIV infection | 23.0 | | | |

| | N | % | N | % | N | % | N | % |
|-----------------------------------|----|------|----|-----|----|------|----|------|
| Ever had HIV blood test | 24 | 100% | 28 | 97% | 18 | 100% | 21 | 81%* |
| Reasons for having HIV blood test | | | | | | | | |
| Prenatal or Antenatal testing | 18 | 75% | 22 | 79% | 8 | 50% | 14 | 64% |
| Health problem | 2 | 8% | 0 | 0% | 2 | 12% | 0 | 0% |
| Voluntary testing | 3 | 12% | 1 | 4% | 2 | 13% | 3 | 14% |
| Other (school/work or other) | 1 | 4% | 5 | 18% | 4 | 25% | 5 | 22% |

* Significantly different, P value < 0.05

** Significantly different, P value < 0.01

REFERENCES

- ¹ Sittitrai W, Phanaphak P, Barry J, Brown T : Thai sexual behavior and risk of HIV Infection. Bangkok : Institute of Population Studies/Thai Red Cross Society Program on AIDS ; 1992.
- ² Nelson KE, Celentano D, Suprasert S, et al. Risk factors for human immunodeficiency virus infection in young men in northern Thailand. JAMA 1993,270 :955-960.
- ³ Nagachinta T, Duerr A, Suriyanon V, et al. Risk factors for HIV-1 transmission from HIV-seropositive male blood donors to their regular female sex partners in northern Thailand. AIDS 1997,11 :1765-1772.
- ⁴ Beyrer C, Celentano DD, Suprasert S, Sittitrai W, Nelson KE, Kongsu B, Go V, Phanupak P Widely varying HIV prevalence and risk behaviours among the ethnic minority peoples of northern Thailand. AIDS Care 1997;9:427-39
- ⁵ Courgeau D, Lelièvre E, 1996. Changement de paradigme en démographie. Population 3;645-654.
- ⁶ Courgeau D, Lelièvre E, 1989. *Analyse démographique des biographies*, Manuel de l'INED, PUF, 268p.
- ⁷ Manton KG, Singer B, Woodbury MA. Some issues in the quantitative characterization of heterogeneous populations. In Trussell J, Hankinson R and Tilton J : Demographic applications of event history analysis. Clarendon Press, 1992.pp8-38.
- ⁸ Weniger, B.G. et al. The epidemiology of HIV infection and AIDS in Thailand. AIDS. 1991, 5(suppl.2) : S71-S85.
- ⁹ World Bank. Thailand's response to AIDS: building on success, confronting the future, 2000, pp 68.
- ¹⁰ Nelson, K.E. et al. Changes in sexual behavior and a decline in HIV infection among young men in Thailand. New England Journal of Medicine. 1996(335) : 297-303.
- ¹¹ Hanenbert, R.S. et al. Impact of Thailand's control programme as indicated by the decline in sexually transmitted diseases. The Lancet. 1994(344) : 243-245.
- ¹² Ministry of Public Health, Thailand, Division of Epidemiology. Sentinel serosurveillance, June 2002.
- ¹³ Surasiengsunk S, Kiranandana S, Wongboonsin K, Garnett GP, Anderson RM, van Griensven GJ. Demographic impact of the HIV epidemic in Thailand. AIDS. 1998 May 7;12(7):775-84.