# Study of AIDS Prevention Strategies in a High-Risk Population

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**Abstract:** *Although Acquired Immune Deficiency Syndrome is not yet epidemic in Thailand, there is evidence that AIDS is spreading to Asia. Because the disease is most likely to first establish itself among high risk groups, it is important to develop educational programs to promote accurate knowledge of AIDS and preventive health behavior. This study will test three educational strategies among high risk group to develop cost-effective AIDS-prevention education. The study will be of benefit to others who are interested in AIDS education strategies. (Thai J Obsted Gynaecol 1989;1:11-19)*

**Key words:** AIDS prevention, high risk population

In January,1988 the Ministry of Public Health in Thailand received reports of a cumulative number of 240 cases of infection with the AIDS virus, HIV (human immune deficiency virus). Two months later, that number had nearly doubled to 450. Although increased surveillance activities probably account for some of the increase, it is clear that the spread of AIDS is occurring rapidly.

In 1984, the first case of Acquired Immune Deficiency Syndrome in Thailand was diagnosed in a Thai male homosexual. Since then, the spread of the infection has been similar to that of North America and Europe. Homosexual men are most at risk followed by intravenous drug users and much less by female prostitutes and blood donor recipients. However, given the large sexual services in Thailand and the large number of foreign tourists who patronize this industry, it has been predicted that the infection will soon spread more rapidly among the general heterosexual

population through female prostitutes[1,2].

Establishments offering sexual services have existed in Thailand as long as there has been a cash economy. Outside Bangkok these establishments are of two basic types; brothels and massage parlors. Brothels are located in both rural and urban settings and charge inexpensive fees while massage parlors are found in provincial capital towns and are more expensive. The sexual services offered in both establishments are the same but the massage parlors attract a more affluent out-of-town clientele. Despite their name, massage parlors, in fact,are brothels where a variety of sexual services are offered at negotiated and set prices. Sexual intercourse commonly takes place in massage parlors.

Khon Kaen town in the heart of Northeast Thailand is typical of most provincial towns in Thailand. Because Khon Kaen is the regional center for the northeast it is somewhat larger than the average town and attracts both Thai and foreign professionals for conferences and development projects. Khon Kaen is also promoted as a tourist site and there are two jet flights from Bangkok to Khon Kaen daily. There are three massage parlors there.

These three massage parlors were selected for an applied research study to test the effect of educational interventions about AIDS for AIDS-preventive behavior. Massage parlors are a more appropriate site than brothels because sex workers in massage parlors are more independent and better educated than the prostitutes in brothels. In addition, the massage parlor worker is more likely to come into contact with out-of-town carriers of HIV than brothel workers.

The long-range objective of this study is to increase AIDS-preventive behavior through an increase in the understanding of how AIDS is spread, how dangerous AIDS is and how infection can be prevented.

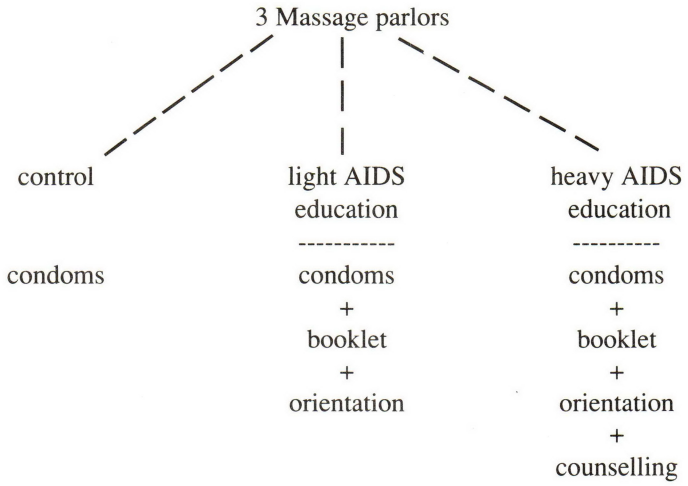
The short-term objectives are to test which of two educational interventions is the most effective to increase the awareness of AIDS and to increase the use of condoms among the sample of massage parlor workers.

## Materials and Methods

The three Khon Kaen massage parlors provide convenient locations for a controlled experimental design involving two treatments and a control (Figure A). The massage parlors in Khon Kaen are typical of those found generally in Thailand. There is a cocktail lounge on the ground floor for customers to sit and ponder their choice of one of the 20 to 30 masseuses who sit behind a glass partition facing the lounge area. The AIDS education was conducted shortly before opening time in the room where the masseuses sit.

The two treatments were designed to compare light and heavy educational interventions. The light treatment consisted of group orientation on AIDS, a slide show, an educational brochure and providing 20 condoms per masseuse per week. The heavy treatment contained all of the above inputs plus counselling. The counselling was conducted with small groups of masseuses during a pe-

**Figure A.** Research design




| | Time (months) | | | | | |
|---|---|---|---|---|---|---|
| AIDS education | 1 | 2 | 3 | 4 | 5 | 6 |
| heavy | OX | X | O | X | X | O |
| light | OX | | O | | | O |
| control | O | | O | | | O |

O denotes self-administered questionnaires filled out
X denotes educational interventions provided

riod of three months after the baseline survey. The baseline questionnaires were used as a basis for the content of the counselling. Areas of weak knowledge were reviewed and a strong emphasis was placed on the importance of AIDS prevention by using condoms. The sessions were conducted by medical staff of the Family Planning Unit of the Department of Obstetrics and Gynaecology, Faculty of Medicine, Khon Kaen University.

Originally it was planned to conduct individual counselling in a nearby clinic. Appointments were made for each worker in the heavy treatment massage parlor. The strategy had to be modified, however, when very few of the workers kept their appointments. It was decided to conduct intensive education in small groups (three to four individuals) in the massage parlor.

The control group received only condoms but no education. However, it is very likely that workers in the two experimental parlors had an opportunity to share their knowledge with workers in the control. The study did not attempt to document contamination of the control.

Short questionnaires were filled out

by all the massage parlor workers at the beginning of the project. The same questionnaires were applied three months and six months later. Only those workers who filled out the baseline questionnaire were asked to fill out questionnaires in the two follow-up rounds (post-test 1 and post-test 2).

In all three massage parlors, the workers were offered free blood tests to screen for HIV infection and syphillis. Although the screening was not intended as part of the research assessment, this service was offerred to gain the cooperation of the managers of the massage parlors. All workers chose to have the blood tests and all three managers of the massage parlors cooperated fully with the investigators. One aspect of the managers' cooperation may have affected the experiment, however. During the period of study there were several news, reports on the threat of AIDS in Thailand. This resulted in a decline of customers at the massage parlors. Thus, the manager of the parlor receiving the heavy educational treatment posted signs saying that all his workers were AIDS free (based on the results of the pre-test blood screening). While this announcement might result in an increase of patrons it could also have the effect of reducing condom use because of a perception of no risk. This potential bias should be kept in mind when interpreting the results and in designing a similar AIDS educational program.

Including preparation, the study required ten months. The actual implementation took place over six months, from July to December, 1987. All the clinical, counselling, data collection and analysis were conducted by staff of the Family Planning Unit of the Department of Obstetrics and Gynaecology, Faculty of Medicine, Khon Kaen University.

## Results

Through the excellent cooperation of the managers of the three massage parlors and the workers themselves, the study was successfully carried out. In all, 311 self-administered questionnaires were properly completed and returned to the investigators.

Because no new massage parlor workers were admitted to the study after it began, there is only attrition to the original total of 130 workers from the three parlors (Table 1). By the first post-test of questionnaires (three months later), 104 workers from the original sample remained and, by six months there remained 77 workers, an attrition rate of 20% at three month and 40% at six months. This attrition was equal for the three establishments.

The mean age of the workers is 24 for all three groups and ranges from 18 to 35 years. The panel of respondents who were present for all three rounds had been working at the massage parlor an average of one year to 18 months. It may be significant that the control sample had a shorter duration of employment than the two experimental groups. The range in duration of employment is exceptionally wide, from 6 to 41 months in the control, 6 to 121 months in the light treatment and 5 to 51 months in the heavy treatment group.

**Table 1** Selected background characteristics of Khon Kaen massage parlor workers

| Items | Control | | | Educational treatment | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Light | | | Heavy | | |
| | | post-test | | | post-test | | | post-test | |
| | pre | 1 | 2 | pre | 1 | 2 | pre | 1 | 2 |
| Number of respondents | 42 | 30 | 22 | 40 | 34 | 24 | 48 | 40 | 31 |
| Mean age (yrs) | | | 24 | | | 24 | | | 24 |
| Age range (yrs) | | | 19-35 | | | 18-38 | | | 18-30 |
| Mean duration of employment (mos) | | | 12 | | | 18 | | | 16 |
| Range in duration of empleyment (mos) | | | 6-41 | | | 6-121 | | | 5-51 |

The top half of Table 2 presents results of AIDS awareness measurements over the three rounds. The percent who had heard of AIDS in August 1987 was over 80% in each group and increased to 100% after one round in the experimental and two rounds in the control. During the time of the research, there had been several noteworthy cases of AIDS reported in the media with daily installments in newspapers and television. Thus, it is difficult to attribute the early knowledge gains in the experimental areas to the educational intervention.

A more refined measure of AIDS knowledge is the series of twelve multiple choice questions that quizzed the respondents on information presented in the group orientation and the AIDS booklet (Fig. B). In the control, knowledge remained constant at 67% correct response whereas the heavy treatment group increased from 67% to 92% correct response. The light treatment showed a very slight gain in knowledge. The question most frequently answered incorrectly concerned the causative agent (a virus, not a bacteria) and the typical symptoms of AIDS.

The bottom half of Table 3 shows the (self-reported) respondent behavior over the duration of the study. The average number of episodes of sexual intercourse per week range from seven to eleven. There is some indication of a decline in frequency of coitus in the control group which began at a higher level than the experimental parlors. By the time of the second post-test, all three groups averaged eight episodes of sexual intercourse per week.

In this study, the workers were advised to use condoms in order to prevent AIDS, since reducing the number of sexual partners is not a realistic option for prostitutes. In this regard the educational intervention had a distinct impact.Condom use increased from 58%

**Table 2** Selected AIDS knowledge and preventive behavior measures among Khon Kaen massage parlor workers

| Measure | Control | | | Educational treatment | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Light | | | Heavy | | |
| | | post-test | | | post-test | | | post-test | |
| | pre | 1 | 2 | pre | 1 | 2 | pre | 1 | 2 |
| Ever heard of AIDS (%) | 81 | 90 | 100 | 85 | 100 | 100 | 85 | 100 | 100 |
| Mean AIDS knowledge test score (12 = max.) | 7.7 | 8.6 | 8.5 | 8.6 | 9.6 | 10.4 | 8.1 | 10.7 | 11.2 |
| Mean number of episodes of sexual intercourse in past week | 9.7 | 10.7 | 8.1 | 6.7 | 7.4 | 7.7 | 7.0 | 8.0 | 7.6 |
| Percent of episodes of sexual intercourse in which a condom was used in past week (%) | 44 | 49 | 48 | 51 | 66 | 64 | 58 | 67 | 72 |

pre: pre-test
Post-test 1: at three months
post-test 2: at six months

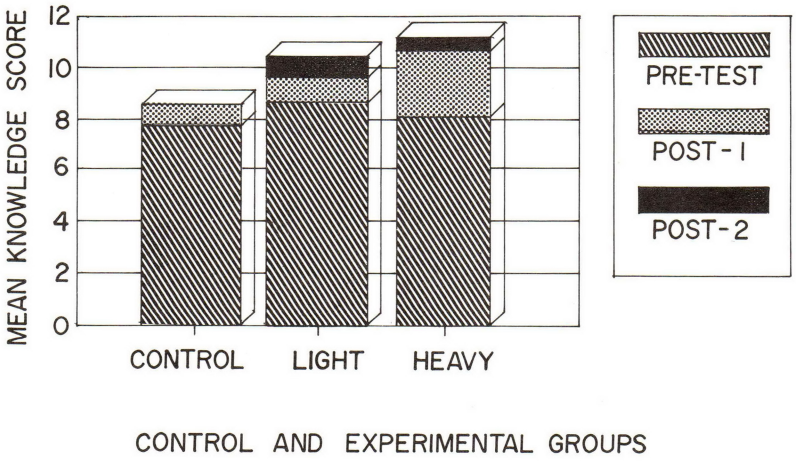



**Fig. B** Mean AIDS knowledge score by experimental and control

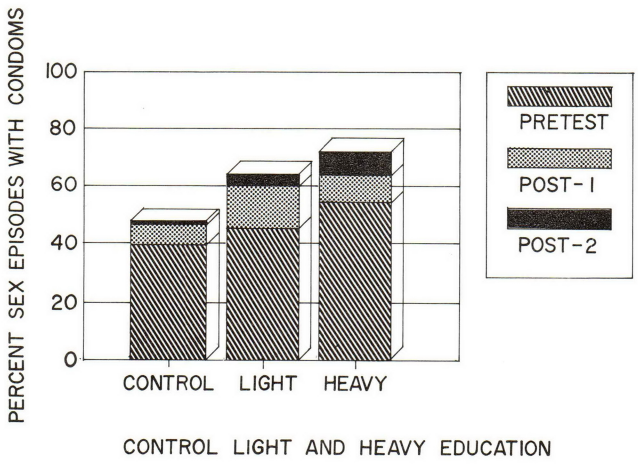



**Fig. C** Percentage of sexual episodes with condoms by control and experimental

to 72% of sexual episodes in the heavy treatment group and from 51% to 64% of sexual episodes in the light treatment. There was no corresponding increase in the control group which remained under 50% protected episodes for the duration of the study (Fig. C).

The counselling sessions provided the researchers with important insights into the perceptions, fears and motivations of the massage parlor workers. The following is a summary of comments on worker and client perspectives.

Reasons why clients do not want to use condoms (as expressed by the massage parlor workers):

1) Reduction of sexual feeling.

2) Condoms are tight and uncomfortable.

3) No need to use condoms if the worker is negative for HIV infection.

4) Clients prefer oral sex without a condom.

Reasons why the massage parlor workers did not want to use condoms:

1) The masseuse does not want to risk losing the client or a tip by suggesting him use a condom.

2) Condoms without a lubricant are uncomfortable for the masseuse.

3) Some kinds of condoms break easily.

4) Clients are mostly Thais and, therefore, of low AIDS risk.

5) The masseuse did not care whether she became infected or not; the need to make money is too great.

The results of the blood test did not find any HIV infection among the masseuses but there was a relatively high level of syphilis infection (Table 3). The fact that syphillis remains prevalent is an indication that increasing condom use to 70% of sexual episodes has only moderate impact on preventing STD.

## Discussion

With a disase as deadly as AIDS, it seems that a rational response is to minimize one's exposure to infection[3,4]. However, rational health behavior depends on perceived risk, competing pressures against preventive health behavior

**Table 3** Blood screening test results among Khon Kaen massage parlor workers

| Blood tests | Control | | | Educational treatment: Light | | | Heavy | | |
|---|---|---|---|---|---|---|---|---|---|
| | | post-test | | | post-test | | | post-test | |
| | pre | 1 | 2 | pre | 1 | 2 | pre | 1 | 2 |
| Syphillis (% positive) | 17 | 12 | 16 | 10 | 3 | 14 | 8 | 8 | 6 |
| HIV (% positive) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

and lack of power to take action. Although the questionnaire and counselling sessions did not systematically probe these issues, it is possible that the workers perceive little risk of AIDS because none of their co-workers have been infected. Also, economic pressure to maximize income militates against urging a client against his inclination to use a condom. Finally, in many cases the masseuse is young and of low education and, thus, lacks the assertiveness to protest if a client does not use a condom.

A follow-up study to this reseach is investigating these and other barriers to AIDS preventive behavior. Nevertheless, from the results of the present study the following points emerged:

1) Sexual worker turnover is high (40% at six months) and this suggests that educational interventions need to be one time only events and repeated over a short period of time.

2) It is possible to raise AIDS awareness and knowledge levels to a peak within three months and these will be maintained through at least six months.

3) The light education approach with a group lecture, slide show and brochure was just as effective in increasing knowledge levels as the heavy educational approach which added small group counselling.

4) To increase condom use, however, the heavy educational approach was more effective than the light educational approach.

5) Both light and heavy educational approaches were distinctly more effective in increasing condom use than no education at all.

6) Condom use must be increased to much higher levels than observed in this study if significant reduction of STD (and the risk of AIDS) is to be achieved.

7) Conducting blood screening can give the massage parlor worker and her client a false sense of security about freedom from the risk of AIDS. One rea-

son condoms are not used more is because the worker and her client know that she is not infected.

8) The poor quality of some brands of condoms are a barrier to their use.

9) The economic incentive and a sense of hopelessness among the workers are still important barriers to greater AIDS preventive behavior.

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