



**THE EFFECTIVENESS OF A HEALTH EDUCATION
PROGRAM ON THE DEVELOPMENT OF AIDS PREVENTIVE
BEHAVIORS AMONG FIRST YEAR FEMALE STUDENTS OF
THE PRIVATE VOCATIONAL COLLEGES,
RATCHABURI PROVINCE**

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สิทธิบัตร

จาก

บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล

**A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF SCIENCE (PUBLIC HEALTH)
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AIDS is a growing problem in every region of the world. It has direct and indirect negative effects on economic and social development. It also creates changes in our culture and population pattern. Thailand is a country severely affected by AIDS. This epidemic has spread to all age groups. Many female teenagers in particular are infected through sexual relations because they have no knowledge of the risk behaviors that result in their AIDS infection.

This quasi-experimental study's objective was to examine the efficacy of a health education program in developing AIDS preventive behaviors of first year female students attending vocational schools at the certificate level. The samples were 136 students, 69 of whom were in the experimental group, with 67 students in the comparison group. The Protection-Motivation Theory and social support theory were applied to the basic concept in organizing the five-session health education program for the experimental group. The health education program included collection of three data sets using questionnaires. The first was conducted before the program and the second and the third were done after the program. The data were examined using percentage and standard deviation. The mean scores, then were compared to find the differences within the group using the Paired samples t-test and the differences between the two groups using Student's t-test.

Following the program, the experimental group showed statistically significant changes in AIDS knowledge, perceived vulnerability, intention to conduct AIDS preventive behaviors, refusal skills and AIDS preventive behaviors in contrast to the comparison group. However, the study found no significant change in perceived severity of AIDS infection and expectation in self-efficacy.

In conclusion, this study shows that a health education program, in order to be effective in the development of AIDS preventive behaviors caused by sexual intercourse of female students, should focus on a rationale to affect the perceived severity of AIDS. Furthermore, in giving AIDS information to encourage the change of improper behaviors leading to sexually transmitted diseases and HIV/AIDS to those at risk, the intervention groups should be divided into small groups of the same sex and with similar characteristics. The reason for dividing into such groups is that they will be able to freely discuss and exchange their experiences within each group and they will be able to use the experiences from the learning through the discussion in their own lives.

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สถิตลา รุจนวงศ์ : ประสิทธิผลโปรแกรมสุขศึกษาเพื่อพัฒนาพฤติกรรมป้องกันการติดเชื้อโรคเอดส์ของนักเรียนหญิงระดับประกาศนียบัตรวิชาชีพชั้นปีที่ 1 สังกัดสำนักงานคณะกรรมการการศึกษาเอกชน จังหวัดราชบุรี (THE EFFECTIVENESS OF A HEALTH EDUCATION PROGRAM ON THE DEVELOPMENT OF AIDS PREVENTIVE BEHAVIORS AMONG FIRST YEAR FEMALE STUDENTS OF THE PRIVATE VOCATIONAL COLLEGES, RATCHABURI PROVINCE). คณะกรรมการควบคุมวิทยานิพนธ์ : รุ่งโรจน์ พุ่มรีว, M.P.H., Ph.D., ชานัญชัย ขามะรัต, B.Sc., M.S.P.H., สุรีย์ จันทรมณี, M.P.H., Dr.P.H. 131 หน้า ISBN 974-664-469-6.

โรคเอดส์เป็นปัญหาที่มีแนวโน้มเพิ่มมากขึ้นในทุกภูมิภาคของโลก ซึ่งก่อให้เกิดผลกระทบทั้งทางตรงและทางอ้อมต่อพัฒนาการทางด้านเศรษฐกิจและสังคม ตลอดจนการเปลี่ยนแปลงทางด้านประชากรศาสตร์และวัฒนธรรม ประเทศไทยเป็นประเทศหนึ่งที่ได้รับผลกระทบจากปัญหาโรคเอดส์อย่างรุนแรง โรคเอดส์ได้แพร่กระจายในประชากรทุกกลุ่มอายุ ส่วนใหญ่มีสาเหตุมาจากการมีเพศสัมพันธ์ โดยเฉพาะในกลุ่มวัยรุ่นหญิงที่ไม่ได้รับรู้ถึงพฤติกรรมที่ทำให้ตนเองเสี่ยงต่อการติดเชื้อโรคเอดส์ทางเพศสัมพันธ์

การศึกษานี้เป็นการวิจัยแบบกึ่งทดลอง มีวัตถุประสงค์เพื่อศึกษาประสิทธิผลของโปรแกรมสุขศึกษาในการพัฒนาพฤติกรรมป้องกันโรคเอดส์ของนักเรียนหญิงระดับประกาศนียบัตรวิชาชีพ ชั้นปีที่ 1 จำนวน 136 คน แบ่งเป็นกลุ่มทดลอง 69 คน กลุ่มเปรียบเทียบ 67 คน โดยประยุกต์ทฤษฎีแรงจูงใจเพื่อป้องกันโรคร่วมกับแรงสนับสนุนทางสังคมเป็นแนวคิดในการจัดโปรแกรมสุขศึกษาแก่กลุ่มทดลองจำนวน 5 ครั้ง เก็บรวบรวมข้อมูล 3 ครั้ง คือก่อนทดลองและหลังทดลอง 2 ครั้ง ด้วยแบบสอบถามที่ผู้วิจัยสร้างขึ้น นำมาวิเคราะห์ด้วยสถิติ ร้อยละ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน วิเคราะห์เปรียบเทียบความแตกต่างของค่าเฉลี่ยภายในกลุ่มด้วย Paired samples t- test วิเคราะห์เปรียบเทียบความแตกต่างของค่าเฉลี่ยระหว่างกลุ่มด้วย Student's t- test

ผลการวิจัยพบว่า ภายหลังการทดลองกลุ่มทดลองมีการเปลี่ยนแปลงด้านความรู้โรคเอดส์ การรับรู้โอกาสเสี่ยงของการติดเชื้อโรคเอดส์ ความคาดหวังในประสิทธิผลของการมีพฤติกรรมป้องกันโรคเอดส์ ความตั้งใจมีพฤติกรรมป้องกันโรคเอดส์ ทักษะการปฏิเสธ และพฤติกรรมป้องกันโรคเอดส์เพิ่มมากกว่ากลุ่มเปรียบเทียบอย่างมีนัยสำคัญทางสถิติ ส่วนการรับรู้ความรุนแรงของโรคเอดส์และความคาดหวังในความสามารถของตนเองในการป้องกันโรคเอดส์พบว่า ไม่มีความแตกต่างทางสถิติ

จากการศึกษานี้สรุปได้ว่า โปรแกรมสุขศึกษานี้มีประสิทธิผลในการพัฒนาพฤติกรรมป้องกันโรคเอดส์ทางเพศสัมพันธ์ของนักเรียนหญิงได้นั้น ควรเน้นด้านการรับรู้ความรุนแรงของโรคเอดส์อย่าง เป็นเหตุเป็นผล นอกจากนี้ในการให้ความรู้เพื่อปรับเปลี่ยนพฤติกรรมที่ไม่ถูกต้องเกี่ยวกับโรคติดต่อทางเพศสัมพันธ์และโรคเอดส์ควรจัดเป็นกลุ่มย่อย ที่มีลักษณะคล้ายคลึงกันและเพศเดียวกัน เพื่อให้กลุ่มได้ แลกเปลี่ยนประสบการณ์ที่สามารถนำไปใช้ประโยชน์ในชีวิตจริงได้

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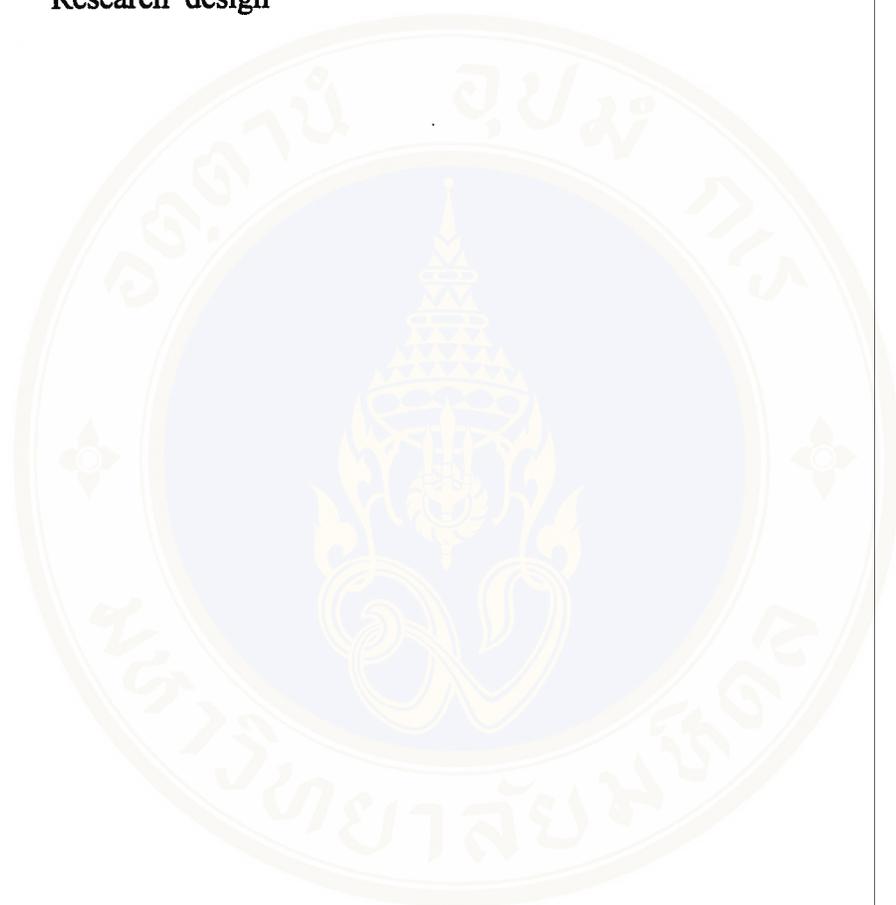
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CHAPTER I

INTRODUCTION

1.1 The significance of the problem

HIV infection is recognized as a serious contagious disease and the most important problem concerning public health situation because HIV infection is not only dangerous to health, but also has widespread social and economic impacts. Thus, it is a serious problem on which every country should pay particularly attention. Co-operation from both the public and private sectors is needed to fight this problem. The World Health Organization has expected in its report that at the end of 1998 there will be 33.4 million people with HIV infection and AIDS worldwide. The situation in 1998 was that 16,000 people were infected with HIV each day and 2.5 million died from AIDS. The estimation at the end of the year 2000 is that approximately 40-100 million people will be infected with HIV (Ministry of Public Health, 1999: 4).

In Thailand, the first AIDS patient was reported in 1984. After that the disease spread very rapidly. Many HIV infected persons have no obvious symptoms but they were disease carriers (Rojanapitayakorn, W., 1997: 123). These HIV infected persons could live a normal life in society without sickness caused by HIV about 7-10 years (Kantakamalakun, W., 1999: 14). Therefore, the number of present AIDS patients is the reflection of the HIV infected 5-10 years ago (Kunanusont, C., et al., 1999: 10-11).

From reports of Division of Epidemiology , Ministry of Public Health, from

the year 1984 to September 30, 1999, 125,968 AIDS patients were found and 34,496 were death. Of all the patient, 94,314 were males and 26,720 were females. The risk factor of most of the patients (82.7 percent) was heterosexual relationship. The highest age group (78.6 percent) was 20-39, the ratio between male and female between 1996-1999 were 4.62:1, 3.26:1, 2.90:1 and 3.7:1 respectively. In term of numbers of patients were found that there were 66,458 patients during the years 1984-1996, of which there were 25,151 patients in 1997, 23,013 in 1998 and 11,346 at the end of September 1999. The report showed that the reported numbers of AIDS patients were on the decrease each year. The expectation was that the numbers of AIDS patients and the deaths from AIDS in the reports were far below the real numbers because some victims did not use the health services or died at home.

In considering the expansion of the AIDS epidemic in sex and age groups from the health survey information of Thai citizens in 1997, the percentage contracting AIDS of the Thai female groups between 13 – 19 years and 20 – 34 years were higher than males in the same age group and the ratio were 1.1:0.6, and 1:0.6 respectively. The ratio of disease infection among the females in these age groups were higher than the female age between 35 – 44 and 45 – 59 which were 2:0.6 and 1.8:0.6 respectively (Pullchareon, W., 1999: 1,4)

Ratchaburi province is a province with high workloads in taking care of AIDS patients with more than 200–400 AIDS patients in its care per year (Chakrapan, S., 1999: 3). In considering reports of the AIDS situation in Ratchaburi from the year 1989 to September 30, 1999, it was reported that there were 1,947 AIDS patients, of which 1,595 were males and 352 were females. The risk factor in most cases (89.98

percent) were heterosexual relationship. The highest numbers of patients were in the age group of 20 – 39 years old which were 77.13 percent. The majority (60.6 percent) were workers or employees. The numbers of AIDS patients in the last 4 years (1996-1999) showed that the ratio between males and females were 5.37:1, 3.95:1, 3.15:1 and 4.5:1 respectively. It is manifested that the trend of AIDS infection in females was increasing. Especially in the age group of 15-19, the ratio of females' infection was higher than males and the ratio was 1.2:1. The information was in accordance with information at national level in the same age group with the ratio of female infection was higher than male infection at the ratio of 1.19:1. When the situation of the 15-39 age groups of the provincial level was studied, it was revealed that the male collective new patients was decreasing while the female collective new patients was increasing, specifically in the age group of 15-19 years old. The numbers of AIDS patients in Ratchaburi, being geographically categorized, found 351 AIDS patients in Muang District with 275 males and 76 females. The ratio was 3.61:1 and the major risk factor was the heterosexual relationship with 94.52 percent (Ratchaburi Provincial Health Office, 1999). The information concerning sex, age and risk factors of contacting AIDS were consistent with the information from Division of Epidemiology, Ministry of Public Health (1999 : 4).

From the 5th HIV Serosurveillance in Rathchaburi Report, June 1999 revealed that the secondary school male students (5.5 percent) had experiences in sexual relationship. The average age of first sexual experience was 14 years old. Moreover, the experienced students (53.3 percent) had sexual intercourse with girl friends. Although the frequency was not high, the general trend was the same as the other

group that they had sexual relationship with other women more than commercial sex women. They used condoms with commercial sex women every time but not always with other women. Among female secondary school students, the report showed that 2.2 percent had experiences in sexual relationship of which 80 percent had first sexual intercourse with boyfriends. Forty percent had sexual relationships on their own free will and 71.4 percent did not use condom in their first sexual intercourse and 1.6 percent had sexual relationship with several men, 0.3 percent had sexual intercourse in exchange for some benefits, 0.3 percent had become pregnant and 1.4 percent had had an abortion. Moreover, 0.5 percent of the students had sought medical tests for AIDS infection.

The important cause of AIDS epidemic problems in Thailand derives from sexual behaviors of the public, especially the heterosexual relationship. Although the reports of the number of AIDS patients in youths of age group between 15-19 years old (1.07 percent) is not high as a percent of all AIDS patients (Epidemiology Division: 1999) and the AIDS infection rate cannot be determined, it is quite clear that AIDS infection has been spread among people who have no direct risk behaviors. These women were infected with AIDS due to their ignorance (Suwakon, T., 1999: 2-3). The teenage groups are vulnerable due to their impetuosity, curiosity, and frolicsome nature or due to drunkenness or narcotic drug use (Jampraseart, J., 1997: 5). Furthermore, it is the natural characteristics of Thai teenagers that they love exploration, learning new things, seeking new adventures, being quick tempered, copying behaviors of their peers, being interested in the opposite sex and wanting to be outstanding. These characteristics of teenagers form their instinct to do the things

they are forbidden from doing or to do the things that people generally do . On this subject, Suraiprom, K. (1995: 115-119) and Dhongsiri, J. (1996: 66) found that vocational female students had sexual behaviors that were riskier for AIDS infection than general students. Also, the peer group had the most important influence on teenagers. The peer group had strong influences on their ways of thinking, attitudes and ways of life which led them to inappropriate sexual behaviors (Jamnuch, C., 1995: 138 and Sornsri, S., 1998: 102). It was found that youths in the group of 16-18 years old had riskier behaviors than the 13-15 years old group. In drinking alcohol and sexual relationships, Patavanich, U. (1995: d) found that both male and female students studying in the vocational-commercial sectors had lower knowledge than students in other sectors. In addition, the physical change and the changes in hormone levels in their bodies encouraged teenagers to have more sexual relationships out of wedlock. These behaviors were not safe and risky to contact sexual transmitted diseases and HIV/AIDS (Boonmongkol, P., 1999: 53).

Rojanapitayakorn, W. (1993: 348-351) stated that both male and female secondary school students in fertile ages were the risk group to AIDS infection because they had high sexual excitement. The effective measures in prevention and control of AIDS were giving education, information dissemination and health promotion in order to make them know and understand about AIDS. These were necessary measures not only in the form of disease prevention but also as an instrument to campaign against inactivity surrounding AIDS issue (Yuphawan, M., 1994: 197) and Suwan, P. (1998: 8) said that giving AIDS education alone was not the appropriate solution which would strong enough to change ones' behaviors

because there were many other factors affecting students' behaviors.

The National AIDS Prevention Committee had concentrated in roles, performances and duties of multiple organizations and agencies, specifically the Vocational Education Department, to have the responsibility in additional education on AIDS prevention and solutions in social development focusing on specific targeted groups. Moreover, because the most important risk factor was sexual intercourse, youth groups, therefore, should be targeted. This can be done by creating the characteristic building mechanism of the youth to control the behaviors that were the root causes of the problems (the National Plan of Action in Preventing and Solving AIDS problems, 1998-2001: 1-5).

The curriculum of health education relating to sex education of a vocational school was analyzed and it was found that the students at a certificate vocational education level were taught "the growth and sexual development and diseases" in the second semester of the first year. In the second semester of the second year the students were taught "General Diseases, Contagious Diseases and Sexual Transmitted Diseases". A teacher did teaching by way of giving lectures and the teacher believed that the students gained knowledge from this subject to a certain level. The teaching, however, did not create awareness to the dangers of AIDS and prevention activities that could be used in the real everyday life. The teaching, therefore, was not corresponding to the current epidemic situation of AIDS. This was caused by many factors, which were teachers and administrator's policy, confidence and teachers' ability and skills.

Pilot Study was conducted in August 1999 in the group of first year female

students in vocational certificate level. Twenty-seven students were asked to answer questionnaires by themselves (self-administered questionnaires). And focus group nine of them who answered questionnaires were selected for focus group.

Twenty-seven first year female students in the vocational certificate level were between 15-17 years of age, of them 62.96 percent received month expenses of approximately 2001-3000 baht during study, 33.33 percent stayed in a rented room or in a dormitory, 51.48 percent lived near night entertainment places, 70.37 percent answered that they had a boyfriend. It was further found that they had incorrect ways for prevention of risk sexual relationship behaviors i.e. 44.44 percent holding hands, 3.7 percent practicing embrace and hugging, 17.07 percent had gone with the boyfriends one by one, 7.31 percent had been with the boyfriends in a solitary place, 26.82 percent had gone to enjoy themselves in a nightly entertainment places, 12.19 percent liked to read an erotic book with sexually arousing pictures and narration, 59.25 percent had drunk alcohol and 50 percent tried the first time drinking of their own free will while 37.5 percent drank because it was a special occasion

Concerning AIDS, students did not have correct knowledge. 81.44 percent did not know that the most risk group for AIDS transmission was the heterosexual group. There were 74.08 percent believed that blood donation could cause AIDS transmission, and 55.56 percent did not know that the duration of the symptom of AIDS's appearance was based on how the patients took care of themselves. About sixty-seven percent believed that those with negative blood tests were safe and had no AIDS virus or had AIDS virus but could not spread the viruses to others. Thirty-seven percent believed AIDS was a curable disease. Eleven percent believed that washing

sexual organs with soap water or antiseptic solution could prevent AIDS transmission and 11.11 percent believed they were not at risk for AIDS transmission.

Concerning AIDS perception, it was found that students did not perceived correctly the severity of AIDS. The conclusion came from the following information. There were 14.81 percent who were not sure that having AIDS viruses in their bodies would cause many complications. There were not certain that when they have AIDS viruses in their bodies (51.85 percent) and they would be able to spread the viruses immediately.

There were 62.95 percent, not sure that the body touching between male and female could lead to sexual intercourse, 44.43 percent were not certain that drinking alcohol was a influence for sexual intercourse, 25.92 percent were not sure they could avoid being with their boyfriends in a solitary place, 22.22 percent were not certain that they would refuse if their peers asked them to see an X or R rated pornographic movie and 22.22 percent were not sure that enjoying themselves in the night entertainment places might end up with sexual intercourse and AIDS transmission.

In focus group with 9 female students, 7 students said they each of them had a boyfriend who was a student in another school and thought that their boyfriends understood them and had intimacy and warmth. There were 2 students who stated that having boyfriends might decrease their studying ability. All 9 had an attitude that “keeping virginity” was a good thing and made them to be valuable. Four of them had perception that “living together before marriage” was good for learning each other before making a decision to marry. All of them had a view that physical touching with boyfriends was a normal behavior and having sexual intercourse was a private activity

of each individual. Two of them gave answers that they had to take pills to prevent pregnancy. Concerning the questions on condom use, 5 answered that it was inconvenient because they did not prepare to have condoms for a sudden use and if they told their boyfriends to use a condom their boyfriends might think that they were not a good woman. Thus, they believed that using contraceptive pills was the better solution. When they were asked about AIDS infection that might be caused by sexual intercourse, 5 students answered that they were afraid of AIDS viruses transmission but they believed in their boyfriends that they were not promiscuous and would have no another woman. Six of them answered they consulted with their peers first and their parents were the second source when they had a problem with their boyfriends.

From statistics and information as mentioned above, the majority of the AIDS patients are in working and middle age people. However, when considering the progressing steps toward infection with disease, it is found that the starting points of risk behaviors often start at the teenage period and is practices until they become habits which are difficult to change in adulthood (Suwan, P., 1998: 12). Currently, we can clearly see that female students in vocational schools are the groups that are at risk of contracting HIV. It was considered that this group is a very important target group because the rate of AIDS virus contagion is on the increasing trend. The very vulnerable group is the age group of 13-19 years olds who are in the period of high sexual sensitivity, ignorance, without knowledge and experiences in safe sexual behaviors. Moreover, they have incorrect information and knowledge about AIDS, inaccurate of perception its dangers and the chance HIV infection. They also lacked of confidence in AIDS prevention and had incorrect AIDS preventive behaviors. Thus,

the researcher applied the Protection-Motivation Theory and social support theory to conduct health education activities for AIDS prevention among these first year female students.

1.2 Research questions

Will the health education program applying the Protection - Motivation Theory and Social Support Theory be able to help the first year female students in the vocational certificate level in Ratchaburi province, change in the following aspects?

1. AIDS knowledge
2. Threat appraisal
 - 2.1 Perceived severity of AIDS
 - 2.2 Perceived vulnerability to AIDS infection
3. Coping appraisal
 - 3.1 Self -efficacy in AIDS preventive behaviors
 - 3.2 Response efficacy of AIDS preventive behaviors
4. Intention to conduct AIDS preventive behaviors
5. Refusal skills with negotiation
6. AIDS preventive behaviors

1.3 Research objectives

General objective

The general objective is to assess the effectiveness of the program applying the Protection - Motivation Theory and Social Support Theory in affecting the AIDS

preventive behaviors of the first year female students in the vocational college level in Ratchaburi province.

Specific objectives

The specific objectives are to assess behavior changes of the first year female students in the vocational college in Ratchaburi province, after participating in the health education program which is applied the Protection-Motivation Theory and Social Support Theory as the following aspects:

1. AIDS knowledge
2. Threat appraisal
 - 2.1 Perceived severity of AIDS
 - 2.2 Perceived vulnerability to AIDS infection
3. Coping Appraisal
 - 3.1 Self - efficacy in AIDS preventive behaviors
 - 3.2 Response efficacy of AIDS preventive behaviors
4. Intention to conduct AIDS preventive behaviors
5. Refusal skills with negotiation
6. AIDS preventive behaviors

1.4 Hypotheses

1. After participating in the health education program, subjects in the experimental group will change their behaviors better than before the intervention in terms of :

- 1.1 AIDS knowledge
- 1.2 Perceived severity of AIDS

- 1.3 Perceived vulnerability to AIDS infection
- 1.4 Self - efficacy in AIDS preventive behaviors
- 1.5 Response efficacy of AIDS preventive behaviors
- 1.6 Intention to conduct AIDS preventive behaviors
- 1.7 Refusal skills with negotiation
- 1.8 AIDS preventive behaviors

2. After participating in the health education program, subjects in the experimental group will change their behaviors better than those in the comparison group in terms of :

- 2.1 AIDS knowledge
- 2.2 Perceived severity of AIDS
- 2.3 Perceived vulnerability to AIDS infection
- 2.4 Self - efficacy in AIDS preventive behaviors
- 2.5 Response efficacy of AIDS preventive behaviors
- 2.6 Intention to conduct AIDS preventive behaviors
- 2.7 Refusal skills with negotiation
- 2.8 AIDS preventive behaviors

1.5 Scope of the study

1. The research concentrated on the sample groups who are the first year female students in the vocational certificate level of 2 private vocational colleges , which are under the supervision of the private education commission. The two colleges are located in Amphor Muang, Ratchaburi province.

2. The researcher focused specifically on the AIDS preventive behaviors from

transmission through sexual intercourse.

3. The duration for conducting this research was from September 1999 to January 2000.

1.6 Assumption

1. The data and information gathering were done by using questionnaires to assess the AIDS knowledge, perceived severity of AIDS, perceived vulnerability to AIDS infection, self-efficacy in AIDS preventive behaviors, response efficacy of AIDS preventive behaviors, intention to conduct AIDS preventive behaviors, refusal skills with negotiate, and AIDS preventive behaviors. The answers received were be the absolute truth.

2. Information gathered by means of questionnaires to assess the AIDS preventive behaviors has been assumed to be the most appropriate method in this situation and environment.

1.7 Research variables

1. Independent variable is the health education program applying the Protection-Motivation Theory together with social support theory to develop AIDS preventive behaviors of the first year female students in the vocational certificate level

2. Dependent variables are

2.1 AIDS knowledge

2.2 Perceived severity of AIDS

2.3 Perceived vulnerability to AIDS infection

2.4 Self - efficacy in AIDS preventive behaviors

2.5 Response efficacy of AIDS preventive behaviors

2.6 Intention to conduct AIDS preventive behaviors

2.7 Refusal skills with negotiation

2.8 AIDS preventive behaviors

1.8 Research limitation

Media, publication and other forms of campaigns and public information disseminated by multi agencies could not be controlled for because the time period, when the health education program was organized for the experimental groups, coincided with the AIDS prevention campaign day (December 1, 1999).

1.9 Definitions

1. **Health education program** means a process in establishing learning activities or experiences using the applied Protection-Motivation Theory and Social Support Theory, which consist of lecturing, participation in activities, watching video-tapes, role play, real model, group discussion, demonstration, practicing lesson and information perception stimulating by teachers and parents. The activities are designed designed to develop the AIDS preventive behaviors of the female students for preventing themselves from AIDS epidemic.

2. **Effectiveness of a health education program** means the results of this organized health education program in changing AIDS knowledge, threat appraisal, coping appraisal, intention to conduct AIDS preventive behaviors, refusal skills and AIDS preventive behaviors of female students.

3. **Perceived severity** means the perception of female students on the

severity of AIDS that AIDS is a fatal disease which kills patients while they are still young and no any medicine or vaccine can cure it. Being infected with AIDS will have severely negative effects on the patients themselves, their families and society.

4. Perceived vulnerability to AIDS infection means the perception of the female students on the risk of AIDS infection that they are vulnerable to AIDS infection if they maintain risk behaviors, i.e. enjoying themselves in entertainment places, drinking of alcohol, watching X or R rated obscene materials, being together with a boyfriend in solitary place and sexually aroused touching.

5. Self -efficacy in AIDS preventive behaviors means the confidence of the female students in their ability in expressing believe or making decision in prevention of risking behaviors to AIDS infection.

6. Response efficacy of AIDS preventive behaviors means the confidence of the female students in the AIDS preventive behaviors that the behaviors can protect them from AIDS infection.

7. Intention to conduct AIDS preventive behaviors means the expression of the intention of female students to practice AIDS preventive behaviors. The expression can be in oral or in written form.

8. Social support means the assistance in supporting and reminding female students to practice AIDS preventive behaviors from teachers by giving information on AIDS risk behaviors to the students, and from parents/custodians by giving them love and care.

9. Refusal skills means the ability of the female students in refusing when being solicited by their peer group; and ability to offer better alternatives when

importuned or insulted, with losing good relationship. This ability will help them avoid being in a risky situation and conducting unwanted behaviors.

10. AIDS preventive behaviors means the behaviors of the female students to prevent the following AIDS risk behaviors through sexual intercourse:

10.1 decrease or quit activities that may lead them to sexual intercourse, as follows:

10.1.1 going to night entertainment places

10.1.2 alcohol drinking

10.1.3 watching arousing media

10.1.4 being alone with a boyfriend in a solitude place / touching sexually aroused

10.2 avoiding sexual intercourse

11. First year female students in a vocational level means female students studying in the 2nd semester of the first year in the 1999 academic year in vocational schools under the supervision of the Office of the Private Education Commission in Ratchaburi Province.

12. School A means the school where the researcher organized the health education program for the experimental group.

13. School B means the school where the researcher used as the comparison group.

CHAPTER II

LITERATURE REVIEW

This study applied the following concepts, theories and relevant research :

2.1 AIDS knowledge

2.2 Sexual behaviors of adolescent

2.3 Concepts and theories

2.3.1 Protection-Motivation Theory

2.3.2 Social Support Theory

2.3.3 Refusal skills

2.4 Relevant research

2.4.1 AIDS knowledge and sexual behaviors of adolescent

2.4.2 Protection- Motivation Theory

2.4.3 Social support theory

2.4.4 Refusal skills

2.1 AIDS Knowledge

2.1.1 Definition

AIDS (Acquired Immune Deficiency Syndrome) is caused by HIV (Human Immune Deficiency Virus). It is the final and most serious stage of HIV disease. It is characterized by signs and symptoms of severe immune deficiency (WHO : 1992,10).

AIDS was first recognized in 1981 and has since become a major worldwide epidemic. By leading to the destruction and/or functional impairment of cell of the immune system, notably CD4 T cells, HIV progressively destroys the body's ability to fight infection and certain cancers. This virus attacks the immune system and leaves the body vulnerable to a variety of life-threatening illnesses. These illnesses are often caused by common bacteria, yeast and viruses that ordinarily are not harmful.

After many studies had been undertaken, it has been generally accepted that virus is a descendant of Simian (monkey) immuno deficiency virus (SIV). All suggest that central Africa was the site of the evolution of HIV. There are currently two types of HIV: HIV-1 and HIV-2. Both are transmitted by sexual contact, through blood, and they appear to cause clinically indistinguishable AIDS. However, HIV-2 is less easily transmitted, and the period between initial infection and illness is longer than in the case of HIV-1 (Varachit, P., Ed., 1996 : 13).

2.1.2 Transmission

The AIDS virus can be spread in many ways. It can be transmitted by direct contact of bodily fluids from an infected person. The three common ways of transmission are (Rukrunthum, K., Ed., 1998: 22-29) :

- Sexual intercourse (blood to semen contact)
- Blood transfusions of infected blood and mother to child.
- The sharing of intravenous needles which may have contaminated blood in them.

There is a very low concentration of the virus in tears and saliva, so these cases of

transmission are very rare. There are no known cases of transmission through mosquitoes or any other animals.

Young adults (under age 25) are quickly becoming the most at risk age group, now accounting for an estimated 50 percent of all new HIV infections in the United States. Teenager and young people in the US and around the world need to take an active role in changing the course of the HIV/AIDS pandemic by adjusting their behaviors and attitudes toward the disease.

2.1.3 Symptoms of HIV infection

People who have HIV may feel and look completely well but their immune systems may nevertheless be damaged. It is important to note that once a person is infected, he/she can pass HIV on, even if he/she feels well. The more time passes, the more damage is likely to occur to the immune system. Also, some tumors or cancers can occur as a result of a damaged immune system and can cause damage to the brain and nervous system. These symptoms are not caused by HIV but by the opportunistic infections. To summarize, there are no symptoms of AIDS or HIV as such, until the immune system is so damaged that other infections begin to cause health problems which become increasingly difficult to treat. The only way to know whether a person is infected is to have an HIV antibody Test (Rukrunthum, K., Ed., 1998: 22-29).

Stage 1. No symptom: In the first stage of HIV, the symptoms don't show up. People can live with AIDS for years without knowing it, blood test will show antibodies after they formed to fight the AIDS virus, but it takes the antibodies three to six months

to show up. That mean if one takes a blood test right after one has sex, the virus may not be detectable for another three months.

Stage 2. Mild illness: This stage, the virus grows within the white blood cells and destroyed them and the body is weakened. Some symptoms which may appear are: they begin feeling tired and/or losing weight. They may develop a cough, diarrhea, fever or sweating at night. With HIV a cold is more threatening to them than to a person without the viruses.

Stage 3. Severe illness: By this time, the AIDS virus has nearly destroyed all the body's immune system. The body has great difficulty fighting off germs. Patients can also develop a rare type of cancer called Kaposi's sarcoma. AIDS does not kill anyone but other infections and cancer do.

2.1.4 Prevention

HIV can be prevented in many ways, but they are not always practiced. People become infected when they do not practice safe behaviors. That is why we have to extensively campaign on prevention.

AIDS is fatal, incurable and sexually transmitted disease. It is transmitted by both homosexual and heterosexual practices. Some sexual behaviors, such as intercourse, carry high risk of transmission which occurs more readily from an infected man to a women than from an infected woman to man.

It is well known that the best way to prevent AIDS infection is using condoms and has only one sexual partner. But that does not seem to happen in the real world.

Moreover, people should have blood tests before getting marriage in order to make sure that their partners do not have HIV. This can be done by having blood test at least six months before having unprotected sex with the husband / wife. Family planning also plays a role in preventing infection during pregnancy which is the third cause of infection after sexual intercourse and injections (Rojanapityakorn, W., 1993:10-17).

2.1.5 Treatment

There is no cure for AIDS at this time. However, treatments are available that can improve the quality of life of those suffering with infection.

Antiviral therapy suppresses the replication of the HIV infection in the body. Retrovir, also called AZT, is an antiviral agent most frequently used in treatment for AIDS.

Doctors and scientists are trying to develop the medicines and test them quickly enough to be available to AIDS patients. Many AIDS and HIV infected patients are volunteering to test the medicines. These medicines are experimented and are still being tested, so they may or may not slow down the spread of the virus. There are three parts in finding the cure which are:

1. to devise a drug that kill the HIV once it enter the body.
2. to create a vaccine that would prevent the disease.
3. to educate people worldwide on the dangers of AIDS and how to prevent the HIV infection.

So far there is no vaccine which can cure the HIV but in 1999 there are many

vaccines being tested around the world, including in Thailand. What we can do now is work to develop a vaccine that can cure all the AIDS infection and at the same time prevent it from further infection.

HIV is spreading among adolescent because they do not believe it can happen to them. Sixty-one percent of 14-21 year olds are engaged in sexual intercourse. The problem we have to deal with is the spreading of this disease among our generation. A small percentage of people who use condom still get HIV because:

1. misuse of condom
2. use of drug or alcohol which can lead to misjudgment or improper use
3. the condom could have defect

One should always remember to get test regularly. The safest way to avoid getting the disease is to abstain from sexual intercourse.

2.2 Sexual behaviors of adolescent

Adolescent time is the most important period of life in development in all aspects, i.e. physical, mental, emotional and social. Adolescent are curious and seek new experiences in life, specifically sexual experience due to their growing bodies are now similar to those of adults (Chanaim, S., 1994: 36-63). Moreover, they are in the process of reaching sexual maturity and soon sexual desires occur and being in their dreams and activities (Areepak, S., 1991: 587-646).

The need for sex and the feeling of wanting to have sexual pleasure divert their attention from family to persons outside the family. The feeling of wanting sexual love

and care of the opposite sex replaces the closed relationship with parents. In the eyes of female adolescents, they usually view sexual relationship as sacred love with a romantic life full of genuine warming care and closeness, which deserves giving and sacrifices. At the same time, in the eyes of male adolescent, sexual relationship is to satisfy erotic sexual drive which involves seeking sexual arousal and climax feeling in sex. Thus, such perceptions lead to having sex before due time even though they know what is right and wrong but they are pressured by the following influencing factors (Muuss, 1990: 236-238) which are:

1. sex hormones which result in the physical and mental change in their body, making them curious in sex and want to try sexual intercourse;
2. the subconscious mind of being a male and female is a push factor for them to have sexual intercourse and if in their childhood or present experience, they did not receive love and warm from their families the sexually love is sought for replacement;
3. from the rapidly changing society and the strongly influx of Western culture male and female have more freedom in getting acquaintance and in expressing their feelings.

Social interaction and relationships are important factors that influence learning after family, school, teacher and peers. These are important sources for learning, attitudes and perceptions which have an effect on adolescent's activities. Due to the perception in Thai society that sex is an inappropriate and taboo subject which cannot be discussed, adolescent cannot be discuss and consult with the suitable persons, i.e. parents, relatives or teachers but have to turn to get experience from media and peers. This can lead to

unwanted behaviors which are unwanted pregnancy, sexual transmitting disease infected and AIDS infected (Gorden, 1976: 142-145).

2.3 Concepts and theories

2.3.1 Protection Motivation Theory

Originally proposed to provide conceptual clarity to the understanding of fear appears. Protection Motivation Theory (PMT) shares the Health Belief Model (HBM)'s emphasis on the cognitive processes mediating attitudinal and behavioral change. Although the theory was initially formulated in 1975 (Rogers, 1975: 93-114), it is the revised version (Rogers, 1983: 153, 1984: 91-112).

Environmental and intra-personal sources of information about a health threat initiated two cognitive processes, threat appraisal and coping appraisal. The threat appraisal process evaluates the factors that increase or decrease the probability of making the maladaptive response. The maladaptive action can be a behavior that could be enacted, such as beginning to smoke, or it could be a current behavior such as not wearing a seat-belt. Variables that increase the likelihood of the maladaptive response are intrinsic rewards (bodily pleasure) and extrinsic rewards (social approval). Factors reducing the probability of the maladaptive response are the assessed severity of the threat and perceived vulnerability to the threat. Fear arousal influences perceived severity but has only an indirect effect on the eventual behavior enacted. The total threat appraisal is an algebraic sum of the variables that increase and decrease the maladaptive behavior likelihood.

In addition to evaluating threat, the individual also makes a coping appraisal. This consists partially of judgements about the efficacy of a prevention response that will avert the perceived threat (response efficacy) plus the assessment of one's ability to successfully initiate and complete the adaptive response (self-efficacy). The self-efficacy component is crucial to the successful avoidance of the threatening situation (Bandura, 1977: 191-215, 1986; Beck and Frankel, 1981: 204-217). An important feature of PMT, the explicit role of personal mastery has been neglected in virtually all expectancy-value theories (Rogers, 1984). Thus, the implication is that the existence of an effective alternative to the maladaptive health behavior is not sufficient; one must also believe himself or herself capable of carrying out the prevention regimen. It should be noted that an individual's sense of self-efficacy is conceptually independent of the 'barriers' referred to in the HBM. Thus, a person with a strong sense of self-efficacy might easily overcome any barriers (inconvenience, expense), while a person with a weak sense of self efficacy might be overwhelmed by the same barriers. Self-efficacy influences not only the initiation of the coping response, but also the amount of energy spent and the person's persistence in the face of obstacles (Bandura, 1982: 122-147).

Response efficacy and self-efficacy evaluations are factors increasing the probability of making the adaptive response. Decreasing that likelihood are response costs. Response costs may consist of inconvenience, expense, unpleasantness, difficulty, complexity, side effect, disruption of daily life, and overcoming habit strength (Rogers, 1984: 104). Coping appraisal is totaled from a sum of the efficacy components minus any costs with the adaptive response.

This indicates that threat appraisal and coping appraisal are combined to form protection motivation. As an intervening variable, protective motivation initiates, sustains and directs behavior. A coping response produced by protection motivation may be an explicit behavior (beginning an aerobic exercise program) or the inhibition of an action (ceasing to smoke). As an intervening variable, protection motivation may be measured by a variety of methods. However, an assumption of PMT is that it is most appropriately assessed by behavioral intentions.

In addition, the concepts of self-efficacy theory were applied in organizing the health education program for the first year students so that they would see the benefits of AIDS prevention behavior, having intention and readiness to cooperate in the process of strengthening their own capacity in prevention, first of all, of sexually transmitted diseases risk behaviors.

The appeal of the self-efficacy theory to health behavior researchers is that Bandura proposes that one's level of self-efficacy is not fixed. Four principle sources of information can be used to modify self-efficacy. These four sources of information are:

1. Performance accomplishment (previous experiences with the particular task)
2. Vicarious experience (watching other people perform a task)
3. Verbal persuasion
4. Physiological state, such as being nervous, tense, or relaxed.

Bandura notes that of these four sources of information, performance attainments have the greatest impact on a person's level of self-efficacy (Bandura, 1977 : 358 and Shannon, et al., 1997: 358).

2.3.2 Social support theory

Social support involves people or groups of people organizations who provide assistance to others. Social support can help individuals begin to continue healthy behaviors, and it can help them feel better about themselves and their lives. Research indicates that social support can play a role in maintaining and promoting good health for some people.

The following is four types of social support (Birch, 1998: 159) are as follows:

1. Emotional support: Demonstrating care or sympathy toward another person; listening to someone or just being there when a person needs a friend.
2. Appraisal support: Letting people know how they are doing, providing feedback, affirmation, praise, suggestion.
3. Information support: Being a source of knowledge, telling someone where he/she can get information.
4. Instrumental support: Providing a person with an object or a tangible resource, such as money, physical help, a book, transportation.

In this research, emotional support and information support were chosen in the intervention for the study group.

2.3.3 Refusal skills

At present, youth are under the influence of negative surrounding environment which causes problematic behaviors. They are in the age that is full of curiosity and want to try new experiences in life. At this period of life their peers are very influential to

them. Sometimes all these factors lead the youth to ignorantly perform inappropriate behaviors; or they are solicited to do something inappropriate of which they do not want to do but cannot refuse the pressure. At the same time, family is partially responsible for the problem. Thus, it is a must to strengthen adolescents so that they are capable enough to withstand the surrounding problem, to effectively apply life skills, to know and to understand themselves and others, to encourage the recognition of their self-efficacy, self confidence and self esteem, and to be able to take care of themselves and other as well as to be able to prevent health risk behaviors.

Refusal skills is an efficient communication and is a part of life skills. It was an ability of a person to refuse when being solicited by peers and to make an appropriate excuse when being importuned or insulted without damaging relationship. This refusal skills is a right to avoid unwanted behaviors that should be acceptable to everyone.

Life skills can be developed from experiences and learning in daily life from:

1. Home and family which is living together within the family.
2. Communities which are participation in community's activity, model from adult's practices and culture.
3. Schools which are training and learning both from formal and informal education.

Primary refusal skills can be trained and practiced (Department of Health: 1996 cited by Wattanamano, S., 1997: 58-59) . It consists of:

1. Refusal with strong expression both in voice's tone and body language to express determination;

2. Make reference to self sentiment which are more valid than rational.
3. Request his opinion and express appreciation when the refusal is accepted in order to keep good relationship.

If the refusal is not successful and the other party insists on, using importuning or insulting method. These skills can be used;

1. Confirm on refusal without giving reasons and get away;
2. Negotiation for a more appropriate activity as substitution
3. Delay or prolong the negotiation because the other party may change his mind.

Refusal skills training comprises of these stages and activities:

1. Realization stage consists of short presentation, case study, advocacy with the trained persons as the center of all activities;
2. Practical stage focuses on practicing by using a simulating situation.

In this research, refusal skills technique was applied with health activities so that the girl students would be trained to have experiences and confidence in refusing and avoiding unwanted activities that may lead to sexual intercourse and HIV/AIDS infection.

2.4 Relevant research

2.4.1 AIDS Research and sexual behaviors of adolescent

There are several research on various aspects of the AIDS and other sexual transmitted diseases prevention behavior, which can be summarized as the following.

Suraiprom, K. (1995: b) studied on factor related to AIDS prevention behaviors among students of upper secondary and vocational school and reported that the

students with increased knowledge on AIDS had adopted more prevention behaviors and therefore, had the risk behaviors decreased. And Kenkasumatra, S. (1996: b) studied on behavioral intention to AIDS prevention among northern hilltribe students and revealed that knowledge and perceived efficacy are directly related to intention to practice AIDS prevention behaviors. There are more obstacles in AIDS preventive behaviors of vocational students than those of normal students as reported by Howharn, C. (1996: 95) who studied on sexual behavior and factors associated to sexual intercourse among male adolescent students.

Kann, et al. (1997: 355) studied on young risk behaviors surveillance in United State and indicated that an important cause of sickness and death of adolescents was sexual intercourse (53 percent) and only half of them used condoms. This conclusion was supported by the study of Maswanya, et al. (1999: 185) studied on AIDS knowledge, perceived response of AIDS and reported sexual behaviors among students in secondary school and college in Tanzania found that 54 percent of adolescents had sexual relationship and 35 percent of the students who had sex had multiple partners and did not use condom every time engaging in sexual intercourse. These practices continued even though the students recognized these risk behaviors but they could not change their behaviors. Grunbaum, et al. (2000: 5) studied on young risk behaviors surveillance national alternative high school in the United States and found that a total of 87.8 percent of students had sexual intercourse, 45.9 percent of whom did not use a condom at last sexual intercourse.

Levy, et al. (1995: 28a) studied on correlates of HIV risk among young

adolescents in a large Metropolitan Midwestern Epicenter reported that sex, class and race had statistically important relationship to sexual relationship. In the same year Levy, et al. (1995: 145b) studied on impact of a school-based AIDS prevention program on Risk and protective behavior for newly sexually active students demonstrated that AIDS knowledge dissemination is very important because it resulted in more protective behaviors from sexual intercourse. It also had effect on intention to practice AIDS preventive behaviors; and the AIDS knowledge had delayed initiative to participate in sexual intercourse among students who never had such experience before. Moreover, it had increased AIDS preventive behaviors of the group which had experience in sexual intercourse as report by Hubbard, Giese & Rainy (1998: 243) who studied on a replication study of reducing the risk, a theory-based sexuality curriculum for adolescents. Epstein, et al. (1995: 1043) studied on determinants of intention of junior high school students to become sexual active and use condom implications of reduction and prevention of AIDS risk; and Thomson, et al. (1999: 357) studied on changes in HIV/AIDS education, knowledge and attitude among Scottish 15-16 years old also confirmed that AIDS knowledge is relevant to sexual behavior of high school students. These behaviors include the reduction of frequency of sexual intercourse, the reduction of sexual partners, and the increase in condom use. However, there were several studies which revealed contradictory result. Ford (1992: 393-413) studied on the AIDS awareness and sexual behavior of young people in the South- West of England argued based on the result of their work that level of AIDS knowledge had no relationship to self prevention from AIDS. Winwan, A. (1995: 115) studied on the relation of knowledge, attitude and risk

behavior regarding AIDS of high school students and revealed similar results from her work that there was no relationship between AIDS knowledge and AIDS protective behavior of adolescents. Even though they were being equipped with sufficient knowledge, they still practiced risk behaviors to AIDS (Kamolpetch, S., 1995: 221).

Further, it was reported that males and females with different risk behaviors had indifferent knowledge. Risk behaviors might not relate to the factor of knowledge alone but it also related to other social factors as well. This confirmed by Kamolwatananukul, S. and Sithipongsakul, S. (1998: 313-321) who studied on evaluation of knowledge and health behaviors concerning AIDS in secondary school students.

2.4.1.1 Adolescent and entertainment places

Howharn, C. (1996: 98) revealed that roaming in entertainment places had a statistically significant association with sexual intercourse, i.e. 40.8 percent of students enjoying themselves in entertainment places had experience in sexual intercourse and playing in entertainment places was an important cause of sexually risk behaviors. This was in conformed with Dhongsiri, J. (1996: 64) who studied on sexual risk behavior among adolescents. Moreover, Siriwatanakan, K. (1998: 115) studied on sexual behavior and factors predicting coitus among single female youth also reported that entertainment places were the places that satisfied needs of adolescents in seeking new experiences. When they consumed alcoholic drinks, resulted in drunkenness, they were prone to have inappropriate sexual behaviors and could lead to sexual intercourse. Sirmsri, S. and Chaiyapak, C. (1987: 301-313) who studied on relation of sexual behavior among adolescents revealed that roaming in entertainment places created chance of having sexual



intercourse.

2.4.1.2 Adolescent and alcohol drinking

Siriwatanakarn, K. (1998:115) stated that alcoholic drinking students had sexual experiences more than their peers in a statistically significant manner. The more prevalence of alcoholic consuming resulted in the more exposure to sexual intercourse. This was confirmed by Jariyavong, S. (1996: 128) who studied on factors affecting sexual behavior of youth workers in industrial factories. Suraiprom, K. (1995: 90) also found in her study that more vocational students drank alcoholic drink than students in ordinary school. Jacobson, Aldona & Beaty (1994: 10) studied on adolescents sexual behavior and associated variables and reported that there was relationship between alcohol consuming with promiscuity. The fact that students who drank alcohol had more than one sexual partners was report by Lowry, et al. (1994: 1106) who studied on substance use and HIV-related sexual behavior among US high school students. Hington, et al. (1990: 295-298) studied on belief about AIDS, use alcohol and drugs and unprotect sex among Massachusetts adolescents and reported that 31 percent did not use condom. Moreover, they had sexual intercourse earlier in their age than those who did not drink alcohol (Jacobson, Aldona & Beaty, 1994: 10).

2.4.1.3 Adolescent and watching sex arousing media

Chariyavong, S. (1996: 128) it was reported that the watching sexually arousing books or movies related to sex behaviors scores, i.e. those who frequently used these media would be more sexually active than those who did not or rarely use them. The same report stated that vocational students had AIDS risk sex behavior more than non-

vocational students. This is an important cause leading or encouraging adolescent to risk behaviors of sexually transmitted diseases (Patiyuth, K., 1998: 104). But, a contradict result was reported by Howharn, C. (1996: 99) that watching sexually arousing media had no relation with sexual relationship of adolescent.

2.4.1.4 Adolescent staying privately together and physical touch

Jamnuch, C. (1995: 135) studied factors related to sexual promiscuity value of young male and reported that staying together in a private place, touching, kissing and having sexual intercourse among adolescents were related to promiscuity. Hansen, Paskett and Carter (1999: 485-490) studied a standardized strategy for measuring interpersonal heterosexual behaviors among youth and revealed that important indicators for understanding and predicting unwanted behaviors of adolescents were hugging, holding hands, spending time together, kissing, lying down together, having the partner to put his/her hand under one's clothing, putting one's hand under someone else's clothing, being undressed with the showing of sex organ.

From all the studies mentioned above, it is quite obvious that the pushing factors for sexual behaviors of adolescents that lead to sexual intercourse and AIDS infections are attending entertainment places, drinking alcohol, watching sex arousing media, spending time together in a private place and sexually touching the other partner.

2.4.2 Research related to Protection -Motivation Theory in AIDS prevention

Diloksampanth, C. (1995: 133-134) studied on effectiveness of the health education program on AIDS prevention risk behavior with specific to sexual transmission

among female undergraduate students in Bangkok, Pachareon, A. (1996: a-b) studied on an application of the Protection-Motivation Theory's AIDS prevention behaviors among ninth grade male students, Jamprasert, J. (1997: b) studied on an application of the Protection-Motivation Theory and Social Support on AIDS prevention behaviors among women in frozen seafood factories, and Muangnaphor, S. (1999: d) studied on an application of the Protection-Motivation Theory of AIDS prevention behaviors modification among female vocational students, and reported that after experiments, the experimental group had gradually change their perceived severity , perceived vulnerability, self efficacy, response efficacy, intention and AIDS prevention behaviors more than the comparison group and in a statistically significant manner. In contrast, the work of Makmaitree, S. (1995: 117-128) who studied on an application of the Protection-Motivation Theory of AIDS prevention behaviors for development AIDS prevention behaviors among air technical training students and revealed that the perception of AIDS severity of both groups had no statistical difference. Nilabutra, S. (1999: d) studied on achievement of integrated teaching using the applied Protection-Motivation Theory on AIDS prevention among informal education students and reported that the two groups' perceived severity cannot be statistically pointed out. Moreover, Mackay (1992: 277) studied on effect of imagined scenarios on intent to use condom and found that there is no difference in the perceived vulnerability to AIDS infection of the two groups.

2.4.3 Research related to Social support

The studies of Diloksamphan, C. (1995: 134) and Jamprasert, J. (1997: b)

revealed that the receiving of social support from information given by the researchers and mental support by peer groups of the experimental group had changed in a positive way. While Jaikaew, S. (1997: a-b) who studied on effects of family support program on Adaptation to AIDS of HIV seropositive persons, reported that the experimental group receiving social support from family could participate in the prediction of their own adjustment to live with AIDS infected persons.

2.4.4 Research related to Refusal skills

Jamvithead, P. (1997: Abstract) studied on the application of life skills in health education program to enhance the prevention behaviors of sexually transmitted diseases and AIDS among secondary school students and reported that after experiments, the experimental group had gradually changed their refusal skills and developed more than the pre-experiments and than the comparison group in a very statistically significant manner . This was consistent with the study of Wattanamano, S. (1997: 127) studied on an application of life skills program on AIDS prevention among Mathayomsuksa 3 male students.

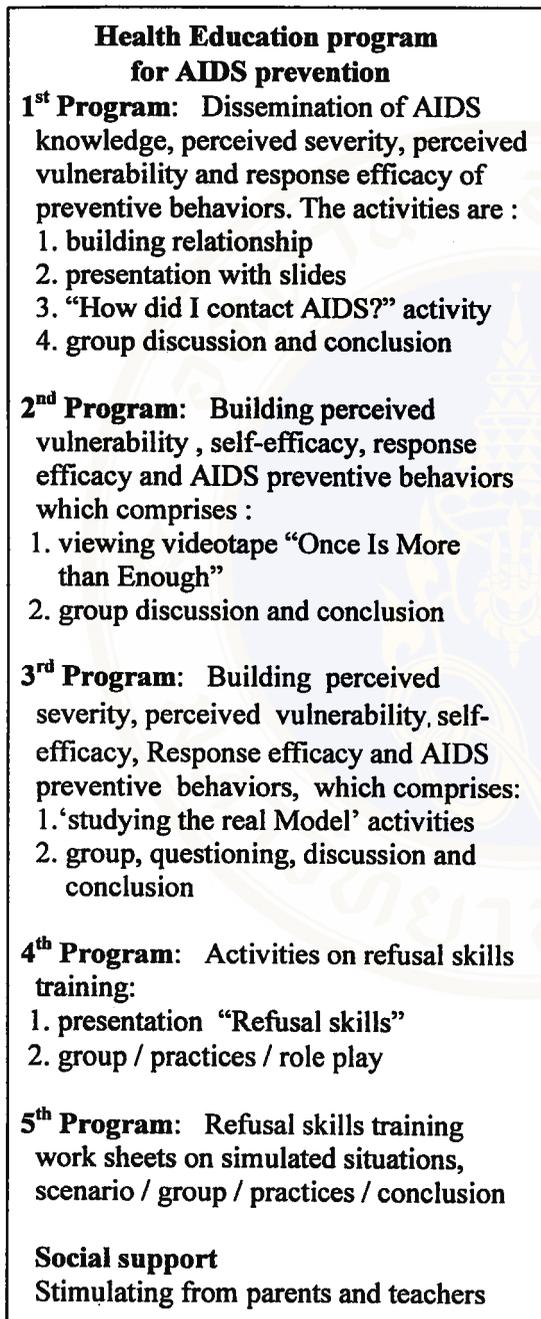
Reviewing of relevant concepts, theories and research works demonstrates that, at present, adolescents have a lot of inappropriate sexual behaviors and are on the rising trend. There are several importantly relevant factors, i.e. participation in sexual relationship at young age, the lack of correct information on risk behaviors leading to sexual intercourse and AIDS infection (i.e. attending entertainment places, drinking alcohol, watching sex arousing media, privately spending time together and sexually

touching the other partner). Having sexual intercourse between male and female adolescents and students without using condom due to the believe that the activities are safe, and male students having intercourse with their girlfriends rather than sex workers, aggravate the problem of AIDS spreading. Therefore, female adolescents should be developed so that they will know how to protect themselves from AIDS infection, to avoid sexual intercourse and other activities leading to sexual intercourse and AIDS infection.

The researcher, thus, is interested in organizing a health program for first year female vocational students by applying the Protection-Motivation Theory's Rogers (1983: 153-176) and social support that are relevant to the rationale of a person in choosing to conduct AIDS prevention behaviors.

The variables used in this study are AIDS knowledge, perceived severity, perceived vulnerability in AIDS infection, self-efficacy, response efficacy, intention and AIDS prevention behaviors. All the above mentioned main and sub factors are to enable female students to have appropriate and correct preventive behaviors including refusal skills when being in a risk situation to AIDS infection. The variable factors used in this research are shown in Figure 1.

Independent variables



Dependent variables

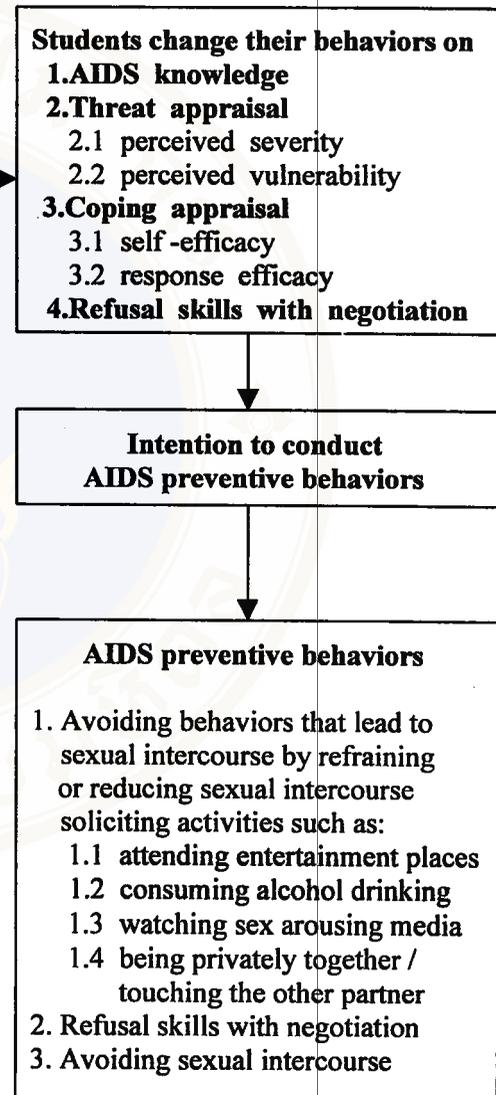


Figure 1: Conceptual Framework

CHAPTER III

MATERIALS AND METHODS

In the research methodology, concepts, theories, analyzing risk factors to AIDS infection and relevant research works including information and data in the pilot study done among first year female vocational students of Ratchaburi province were used as the bases for a health education program. Moreover, the curriculum of the students were also used to shape the program. The purpose of this study is to assess the effectiveness of the health education program in developing AIDS preventive behaviors among the students.

The methodology has respective details as follows :

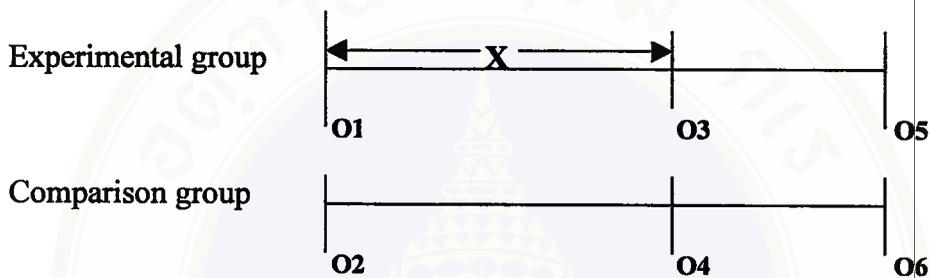
- 3.1 Research design
- 3.2 Population and the study sample
- 3.3 Research instruments
- 3.4 Procedures and Data collection
- 3.5 Data analysis

3.1 Research design

This research is a quasi-experimental design. The students were divided into two groups, the experimental and the comparison groups. Each group had 80 female students. The experimental group was the group with students participating in the health education programs to promote AIDS preventive behaviors. The comparison group was the group

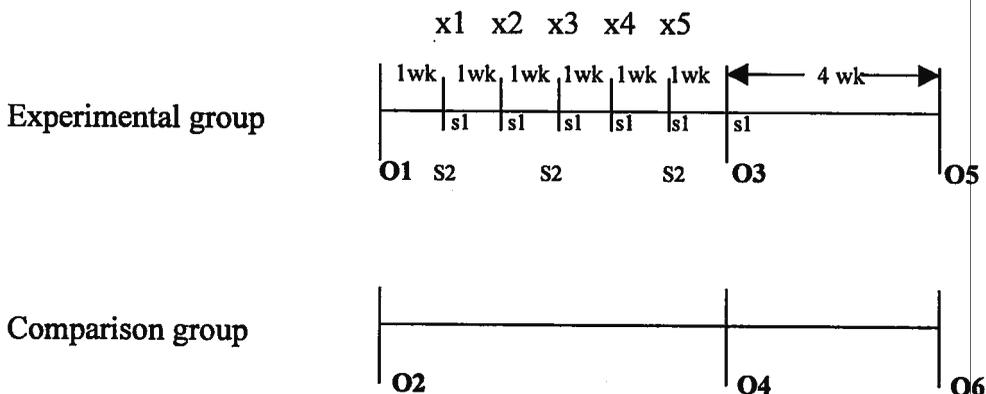
with students who did not attend the health education programs. Information and data were gathered from both groups before and after the program. The research design is shown below.

3.1.1 Research design



- 01 02 means data collection before the program
- 03 04 means data gathering after finishing the program
- 05 06 means data gathering in the follow up period
- X means health education program

3.1.2 Research plan



- 01 02 means data gathering before experiment, one week before health education program, using the questionnaire. The questionnaire was for gathering data on general characteristic of the sample group, AIDS knowledge, threat appraisal, coping appraisal, intention to conduct AIDS preventive behaviors, refusal skills and AIDS preventive behaviors.
- 03 04 means data gathering after the end of the health education program with the questionnaire. The questionnaire was for data on AIDS knowledge, threat appraisal, coping appraisal, intention to conduct AIDS preventive behaviors, refusal skills and AIDS preventive behaviors.
- 05 06 means data gathering five weeks after the end of the health education program) using the questionnaire. The questionnaire was for data on AIDS knowledge, threat appraisal, coping appraisal, intention to conduct AIDS preventive behaviors, refusal skills and AIDS preventive behaviors.
- X means The health education program
- X 1 means the first stage of the health education program on AIDS knowledge, perceived severity, perceived vulnerability and response efficacy in AIDS preventive behaviors.
- X 2 means the second stage of the health education program on perceived vulnerability, self-efficacy, response efficacy and AIDS preventive

- behaviors.
- X 3 means the third stage of the health education program on perceived severity, perceived vulnerability, self-efficacy, response efficacy and intention to conduct AIDS preventive behaviors.
- X 4 means the fourth stage of the health education program for creating understanding in the principle of refusal skills and courage in expressing one's determination in a positive manner.
- X 5 means the fifth stage of the health education program for encouraging confidence in refusal skills and for to refuse any persuasion that leads to sexual intercourse.
- S 1 means encouragement and support of information about AIDS for the experimental group by the teachers.
- S 2 means encouraging strong ties between students and their parents using newsletter and dissemination of information to the parents.

3.2 Population and the study sample

3.2.1 Population

Population used in the research were the first year female students of vocational schools under the Ratchaburi Private Education Committee.

3.2.2 The study sample

The study samples, used for the analysis in this research, were the groups of the first year female students of vocational schools studying in the second semester of the

1999 academic year in Ratchaburi. The following selective steps were used:

Step 1: The following criteria for school selection were used:

1. They were vocational schools under the Ratchaburi Private Education Committee situated in a district with high rate of AIDS infection;
2. The schools were co-educated of both sexes and had similar teaching format and regulation;
3. The schools were of similar size and similar number of students;
4. The schools were in the municipal area with convenient communication and similar environment;
5. The schools' administrators and teachers are cooperated in conducting the research.

There were six vocational schools in Ratchaburi province. Three were under the Minister of Education and the other three schools were under the Private Education Committee. Two were selected using the above criteria, such as: school A and school B, using the simple random sampling methodology. The method of simple random sampling was using by drawing ballots. The result of the draw to be used as the experimental school was school A. School B then was used as the comparison school.

Step 2: In choosing sampling groups in the selected schools, each school had 8 classes of the first year vocational level and each class had approximately 40 students. The selecting criteria were as follows:

1. The simple random sampling in drawing ballots was used to select the experimental group from two classes with 80 students from school A and the

comparison group from two classes with 80 students from school B.

However, some of the students could not participate in the health program. The reasons that some were the male students, and some were selected as schools' representatives in sport competitions, vocational skill competitions, and some quit from schools or were ordered by administrative to temporarily stop coming to schools. Therefore, there were only 69 students participated in the experimental group and 67 students in the comparison group.

2. All students were voluntary and could participate fully in the health education program.

3.3 Research instruments

Instruments used to study were comprised instruments data gathering, and in conducting research and students' risk behaviors recorded form.

3.3.1 Instruments used for data collection

Data collection was done by created the questionnaire. The questionnaire was used for data gathering before and after the program and during the follow up period. Both sampling groups answered the questionnaires by themselves. The questionnaires were separated into seven parts, as follows:

Part 1: a questionnaire on the general characteristics. There were 24 closed-ended questions.

Part 2: a questionnaire on AIDS knowledge. There were 16 questions with four multiple-choice answers for the best one.

There were criteria in giving scores to the answers. A correct answer for a multiple-choice question received one mark while the wrong answer received none. The score-range was between 0 – 16 marks.

In classifying scoring groups, the standard measure and evaluation method in school of Larcharoch, S. (1994: 65 – 68) with the following pattern was used:

Level 1	0 – 59	low
Level 2	60 – 79	middle
Level 3	80 and above	high

Applied with the above pattern, a scoring measurement could be reached:

	low level	middle level	high level
AIDS knowledge	0 – 8	9 – 12	13 – 16

Part 3: A questionnaire with 29 questions on threat appraisal consisting of 13 questions on perceived severity and 16 questions, on perceived vulnerability of AIDS.

Part 4: There were 26 questions on coping appraisal consisting of 13 questions on expectation in self-efficacy and 13 questions on, response efficacy in AIDS preventive behaviors.

The questions in part 3 and 4 consisted of both positive and negative questions using the rating scale, which gave the respondents three choices of agree, disagree and uncertain. Each respondent had to choose one of the three scales rating for answers in each items as follows:

choice	score received	score received
	positive questions	negative questions
agree	3	1
uncertain	2	2
disagree	1	3

Score-range in each category were as follows:

Perceived severity	13 questions	score range	13 – 39
Perceived vulnerability	16 questions	score range	16 – 48
Expectation on self-efficacy	13 questions	score range	13 – 39
Expectation on response efficacy	13 questions	score range	13 – 39

In classifying the gross score based on the methodology of Larcharoch, S. (1994: 65 – 68), the results were as follows:

	low level	middle level	high level
Perceived severity	13 – 27	28 – 33	34 – 39
Perceived vulnerability	16 – 34	35 – 41	42 – 48
Expectation on self-efficacy	13 – 27	28 – 33	34 – 39
Expectation on response efficacy	13 – 27	28 – 33	34 – 39

Part 5: There were 15 questions on intention to conduct AIDS preventive behaviors, of which gave the respondents three choices of intend, uncertain and disintend. Each respondent had to choose one of the three answers and each answer was scored as follows:

choice	score received	
	positive questions	negative questions
intend,	3	1
uncertain	2	2
disintend	1	3

Score-range in the intention to conduct AIDS preventive behaviors was between 15 – 45.

In classifying the gross scores based on the methodology of Larcharoch, S. (1994: 65 – 68), the results were as follows:

	low level	middle level	high level
Intention to conduct	15 – 32	33 – 38	39 – 45

Part 6: Refusal skills against AIDS risk behavior is the measurement created by the researcher to be closed-ended questions consisting of scenario, of which the students could choose to answer whether to yield to the persuasion or to refuse tactfully without jeopardizing relationship. There were 11 questions with five multiple choices in each question. Each choice was scored as follows:

scoring criteria	score
yielding to the persuasion	0
refusing to comply with the persuasion	1
refusing with expressing one’s self feeling	2
refusing with the consent of the partner	3

For other answer in the fifth choice with a short explanation statement, the statement was considered based on the above criteria and scoring. The scenario for initial refusal were in the questions number 1, 3, 4, 6, 7, 8, 10, 11 and the scenario for refusal when being importuned or insulted were in the questions number 2, 5, 9.

Score-range on the refusal skills was between 0 – 33.

In classifying the gross scores based on the methodology of Larcharoch, S. (1994: 65 – 68), the results were as follows:

	low level	middle level	high level
Refusal skills against AIDS risk behaviors	0 – 18	19 – 25	26 – 33

Part 7: There are 34 questions on AIDS preventive behaviors, of which each respondent had to choose one out of the three provided choices. The choices were 0 behave regularly, 1 behave not regularly, and 2 never behave. The criteria used in giving score were as follows:

choice	score received	
	positive questions	negative questions
behave regularly	2	0
behave not regularly	1	1
never behave	0	2

Score-range on the practicing AIDS preventive behaviors was between 0 – 68.

In classifying the gross scores based on the methodology of Larcharoch, S. (1994: 65 – 68), the results were as follows:

	low level	middle level	high level
AIDS preventive behaviors	0 – 39	40 – 53	54 – 68

Building data and information gathering instruments

A. Questionnaire The questionnaire was built and developed following these steps:

First step: Studied theories, documents and relevant research, and studied problems, which were basic information of the sampling groups to build direct questionnaire for direct response to each variable needed to be tested.

Second step: Fixed scope and structure of contents and used them to build the questionnaire and criteria in giving scores to serve the research's purposes.

Third step: Checked the quality of the questionnaire by the thesis's advisor and experts in AIDS to examine its correctness for the content validity. Then the researcher developed further before trying out the questionnaire.

Fourth step: Tried out the questionnaire with a group of population (33 persons) similar to the sampling group. The questionnaire on AIDS knowledge, perception on AIDS severity, perception on risk to AIDS infection, expectation on their own capacity, expectation on the effectiveness on AIDS preventive behaviors and intention to conduct AIDS preventive behaviors were brought to check their precision using Cronbach's alpha coefficient methodology, SPSS/PC+ program, consultation with the Advisor and experts for the purpose of questionnaire development. The questionnaire then was tried out once again with the population most similar to the sampling group. All the mentioned method were for getting a standard quality questionnaire. The analysis

on reliable precision of the questionnaire was the follows:

- AIDS knowledge	the reliability was	0.8036
- perceived severity	the reliability was	0.8069
- perceived vulnerability	the reliability was	0.7513
- expectation on self-efficacy	the reliability was	0.6927
- expectation on response efficacy	the reliability was	0.6723
- intention to conduct AIDS - preventive behaviors.	the reliability was	0.8729

The part of the questionnaire on refusal skills and AIDS preventive behaviors were altered and further developed on its format and language used to achieve correct understanding, and used the most clear and precise of the language.

B. Risk behaviors recorded form

The behavior recorded form was built to collected the qualitative information and data of the sampling group during the program and follow up period. The sampling group's teaching advisors were the ones who did the recording. The researcher had coordinated with the teaching advisor of each class to gain their understanding in recording the students' behaviors. During the week the recording was done three times :

First time: before the start of the health education program

Second time: after the completion of the third period of the health education program

Third time: one week after the completion of the fifth period of the health education program

The behaviors recorded were the habits of enjoying the night life in entertainment places, alcohol drinking, watching sex arousing media, staying together in a private place/sexually touching the other partner and refusal when being persuaded to have sexual intercourse and AIDS risking behaviors.

3.3.2 Instruments used in the experiment

3.3.2.1 Health education program consisted of:

- | | | |
|----------------|--------|---|
| First program | called | “Do you know AIDS well enough?” and “How did I Contact AIDS?” |
| Second program | called | “Once was more than enough” |
| Third program | called | “Experience from the real case” |
| Fourth program | called | “Can you say no to your friend?” |
| Fifth program | called | “Can you say no to your friend (continue.)?” |

3.3.2.2 Media and equipment used in the presentation were slides, video, folding pictures, transparent sheets, leaflets, handbooks and guidebooks, blank paper sheets, instruction - sheet for group discussion, simulated situations, modeling samples of reproduction organs, condoms, glass tubes, syringes and color changing liquid.

3.4 Procedures and data collection

After the checking alteration and development of the instruments used for data collecting, these steps was followed :

3.4.1 Preparation stage

3.4.1.1 Selected schools to experiment and study and selected sampling group in accordance with the criteria set.

3.4.1.2 Coordinated with the selected schools both the experimental school and the comparison school.

3.4.1.3 Coordinated with the Ratchaburi Public Health Office for receiving support in research aids, materials and equipment including other media used in the research.

3.4.1.4 Coordinated with the AIDS Control Office Region 4 for identifying and inviting experts in AIDS to participate in the health education program.

3.4.1.5 Requested formal letters from Mahidol University informing the managing directors of both schools requesting them to cooperate in data gathering from the sampling groups. The letters also informed them of the purposes and details of health program and steps in conducting the research.

3.4.2 Implementation stage

The experiment was conducted using the created plan and instruments. The experiment lasted eleven weeks during November 1999 to January 2000 with the details as follows:

3.4.2.1 Began data gathering using questionnaire in the pre-testing period with the experimental and comparison groups one week before the start of the program.

3.4.2.2 Started the program from period one to five for the experimental group on every Wednesday during non formal teaching period (1 hour 30 minutes) once a week.

The 1st health education program (1 hour 30 minutes)

The title was called “Do you know AIDS well enough?” and “How did I contact AIDS?”

The purposes were for the target group to know about AIDS, to recognize the perceived severity of AIDS, perceived vulnerability and response efficacy of the AIDS preventive behaviors and to had real experiences. It had the following activities:

“Do you know AIDS well enough?” consisted of:

1. creating relationship among the researcher, students and their advisors,
2. presentation with slides on present situation of AIDS, knowledge on the spread of AIDS, preventive, cure and diagnosis of AIDS,
3. summarizing important issues and question and answer session,
4. the media and equipment used, slides and handbook “Knowing AIDS”.

“How did I contact AIDS” consisted of:

1. leading students into the experimental activity “see the spread of AIDS through comparison model” using color changeable liquid, which changed color when being contaminated, as a comparative model,
2. distribute syringes and glass tubes to every students,
3. allowing the students to conduct the experiment under the supervision of the researcher in all steps,
4. the researcher then checked the liquid in the glass tube of every students for finding out the contamination from the changing color of the liquid,
5. separating students into groups discussion and presentation in accordance with the instruction-sheets on:

- 5.1 methodology of AIDS spreading,
 - 5.2 AIDS risking lifestyle,
 - 5.3 attitude that could reduce AIDS risking behaviors,
 - 5.4 impact and consequences after knowing that one has contacted AIDS.
6. the researcher gave summary conclusion that comparison could be made with the sexual intercourse of some students, of which some might unknowingly contacted AIDS. Refraining from having sexual intercourse and having only one partner attitude was emphasized.
7. the materials and equipment used for demonstration were: clear glass bottles, clean water, syringes, Sodium hydroxide, Phenopthalene and instruction sheet.

The 2nd health education program (1 hour 30 minutes)

The title was called “Once was more than enough”

The purposes of this period were to create more perceived vulnerability, self efficacy, response efficacy and AIDS preventive behaviors. This period consisted of:

1. reviewing the contents in the first period and leading into the contents of the second period by the researcher,
2. replaying video tape “Once was more than enough”,
3. group analysis of the problems in the instruction sheet, group discussion and oral report in class on the situation and risk behaviors of each player in the story,
4. summary of important issue and teaching how to use condom by the researcher,

5. the media and equipment used in this period were such as: video tape “Once was more than enough”, instruction sheets, condoms, leaflets on how to correctly use condom and handbooks on “Women 1000%”.

The 3rd health education program (1 hour 30 minutes)

The title was called “Experience from the real case”.

The purposes were to create on perceived severity, perceived vulnerability, self efficacy, response efficacy and AIDS preventive behaviors. The period consisted of:

1. reviewing the contents of the first and second periods and leading into the contents of the third period by the researcher, explanation of the right of AIDS infected persons, for example the right to have his/her information to be kept secret, the right to have access to social services.

2. introducing the students to 4 AIDS infected persons, and group dialogue with infected persons on AIDS risk behaviors, consequent impacts after being infected, the help needed from society and the acceptance of people for the infected persons to live normally in society.

3. class report by representatives of each groups,

4. conclusion made by the researcher,

5. the researcher was using media and equipment such as: the real infected persons, leaflets on STD/AIDS preventive and living together with the infected in community.

The 4th health education program (1 hour 30 minutes)

The title was called “Can you say no to your friend?”

The purposes were to practice refusal skills with negotiation, to avoid joining unwanted activities with their friends and practice assertiveness skills how to express their need. The period consisted of:

1. reviewing the 1-3 periods and leading to the forth period,
2. presentation activities on “Refusal skills” and correct refusal principles,
3. selecting three students to present the role play on “Persuasion to absent the class”,
4. student’s practice the refusal skills how not to going out with their friends, asking volunteers on the “satisfactory” or “unsatisfactory” with the refusing words created,
5. summarizing by the researcher and choosing the appropriate refusing words with negotiation,
6. presentation of group discussion/analysis of refusal situations ,
7. the researcher using the questions and answers and summarizing,
8. the researcher was using media and equipment such as : information sheets on refusal principles, role play scripts, refusal skills practicing kits, scenarios on improper situation (frequenting entertainment places, drinking alcohol, watching sexual arousing media and being privately together in a place or touching the other partner).

The 5th health education program (1 hour 30 minutes)

The title was called “Can you say no to your friend?”

The purpose was to create confidence in refusal when being persuaded without jeopardizing relationship because there were some refusal, which might jeopardize relationship. The period consisted of:

1. The researcher reviewing contents from the fourth period and leading to the fifth period, mentioning situations leading to sexual intercourse and AIDS risk behaviors, presentation on refusal skills when being importuned or insulted without jeopardizing relationship,
2. group discussion on the situation in the distributed instruction sheets (e.g. frequenting entertainment places, drinking alcohol, watching sex arousing media and being together in a private place or sexual touching the other partner),
3. asking every students to participate in writing role playing script of the group practice with everyone taking turn in order to enhance their refusing experience and skills.
4. selecting representatives of each group to play their role in class,
5. the researcher using the questions and summarizing an relevant points of role play,
6. the researcher was using media and equipment such as: information sheet (skills in finding way out when being persuaded to improper behaviors or being insulted), demonstration of refusal skills, instruction sheets on situation leading to AIDS infection risk and blank paper sheets.

Social support

Information support from teaching advisors: 6 times

The purposes were for the teaching advisors to have awareness in sexual transmitted AIDS infection problem, participate in activity organization, support and reminding students to change improper behaviors. It was done by each week after the finish and end of each period as follows:

The 1st to 3rd periods: the teaching advisors reviewed with students on AIDS knowledge and encouraged them to beware of its danger including their risk behaviors.

The 4th to 5th periods: the teaching advisors gave recommendations on the positive aspects of risk preventive behaviors, persuaded and reminded them on how to behave, complimented those with preventive behaviors and encouraged them to maintain the preventive behaviors.

The 6th period: one week after the health education program was finished, the teaching advisors encouraged students on how to behave, complimented those who avoid risk behaviors (e.g. frequenting entertainment places, drinking alcohol, watching sexual arousing media and being together with a boyfriend in a private place), and supported the continuation of the preventive behaviors.

Sending information to their parents (or custodians): 3 times

The purposes were to raise their awareness on the need of cooperation in solving AIDS problem, care participation, consultation with students, and warning them to reduce the risk behaviors. The activities of the researcher were as follows:

The 1st activity was sending a letter to the parents before the start of the health program informing them the purposes and the importance of the program with documents on AIDS knowledge including a feed back form for their opinions to be sent back to the researcher.

The 2nd activity was sending a letter to their parents after the finish of the second session to strengthen relationship between parents and students in supporting appropriate behaviors. A document on “Parents and Youth’s Behaviors” was sent to them including a feed back form for their opinions to be sent back to the researcher.

The 3rd activity was sending a letter to their parents after the fourth session to request cooperation in urging students to avoid risk behaviors by having sexual intercourse before appropriate age and a feed back form to be sent back to the researcher.

3.4.2.3 Data and information gathering using questionnaire one week after the program among students in the experimental and comparison groups.

3.4.2.4 Data and information gathering using questionnaire five week after the program among students in the experimental and comparison groups.

3.4.2.5 the three times by risk behaviors recorded form.

3.4.2.6 Analyze all the information and data received both before and after the program

3.5 Data analysis

After data gathering, checking the completion and correction, the researcher had created handbook on coding of the questionnaire and recorded into a diskette. The diskette was tested using statistical method in SPSS/PC+ Program (Statistical package for the social science program) of which set the significant statistic validity (reliability) = 0.05 as the standard criteria for hypothesis acceptability. The statistics used in the analysis were as follows:

3.5.1 Descriptive statistics

It was used to analyze data on the social and population with percentage statistic, means and standard deviation.

3.5.2 Analytic statistics

3.5.2.1 The analysis was done to find the differences by the comparison of the means scores of AIDS knowledge, threat appraisal, coping appraisal, intention to conduct AIDS preventive behaviors, refusal skills and AIDS preventive behaviors of both within the experimental and the comparison groups before and after the program. The statistic methodology used was Paired samples t- test.

3.5.2.2 The analysis was done to find out the differences by the comparison of the means scores of AIDS knowledge, threat appraisal, coping appraisal, intention to conduct AIDS preventive behaviors, refusal skills and AIDS preventive behaviors between the experimental and the comparison groups before and after the program. The statistic methodology used was Student's t-test.

CHAPTER IV

RESULTS

This study is a quasi-experimental research. The samples were first year vocational female students studying in the second semester in vocational schools in Ratchaburi. They were divided into an experimental group and comparison group with 69 and 67 students respectively. The study was conducted between November 1999 and January 2000. The researcher had gathered information and data from the respondents to the questionnaire created by the researcher both before and after the program which were one week and 5 weeks respectively. The data were analyzed by using the SPSS/PC+ program. The results of the analysis are presented in details as follows:

4.1 Data on general characteristics of the samples.

4.2 Results of the analysis of level of scores on AIDS knowledge, perceived severity, perceived vulnerability, self-efficacy, response efficacy, refusal skills with negotiation, intention to conduct AIDS preventive behaviors and AIDS preventive behaviors.

4.3 Results of the analysis of mean score on AIDS knowledge, perceived severity, perceived vulnerability, self-efficacy, response efficacy, refusal skills with negotiation, intention to conduct AIDS preventive behaviors and AIDS preventive behaviors.

4.1 Data on general characteristics of the samples

consisted of the study of these variables:

4.1.1 Age, personal expense and the adequacy of the expense during studying.

Age: Most of the students in the experimental group were 16 years old (76.8 percent) and the second largest group were 15 (14.5 percent); while in the comparison group 53.7 percent were 16 years old and 38.8 percent were 15 (Table 1).

Personal expense: The experimental group received personal expense from their parents at the average of 1287.3 Baht/month with standard deviation of 554.2 Baht; while the comparison group received 1157.9 Baht/month on average with standard deviation of 570.6 Baht (Table 1).

Adequacy of the expense during studying: In the experimental group, 71 percent indicated that they had enough to spend, 16 indicated that it was not adequate. In the comparison group, 77.6 percent indicated that it was adequate, and 14.9 percent said they had more than enough to spend (Table 1).

Table 1: Number and percentage of the samples categorized on age, personal expense and adequacy of the expense during studying.

General characteristic of the sampling groups		Experimental group		Comparison group	
		number	percent	number	percent
Age	14 years old	0	0	1	1.5
	15 years old	10	14.5	26	38.8
	16 years old	53	76.8	36	53.7
	17 years old	5	7.3	4	6.0
	18 years old	1	1.4	0	0
Total		69	100.0	67	100.0
Mean		15.5		15.6	
Standard deviation		2.2		0.6	

**Table 1: (continued.)**

General characteristic of the samples	Experimental group		Comparison group	
	number	percent	number	percent
Personal expense				
500 Bahts and under	2	2.9	8	11.9
501 – 1000 Bahts	31	44.9	28	41.8
1001 – 1500 Bahts	13	18.9	17	25.4
1501 – 2000 Bahts	20	29.0	12	17.9
2001 Bahts and over	3	4.3	2	3.0
Total	69	100.0	67	100.0
Mean	1287.3		1157.9	
Standard deviation	554.2		570.6	
Adequacy of the expense during studying				
Adequate	49	71.0	52	77.6
Not adequate	11	16.0	5	7.5
More than adequate	9	13.0	10	14.9
Total	69	100.0	67	100.0

4.1.2 Self independence: This information was assessed from the persons the students lived with during studying and their special activities during free time.

The persons the students lived with during studying: The majority of the experimental group lived with their parents with the percentage of 37.6; and 33.4 percent lived in apartments, 16.0 percent lived with their relatives. In the comparison group, 73.1 percent lived with their parents (Table 2).

Special activities during their free time: The experimental group spent 39.1, 31.9 and 13.0 percent for their free time watching television/video tapes/movies, playing/listening to music, and participating in hobbies like gardening or handicraft. In the comparison group, 47.7 percent of students watched television/video

tapes/movies, 26.9 and 11.9 percent spent their time playing/listening to music and went out with friends respectively (Table 2).

Table 2: Number and percentage of the samples categorized in accordance with the persons the students lived with during studying and their special activities during free time.

Independence in self governing	Experimental group		Comparison group	
	number	percent	number	percent
Persons the students lived with during studying.				
Parents	26	37.6	49	73.1
Father	2	2.9	2	3.0
Mother	6	8.7	0	0
Friend	1	1.4	0	0
Relation	11	16.0	9	13.4
Renting room	23	33.4	7	10.5
Total	69	100.0	67	100.0
Special activities during free time				
Playing/listening to music	22	31.9	18	26.9
Reading	6	8.7	2	3.0
Exercise	0	0	2	3.0
Watching TV/VDO/Movies	27	39.1	32	47.7
Go with friends	5	7.3	8	11.9
Some hobbies	9	13.0	5	7.5
Total	69	100.0	67	100.0

4.1.3 Structure of relationship within family: The assessment was done on the marital status of the parents, relationship between the parents, the parents' occupation and relationship between students and their parents.

Marital status of the parents: From both groups, most of their parents lived together which were 66.7 percent in the experimental group and 83.6 percent in the comparison group (Table 3).

Relationship between the father and mother: In the experimental group, most of their parents had close relationship and the percentage was 66.7, while 20.3 percent lived separately. In the comparison group, 74.6 percent of the parents had close relationship and 10.5 percent often quarreled with each other (Table 3).

Parents' occupations: Subjects in the experimental group, had fathers who were farmers (37.6 percent), workers (29.0 percent), and vendors (18.9 percent). Their mothers were workers as many as 42.1 percent, and were farmers and vendors at 34.7 and 20.3 percent respectively. Fathers of the subjects in the comparison group were farmers and vendors (26.9 percent), workers (19.4 percent), and government officials (17.9 percent). Their mothers were vendors, (38.8 percent), farmers (29.8 percent), and workers (23.9 percent) (Table 3).

Relationship between the students and their fathers: In the experimental group, 37.6 percent had close relationship with their fathers while 29.0 percent had occasionally close relationship with their fathers. In the comparison group, students with close relationship with the father were 46.2 percent and 23.9 percent had periodically close relationship with the father (Table 3).

Relationship between the students and their mothers: In the experimental group, 66.7 percent had close relationship with their mothers while 17.3 percent had occasionally close relationship with mothers. In the comparison group, students with close relationship with the mothers were 76.1 percent (Table 3).

Table 3: Number and percentage of the samples categorized in accordance with the marital status of their parents, relationship between their parents, the parents' occupations and relationship between students and their parents.

Structure of relationship within the family	Experimental group		Comparison group	
	number	percent	number	percent
Marital status of parents				
Married	46	66.7	56	83.6
Divorce	5	7.3	2	3.0
Separated	12	17.3	3	4.5
Widowed	6	8.7	6	8.9
Total	69	100.0	67	100.0
Relationship between the father and mother				
Close relationship	46	66.7	50	74.6
Often quarreled	3	4.3	7	10.5
Separated	14	20.3	4	6.0
Dead	6	8.7	6	8.9
Total	69	100.0	67	100.0
Father's occupation				
Government official	4	5.8	12	17.9
Vendors	13	18.9	18	26.9
Workers	20	29.0	13	19.4
Farmers	26	37.6	18	26.9
Dead	6	8.7	6	8.9
Total	69	100.0	67	100.0
Mother's occupation				
Government official	2	2.9	5	7.5
Vendors	14	20.3	26	38.8
Workers	29	42.1	16	23.9
Farmers	24	34.7	20	29.8
Total	69	100.0	67	100.0

Table 3: (continued)

Structure of relationship within the family	Experimental group		Comparison group	
	number	percent	number	percent
Relationship between the students with their fathers				
Close relationship	26	37.6	31	46.2
Little relationship	10	14.5	13	19.4
Occasional relationship	20	29.0	16	23.9
No relation	13	18.9	7	10.4
Total	69	100.0	67	100.0
Relationship between the students with their mothers				
Close relationship	46	66.7	51	76.1
Little relationship	6	8.7	9	13.4
Periodic relationship	12	17.3	7	10.5
No relationship	5	7.3	0	0
Total	69	100.0	67	100.0

4.1.4 Structure of relationship in school: The assessment was done based on overall relationship between students and their teachers

Overall relationship between students and teachers: The number of students in the experimental group who had superficial dialogue with their teachers were 37.6percent, and 36.2 percent had very close relationship; while 26.2 percent had dialogue with the teachers only in class. In the comparison group, 50.7 percent had dialogue with teachers only in class while 41.8 percent had superficial dialogue with teachers (Table 4).

Table 4: Number and percentage of the samples categorized based on their overall relationship with the teachers.

Overall relationship between students and teachers	Experimental group		Comparison group	
	number	percent	number	percent
close relationship	25	36.2	4	6.0
dialogue only in class	18	26.2	34	50.7
superficial dialogue	26	37.6	28	41.8
no dialogue	0	0	1	1.5
Total	69	100.0	67	100.0

4.1.5 Sexually encouraging behavior: This factor was assessed from the fact that they were persuaded to have some behaviors.

Being persuaded to have a sexually encouraging behavior: The majority of student or 46.4 percent of the experimental group used to be persuaded to go out with a boyfriend, 29.0 percent were persuaded to go to an entertainment place and 11.5 percent were persuaded to drink alcohol. From the data 7.3 percent of the experimental group used to be persuaded to do all activities as mentioned above. In the comparison group, 49.3 percent were persuaded to go out with a boyfriend, while 19.4 percent went to an entertainment place and 11.9 percent were persuaded to watch sexually arousing media (Table 5).

Table 5: Number and percentage of the samples categorized in accordance with the types of sexually encouraging activities.

Sexually encouraging activities	Experimental group		Comparison group	
	number	percent	number	percent
go to entertainment places	20	29.0	13	19.4
drink alcohol	8	11.5	4	6.0
watch sexually arousing media	3	4.3	8	11.9
go out with a boyfriend	32	46.4	33	49.3

Table 5: (continued)

Sexually encouraging activities	Experimental group		Comparison group	
	number	percent	number	percent
all of the above	5	7.3	3	4.5
never did any of the above	1	1.5	6	8.9
Total	69	100.0	67	100.0

4.1.6 Experience in having a boyfriend: The treatment between lovers, having sexual intercourse and the use of condom while having intercourse was analysed as follows:

Having a boyfriend and the treatment between them: In the experimental group, 59.4 percent had a boyfriend, 51.2 percent had never touched each other while 43.9 percent held hands. In the comparison group, 55.2 percent had a boyfriend, while 46.0 percent held each other's hand (Table 6).

Having sexual intercourse: All of the students in the experimental group never had sexual intercourse while 92.5 percent of the comparison group had no experience in sexual intercourse and only 7.5 percent (5 students) used to have sexual intercourse. The age when they had first experience in sexual intercourse was 15 years (40 percent). Others had first sexual experience at 12, 14 and 16 years old; and the percentage was 20 percent each (one person each). On the reason of having sex, 80 percent reported that they were sexually caressed until they could not control themselves (Table 6).

Using of condom during sexual intercourse: In the comparison group, the percentage of students using condom every time they had sex was 40 (2 persons) which was equal to the percentage of students that did not use condom (Table 6).

Table 6: Number and percentage of the samples categorized from the data on their experiences in having a boyfriend, treating their boyfriends, having sexual intercourse and using condom during sexual intercourse.

Experience in having a boyfriend	Experimental group		Comparison group	
	number	percent	number	percent
Experience in having a boyfriend				
Have no experience	28	40.6	30	44.8
Have experience	41	59.4	37	55.2
Total	69	100.0	67	100.0
Treating their boyfriends				
Holding hands	18	43.9	17	46.0
Embracing	2	4.9	3	8.1
Kissing	0	0	3	8.1
No physical touching	21	51.2	14	37.8
Total	41	100.0	37	100.0
Having sexual intercourse				
Have no experience	69	100.0	62	92.5
Have experience	0	0	5	7.5
Total	69	100.0	67	100.0
The age when having first sexual intercourse				
12 years old	0	0	1	20.0
14 years old	0	0	1	20.0
15 years old	0	0	2	40.0
16 years old	0	0	1	20.0
Total	0	0	5	100.0
The reason of having sex for the first time				
drinking alcohol	0	0	1	20.0
being sexually caressed and could not control themselves	0	0	4	80.0
Total	0	0	5	100.0

Table 6: (continued)

Experience in having a boyfriend	Experimental group		Comparison group	
	number	percent	number	percent
Using of condom during sexual intercourse				
Always	0	0	2	40.0
Sometimes	0	0	1	20.0
Never	0	0	2	40.0
Total	0	0	5	100.0

4.1.7 Exposure to AIDS information and the receiving suggestions and recommendations on how to behave to prevent AIDS.

Exposure to AIDS information: In the experimental group, 50.7 percent received information from newspapers/leaflets/posters and 47.8 percent from radio/television. The person who gave them information on AIDS were teachers (46.4 percent), and doctors/nurses (29.0 percent). In the comparison group, 49.3 percent received information from radio/television while 47.7 percent from newspaper/leaflets/poster. The persons who gave them information were teachers (49.3 percent), and doctors/nurse and parents (23.9 percent and 13.4 percent) respectively (Table 7).

Receiving suggestions and recommendations on how to behave for AIDS prevention: In the experimental group, the percentage of persons who gave such suggestions and recommendations were parents,(55.1 percent), and teachers (31.9 percent). The issues often raised were attending entertainment places (40.6 percent), being privately with a boyfriend (27.5 percent) and recommended on overall issues (18.9 percent). In the comparison group, the percentage of persons who gave such suggestions and recommendations were parents at 49.3 percent and teachers at 38.8 percent. The issues often raised were attending entertainment places (52.1 percent) and being alone with a boyfriend (25.4 percent) (Table 7).

Table 7: Number and percentage of the samples categorized from the data on the exposure to AIDS information, receiving suggestions and recommendations on how to behave for AIDS prevention.

Source of information / suggestions and recommendations	Experimental group		Comparison group	
	number	percent	number	percent
Source of information				
Radio/television	33	47.8	33	49.3
Newspaper/leaflet/poster	35	50.7	32	47.7
Announcement in school	1	1.5	2	3.0
Total	69	100.0	67	100.0
Person who gave AIDS information				
Parents	3	4.3	9	13.4
Doctor/nurse	20	29.0	16	23.9
Friend	9	13.0	3	4.5
Teacher	32	46.4	33	49.3
Relative	5	7.3	6	8.9
Total	69	100.0	67	100.0
Person who gave suggestions and recommendations				
Parent	38	55.1	33	49.3
Teacher	22	31.9	26	38.8
Brother/sister	2	2.9	2	3.0
Relative	4	5.8	0	0
None	3	4.3	6	8.9
Total	69	100.0	67	100.0
Issues recommended				
Going to entertainment places	28	40.6	35	52.1
Drinking alcohol	4	5.8	2	3.0
Watching sex arousing media	2	2.9	1	1.5
Stay alone with boyfriend	19	27.5	17	25.4
All of the above	13	18.9	7	10.5
Never received information	3	4.3	5	7.5
Total	69	100.0	67	100.0

4.2 Results of the analysis of the scores for AIDS knowledge, perceived severity, perceived vulnerability, self-efficacy, response efficacy, intention to conduct AIDS preventive behaviors, refusal skills and AIDS preventive behaviors.

The number and percentage of the samples were categorized based on the scores for AIDS knowledge, perceived severity, perceived vulnerability, self-efficacy, response efficacy, intention to preventive behaviors, refusal skills and AIDS preventive behaviors before and after the program.

The pre and post-test changes for the 8 variables of the experimental group can be characterized by the grouped three levels of scores: low, middle and high. Positive changes from most subjects in the middle level at pre-test to most subjects in the high level at post-test were found in 4 variables: perceived vulnerability, self-efficacy, response efficacy, and refusal skills; and from low level at the pre-test to the middle level at post-test in 2 variables: AIDS knowledge and AIDS preventive behaviors. For intention to conduct AIDS preventive behaviors and perceived severity, most subjects remained at the high and middle levels, respectively.

As for the comparison group, most subjects remained at the low level for 3 variables: AIDS knowledge, refusal skills, and AIDS preventive behaviors; at middle level for perceived severity, and perceived vulnerability; and at the high level for self-efficacy, and intention to conduct AIDS preventive behaviors. The only exception was for response efficacy where most were in the high level at the pre-test (55.2 percent) but dropped to the middle level at the post-test (52.2 percent) as showed in Table 8.

Table 8: Number and percentage of the samples categorized based on the scores' level of all variables before and after the program.

Variables	Experimental group				Comparison group			
	pre-test		post-test		pre-test		post-test	
	n	%	n	%	n	%	n	%
AIDS knowledge								
high	0	0	5	7.3	0	0	1	1.5
middle	28	40.6	46	66.6	20	29.9	26	38.8
low	41	59.4	18	26.1	47	70.1	40	59.7
Perceived severity								
high	13	18.8	18	26.1	10	14.9	18	26.9
middle	43	62.4	39	56.5	45	67.2	35	52.2
low	13	18.8	12	17.4	12	17.9	14	20.9
Perceived vulnerability								
high	16	23.2	39	56.5	20	29.9	20	29.9
middle	47	68.1	28	40.6	42	62.6	41	61.1
low	6	8.7	2	2.9	5	7.5	6	9.0
Self-efficacy								
high	33	47.8	44	63.8	32	47.7	37	55.2
middle	35	50.7	22	31.9	28	41.8	23	34.3
low	1	1.5	3	4.3	7	10.5	7	10.5
Response efficacy								
high	24	34.8	41	59.4	37	55.2	28	41.8
middle	35	50.7	23	33.3	23	34.3	35	52.2
low	10	14.5	5	7.3	7	10.5	4	6.0
Intention to conduct AIDS preventive behaviors								
high	56	81.2	66	95.7	49	73.1	58	86.5
middle	8	11.5	3	4.3	15	22.4	8	12.0
low	5	7.3	0	0	3	4.5	1	1.5

Table 8: (continued)

Variables	Experimental group				Comparison group				
	pre-test		post-test		pre-test		post-test		
	n	%	n	%	n	%	n	%	
Refusal skills									
high	22	31.9	54	78.2	8	12.0	12	17.9	
middle	28	40.6	10	14.5	23	34.3	25	37.3	
low	19	27.5	5	7.3	36	53.7	30	44.8	
AIDS preventive behaviors									
high	17	24.6	14	20.3	7	10.5	8	12.0	
middle	22	31.9	34	49.3	22	32.8	21	31.3	
low	30	43.5	21	30.4	38	56.7	38	56.7	

4.3 Results of the analysis of the mean scores on AIDS knowledge, perceived severity, perceived vulnerability, self-efficacy, response efficiency, intention to conduct AIDS preventive behaviors, refusal skills and AIDS preventive behaviors.

The comparative analysis of the mean score on AIDS knowledge within and between the experimental and comparison groups before and after the program was performed with Paired samples t-test and Student's t-test statistic at 95 percent confidence by considering 16 questions with the full scores of 16.

The results of the analysis presented in Table 9 showed that the post-test mean score of the experimental group was significantly higher than the pre-test one ($p=0.004$); whereas there was no statistical difference between the pre-test and post-test mean scores of subjects in the comparison group.

Statistical analysis of the mean scores before the program indicated that there was no statistical difference between the experimental and the comparison groups.

While the results after the program show a significantly higher mean score of the experimental group than that of the comparison group ($p=0.022$).

Table 9: The differences between the pre-test and post-test mean scores on AIDS knowledge within and between the experimental and the comparison groups before and after the program .

AIDS knowledge	n	\bar{X}	S.D.	df	t-value	p-value
Within group						
Experimental group						
Before the program		8.79	1.73			
	69			68	2.73	0.004
After the program		9.56	1.96			
Comparison group						
Before the program		8.77	1.61			
	67			66	0.49	0.621
After the program		8.89	1.88			
Between groups						
Before the program						
Experimental group	69	8.79	1.73			
Comparison group	67	8.77	1.61	134	0.07	0.942
After the program						
Experimental group	69	9.56	1.96			
Comparison group	67	8.89	1.88	134	2.03	0.022

4.3.2 The comparative analysis of mean scores on threat appraisal consisted of two parts: 13 questions were considered in perceived severity, with the full scores of 39; and 16 questions in perceived vulnerability, with the full scores of 48. Paired samples t-test and Student's t-test statistic at 95 percent confidence were employed for the analysis.

4.3.2.1 Perceived severity

The results in Table 10 are for the variable perceived severity. It was found that the post-test mean score of both experimental and comparison groups were a

little higher than that of the pre-test. But it was not statistically different.

Before the program, the experimental group's mean score was not significantly different from that of the comparison group. Whereas; the analysis of the mean scores after the program for both groups also showed no statistical difference.

Table 10: The differences between the pre-test and post-test mean scores on perceived severity within and between the experimental and the comparison groups before and after the program .

Perceived severity	n	\bar{X}	S.D.	df	t-value	p-value
Within group						
Experimental group						
Before the program	69	30.93	2.89	68	0.73	0.463
After the program		31.17	3.47			
Comparison group						
Before the program	67	30.91	2.39	66	0.60	0.550
After the program		31.08	3.12			
Between groups						
Before the program						
Experimental group	69	30.93	2.89	134	0.04	0.970
Comparison group	67	30.91	2.39			
After the program						
Experimental group	69	31.17	3.47	134	0.15	0.882
Comparison group	67	31.09	3.12			

4.3.2.2 Perceived vulnerability

The analysis of mean scores in perceived vulnerability is given in Table 11. It was found that the post-test of mean score of the experimental group was significantly higher than the pre-test one ($p < 0.001$). While the analysis of the comparison's mean score before and after the program did not show any statistical difference.

Before the program, it was found that the mean scores of the two groups had no statistical difference; whereas after the program the mean score of the experimental group was significantly higher than that of the comparison group ($p < 0.001$).

Table 11: The differences between the pre-test and post-test mean scores on perceived vulnerability within and between the experimental and the comparison groups before and after the program.

Perceived vulnerability	n	\bar{X}	S.D.	df	t-value	p-value
Within group						
Experimental group						
Before the program	69	38.85	3.40	68	6.62	<0.001
After the program		42.06	3.45			
Comparison group						
Before the program	67	39.57	3.45	66	0.56	0.575
After the program		39.80	3.92			
Between groups						
Before the program						
Experimental group	69	38.85	3.40	134	1.21	0.228
Comparison group	67	39.57	3.45			
After the program						
Experimental group	69	42.06	3.45	134	3.56	<0.001
Comparison group	67	39.80	3.92			

4.3.3 The comparative analysis of mean scores on coping appraisal consisted of two parts: 13 questions were considered in self-efficacy, with the full scores of 39; and 13 questions in response efficacy, with the full scores of 39. The results of the analysis using Paired samples t-test and Student's t-test statistic at 95 percent confidence are shown in Table 12 and Table 13.

4.3.3.1. Self-efficacy

It was found that the post-test mean score of the experimental group was significantly higher than that of the pre-test one ($p = 0.003$) as shown in Table 12. However, in the comparison group, there was no statistical difference between the pre-test and post-test mean scores.

For before and after the program, it was found that the mean scores of both groups were not statistically different as shown in Table 12.

Table 12: The differences between the pre-test and post-test mean scores on self-efficacy within and between the experimental and the comparison groups before and after the program .

Self-efficacy	n	\bar{X}	S.D.	df	t-value	p-value
Within group						
Experimental group						
Before the program		33.33	3.18			
After the program	69	34.59	3.68	68	2.80	0.003
Comparison group						
Before the program		33.07	3.83			
After the program	67	33.49	4.11	66	0.86	0.393
Between groups						
Before the program						
Experimental group	69	33.33	3.18			
Comparison group	67	33.07	3.83	134	0.43	0.699
After the program						
Experimental group	69	34.59	3.68			
Comparison group	67	33.49	4.12	134	1.64	0.102

4.3.3.2 Response efficacy

The results of the analysis in Table 13 showed that the post-test mean score of the experimental group was significantly higher than that of the pre-test one

($p < 0.001$). As for the comparison group, there was no statistical difference between the pre-test and post-test mean scores.

The analysis before the program yielded that the mean scores of the both groups were not statistically different; while after the program, the mean score of the experimental group was significantly higher than that of the comparison group ($p=0.036$) as shown in Table 13.

Table 13: The differences between the pre-test and post-test mean scores on response efficacy within and between the experimental and the comparison groups before and after the program .

Response efficacy	n	\bar{X}	S.D.	df	t-value	p-value
Within group						
Experimental group						
Before the program	69	31.77	3.79	68	5.76	<0.001
After the program		33.88	3.38			
Comparison group						
Before the program	67	32.29	3.42	66	1.26	0.211
After the program		32.88	3.09			
Between groups						
Before the program						
Experimental group	69	31.77	3.79	134	0.85	0.394
Comparison group	67	32.29	3.42			
After the program						
Experimental group	69	33.88	3.38	134	1.80	0.036
Comparison group	67	32.88	3.09			

4.3.4 The comparative analysis of mean scores on intention to conduct AIDS preventive behaviors within and between the experimental group and comparison group before and after the program is shown in Table 14. Paired samples t-test and Student's t-test statistic at 95 percent confidence was used in

the analysis of 15 questions with full scores of 45.

The results of the analysis indicated that the post-test mean score of the experimental group was significantly higher than the pre-test mean score ($p = 0.001$) as shown in Table 14. Similarly, for the comparison group that the post-test mean score was also significantly higher than the pre-test mean score ($p = 0.003$).

There was no statistical difference between that the mean scores of both groups before the program; but after the program the mean score of the experimental group was significantly higher than that of the comparison group ($p = 0.023$).

Table 14: The differences between the pre-test and post-test mean scores on intention to conduct AIDS preventive behaviors within and between the experimental and the comparison groups before and after the program.

Intention to conduct AIDS preventive behaviors	n	\bar{X}	S.D.	df	t-value	p-value
Within group						
Experimental group						
Before the program	69	41.00	5.77	68	3.12	0.001
After the program		43.23	2.43			
Comparison group						
Before the program	67	40.95	4.35	66	3.03	0.003
After the program		42.10	3.91			
Between groups						
Before the program						
Experimental group	69	41.00	5.77	134	0.05	0.959
Comparison group	67	40.95	4.35			
After the program						
Experimental group	69	43.23	2.43	134	2.01	0.023
Comparison group	67	42.10	3.91			

4.3.5 The comparative analysis of mean scores on refusal skills within and between the experimental and comparison groups before and after the program was conducted using Paired samples t-test and Student's t-test statistic at 95 percent confidence. There were 11 questions with full scores of 33.

The results of the analysis are presented in Table 15; for the experimental group it was found that the post-test mean score was significantly higher than the pre-test mean score ($p < 0.001$). Whereas for the comparison group, the pre-test and post-test mean score were not statistically different.

Between groups comparison revealed that before and after the program, the mean score of the experimental group was significantly higher than the mean score of the comparison group ($p < 0.001$).

Table 15: The differences between the pre-test and post-test mean scores on refusal skills within and between the experimental and the comparison groups before and after the program.

Refusal skills	n	\bar{X}	S.D.	df	t-value	p-value
Within group						
Experimental group						
Before the program		22.04	5.32			
After the program	69	28.48	5.33	68	8.24	<0.001
Comparison group						
Before the program		18.97	5.25			
After the program	67	19.80	6.33	66	1.73	0.230
Between groups						
Before the program						
Experimental group	69	22.04	5.32			
Comparison group	67	18.97	5.24	134	3.39	<0.001
After the program						
Experimental group	69	28.48	5.33			
Comparison group	67	19.80	6.33	134	8.65	<0.001

Because the pre-test mean scores on refusal skills of the experimental group and comparison group were significantly different, another statistical test was used to confirm and ensure the validity of the difference on refusal skills of both groups.

The results of the analysis of the difference between pre-test and post-test mean scores on refusal skills confirmed that the difference of the mean scores of the experimental group was significantly higher than that of the comparison group ($p < 0.001$) as shown in Table 16.

Table 16: Comparison the difference of mean scores on the refusal skills before and after the program between the experimental group and the comparison group.

Refusal skills	n	\bar{d}	S.D.	t-value	df	p-value
Experimental group	69	3.46	4.89	4.52	134	<0.001
Comparison group	67	0.12	4.33			

4.3.6 The comparative analysis of mean scores on AIDS preventive behaviors within and between the experimental group and comparison group before and after the program was performed with Paired samples t-test and Student's t-test statistic at 95 percent confidence by considering 34 questions with the scores of 68.

The results in Table 17 show that there was no statistical difference between the pre-test and post-test mean scores in both groups.

Before the program, the mean scores of both groups had no statistical difference; but after the program the mean score of the experimental group was significantly higher than the mean score of the comparison group ($p = 0.033$).

Table 17: The differences between the pre-test and post-test mean scores on AIDS preventive behaviors within and between the experimental and the comparison groups before and after the program .

AIDS preventive behaviors	n	\bar{X}	S.D.	df	t-value	p-value
Within group						
Experimental group						
Before the program		44.64	9.46			
	69			68	1.04	0.302
After the program		46.40	11.78			
Comparison group						
Before the program		42.55	7.70			
	67			66	0.69	0.489
After the program		43.25	7.61			
Between groups						
Before the program						
Experimental group	69	44.64	9.46			
Comparison group	67	42.55	7.70	130	1.41	0.160
After the program						
Experimental group	69	46.40	11.78			
Comparison group	67	43.25	7.61	116	1.86	0.033

CHAPTER V

DISCUSSION

The purpose of this research was to study the effectiveness of a health education program in the development of AIDS preventive behavior of the first year female students of the vocational schools in Ratchaburi Province. The theoretical methodologies used in this research were the Protection Motivation Theory and Social Support Theory and practicing refusal skills for the experimental group. The students in the experimental group were encouraged to participate in every stage of the program so that they would learn the lessons and could apply such knowledge to the present situation.

The following data analysis and hypotheses were discussed.

5.1 Hypothesis 1

A health education program can positively change the behavior of a person participating in the program as compared to before the program. It positively affects of AIDS knowledge, perceived severity of AIDS, perceived vulnerability to AIDS infection, self-efficacy, response efficacy of AIDS preventive behaviors, intention to conduct AIDS preventive behaviors, refusal skills and AIDS preventive behaviors.

Analysis of comparative scores before and after the program within the experimental and the comparison groups.

In the experimental group, it was found that after the program the mean score of AIDS knowledge, perceived vulnerability to AIDS infection, expectation on self-efficacy, expectation on response efficacy of AIDS preventive behaviors, intention to conduct AIDS preventive behaviors, and refusal skills were significantly higher than before the program which were in accordance with the 1st hypothesis. In this study, the factors and conditions of problems concerning the risk behaviors leading to sexually transmitted diseases had been thoroughly reviewed; then appropriate theories, the protection motivation theory and social support theories were chosen to apply with the planning and organizing the health education program. The contents and activities of the program was organized in accordance with the problems, situation, knowledge and interest level as mentioned in the work of Suwan, P.& Suwan, S. (1990: 247) which stated that a health education program should be organized to suit the students on their basic knowledge, need, interest, age level, I.Q and etc. The contents of the health education program should relate to the existing problems and suitable to their interest. This relation would raise students' interest and awareness of the benefit in learning the knowledge provided in the program. Moreover, they could also apply what they had learnt to solve the problem they might face in the real life. Thus, it was in line with the study of Diloksampanh, C (1995: 146) which reported that perceived vulnerability in AIDS infection and intention to conduct AIDS preventive behaviors had influence on the increase of preventive behaviors of sexually transmitted diseases; Jamprasert, J. (1997: 137) also confirmed this findings.

On the perceived severity of AIDS and AIDS preventive behaviors of the experimental group, it was found that after the program the mean score was slightly higher than before the program but with no significant difference which is not in accordance with the 1st hypothesis. This might be because the information on AIDS that it was a dangerous, suffering, fatal and incurable disease was so widespread. Thus, the experimental group had a high level of pre-test mean score and resulted in a little change in the mean scores between before and after the program. On AIDS preventive behavior, a short time for information collection could probably explain the slight change in the mean score. A short period of one month before and one month after the program of which the students in both groups did not have such risk behaviors, and hence, significant difference of mean scores was not found.

However, in the comparison group, it was found that the mean score of intention to conduct AIDS preventive behaviors was significantly higher than before the program. But the difference was not found in other aspects. This might be because the students got high mean score on the intention to conduct preventive behaviors prior to the experiment. Moreover, the data gathering process raised awareness in the comparison group; as a result, their mean scores increased as with the experimental group. Another reason could be because the timing of the health education program was coincided with the AIDS preventive campaign day (December 1, 1999).

5.2 Hypothesis 2

The health education program can cause change in behaviors of the experimental group in a positive ways more than the comparison group on AIDS knowledge, perceived severity of AIDS, perceived vulnerability to AIDS infection, expectation on self-efficacy, expectation on response efficacy of AIDS preventive behaviors, intention to conduct AIDS preventive behaviors, refusal skills and AIDS preventive behaviors.

Results of comparative analysis of mean scores both before and after the program and between the experimental and comparison groups.

It was found that the experimental group, after the program, had positive changes in the AIDS knowledge, perceived vulnerability to AIDS infection, expectation on response efficacy of AIDS preventive behaviors, intention to conduct AIDS preventive behaviors, refusal skills and AIDS preventive behaviors. The finding was in accordance with the 2nd hypothesis. The reason could be that the experimental group had participated in the health education program applying protection motivation theory together with the social support theory which resulted in awareness of activities leading to sexual intercourse and AIDS infection, then determined to adjust their behaviors. Therefore, the mean scores of the experimental group were significantly higher than those of the comparison group. Mackay (1992: 25) stated that in the two perception processes, which are the threat appraisal of AIDS and coping appraisal, would encourage students to have more changes in their unwanted behaviors than the comparison group. The threat appraisal included the perceived severity of AIDS and perceived vulnerability; and the

coping appraisal referred to the expectation in self-efficacy and expectation in response efficacy of AIDS preventive behaviors. Trakulwong, B. (1992: 594) stated that social support had a very important role in health behavior of persons, particularly in physical, mental, preventive, health promotion and following recommendation aspects. The experimental group received social support in form of information from the researcher, encouragement from teachers and parents; therefore, the experimental group had more positive changes than the comparison group. In another study, Jaikaew, S. (1997: a-b) reported that the experimental group receiving social supports, could better adjust their ability in facing problems.

It was found that in the perceived severity of AIDS, expectation on self-efficacy, there was no statistically significant difference between the two groups; the results were not in conformity with the second hypothesis. One explanation could be that both groups had relatively high the pre-test scores, and thus, significant difference was not found after the program.

The changes of mean scores in all variables can be concluded as follows:

AIDS knowledge

From the detailed analysis, it was found that after the program there were several changes in many issues, i.e. knowledge that persons with HIV can infect others, incubation period of HIV and how to behave when the blood test showed a negative result (Table 18).

The pre-experiment scores showed that the level of AIDS knowledge of the majority of both groups were in the low level (Table 9). After the program the level of

knowledge of experimental group was in the medium level; while that of the majority of students in the comparison group were in low level. This result might be caused by the policy of the institutions to focus on campaign against drugs more than against AIDS. Samples in both groups stated that they received the information through newspaper, leaflets, posters, radio and television (Table 7). Teachers teaching health subject in both groups were not graduated in the public health field. Moreover, there was no teacher directly responsible for the experimental group. The comparison group had a responsible teacher with fairly good understanding and knowledge in AIDS. In addition, the teachers in vocational schools had less chances in developing themselves than those in normal schools. Thus, this resulted in the low level of AIDS knowledge in both groups. This fact was confirmed in the studies of Suraiprom, K. (1995: b) and Howharn, C. (1996:95) which reported that vocational students had less AIDS knowledge than normal students. The comparative knowledge on AIDS of both groups, before the program had no statistical difference (Table 9). The reason was that both groups were similar in age and educational level. Moreover, both groups studied in the vocational schools in the same area. However, after the program, the knowledge in AIDS of the experimental group was significantly higher than that of the comparison group (Table 9) which was probably due to the health education program. The program was organized to give information by using presentation with slides, encouraging participation in the test of AIDS spreading, group discussion, and periodically asking questions. The method used was a teaching through full participation on every step so that they understand clearly and could apply the knowledge to the real case (Chanthamolee, S. 1984: 5). The finding was in conformity

with the studies of Epstein, et al. (1995: 1043) and Thomson, et al. (1995: 357) which reported that the result of the increased AIDS knowledge was the reduction in sexual intercourse and in sex partners of high school students. Moreover, they used condom more often when having sexual intercourse.

Perceived severity of AIDS

The analysis on of question in the questionnaire demonstrated that after the program, there were changes in two aspects, i.e. a person infected with HIV could immediately spread the disease to others and AIDS was an incurable disease (Table 19).

The perception of both groups on the perceived severity of AIDS were mostly in the middle level (Table 10) and it remained so even after the program. In comparison of mean scores of both groups before the program, it was found that there was no statistically difference (Table 10). This was because the basic knowledge on AIDS of both groups was not different and they had not attended the health education program at the time. After the test, the mean score of the experimental group showed a little increase. Nevertheless, the change had no statistically significant difference in comparing with the comparison group (Table 10). It was, therefore, concluded that both groups received considerable high scores in the pre-experiment indicating their good background knowledge in AIDS. In addition, AIDS information was continuously publicized which raised the students' awareness of its severity. After the program, the experimental group learnt that AIDS was not that severe if they know how to protect themselves from infection and, therefore, the post-test mean scores increased a little. AIDS infected

persons should be sympathized and they could lived with others in the society. This knowledge decreased their fear of AIDS. The result of the experiment was in accordance with the study of Markmaitree, S. (1995: 113) but was in conflict with the study of Lukhanathone, U. (1997: 144).

Perceived vulnerability to AIDS infection

In the analysis, it was indicated that there were many post-test changes in these issues, i.e. loitering entertainment places might lead to sexual intercourse, drinking alcohol encouraged sexual intercourse without protection and then resulting in AIDS infection, and reading or watching obscene book or media aroused sexual need (Table 19).

The perception in this category of both groups were in the middle level (Table 11). In the post-test, the level of scores on the perception of the majority of the experimental group was in the high level while that of the majority of the comparison group was in the middle level (Table 11). In the comparison of mean scores of both groups before the program there was no statistical difference (Table 11) because they had similar basic knowledge of AIDS and similar activities in their free time. Other main factors were that they lived with their parents and their special activities during their free time. However, the post-test showed that the experimental group's mean score was significantly higher than that of the comparison group (Table 11). Because the participation in health education program of the experimental group encouraged them to increase their perception in the chance of being infected with AIDS. The program was organized to



give information by encouraging participation in the test of AIDS spreading, the modeling in the scenarios from video tape, the model persons, periodically asking questions, group discussion of the problem from the pilot study and conclusion on perceived vulnerability of AIDS infection when they have sexual intercourse with their boyfriends. The result confirmed the study of Dhanasukan, C. (1991: cited by Makmaitree, S., 1995: 119). In the study, it stated that health education needed to solve the problem of AIDS had to consist of many elements. Such elements are information disseminated methodology so that people would aware that they had chances of being infected with HIV; the information had to be clear, valid and going along with the life styles of the receivers of the information. The result of the experiment supported the conclusion of Pacharoen, A. (1996: 99) which reported that living with parents had relationship with perceived vulnerability of AIDS infection in a statistically significant manner. This was because the care and suggestions to avoid risk behaviors given by their parents increased the students perception on risk. It was also in conformity with the study of Lukanathone, U. (1997: 145). This study, however, was in conflict with the study of Mackay (1992: 227) which reported no difference between both groups.

Expectation on self-efficacy

In the analysis, it was indicated many changes in several aspects, i.e. the ability to avoid reading sexually arousing book, the knowledge to reduce sex drive through exercises or hobbies, the ability to stop being kissed or caressed and the ability to persuade their partners to use condom (Table 20).

The pre-test expectation of the majority of the experimental group was in the middle level; while those of the majority of the comparison group was in the high level. After the program, scores of the majority of students in both groups were in the high level (Table 12). The comparison of the pre-test mean scores of both groups was no statistical difference (Table 12) due to the similarity in their age, personal expense, level of education, living condition, special activities during their free time, relationship between the students and their parents including the person who gave suggestions and recommendations concerning their behaviors. Such environments created similar expectation in their self-efficacy, as Chanthamolee, S. (1984: 4) stated that environment was related to the behaviors of a person in a particular aspect. The post-test result showed that the mean score of the experimental group increased more than that of the comparison group. The difference of mean scores between both groups, however, was not statistically significant (Table 12). The increase in mean score of the experimental group might have resulted from various methodologies used in the health education program organized by the researcher including the demonstration of a simulated situation in videotapes, which showed risk behaviors to sexual intercourse and AIDS infection. The participation in the group discussion on the pilot study created systematic learning which, in turn, increased their mean scores. This was in conformity with the study of Iamsupasit, S. (1996: 256) which stated that the model (in the videotape) should be similar to the subjects in the experimental group in sex, race, and attitude. Because they would be confident in their own capacity compared with the model person. Although the experimental group demonstrated a significant change after participating in the health

education program, when their post-test mean scores were compared to those of the comparison group, no significant difference was found. This could be because the comparison group did so well before and after the program, as indicated by their high scores. The result of this study was in conflict with the studies of Diloksampanh, C. (1995: 141) and Pacharoen, A. (1996: 99) which reported the changes of the experimental group was significantly more than that of the comparison group.

Expectation on the response efficacy of AIDS preventive behaviors

Individual analysis of all questions indicated post-test changes in many issues, i.e. joining a party created risk in having sexual intercourse, refraining from alcohol drinking increased awareness in using condom, being caressed and kissed aroused sexual emotion and AIDS infection (Table 20).

The pre-test scores of the majority of the experimental group on the response efficacy of AIDS preventive behaviors was in the middle level while those of the majority of the comparison group were in the high level (Table 13). After the program, the scores of the majority of the experimental group were in the high level while the scores of the majority of the comparison group were in the middle level (Table 13). The comparison between the pre-test mean scores of both groups showed no statistical difference (Table 13). These might be caused by the similarity in many conditions, i.e. age, educational level and living conditions. These similar conditions led to similar expectation in the response efficacy of AIDS preventive behaviors. After the program, the mean score of the experimental group was significantly higher than the score of the comparison group,

(Table 13). This was the result of the health education program in watching the modeling in the risk scenarios from videotape, group discussion and trend of solving the problem including the encouragement to see the benefit of AIDS preventive behaviors and of avoiding risk behaviors to sexual intercourse. Moreover, the dialogue with AIDS infected patients, an important example of being infected due to having sexual intercourse without using condom, was very effective. In addition, teachers and parents also regularly warned the experimental group on these points. This finding was supported by the study of Suwan, P. (1983: 176-177) which stated that perception derived from many factors, e.g. influence of the model persons, knowledge, learning the experiences of others. The expectation of a person on the response efficacy of preventive behaviors on a particular situation depended on the practices that person could perform by himself/herself (Bandura, 1986: 413). It was also in accordance with the studies of Diloksampanth, C. (1995: 90-92), and Pacharoen, A. (1996: 99).

Intention to conduct AIDS preventive behaviors

Individual analysis of all questions indicated post-test changes on many issues, i.e. refraining from reading books or watching pictures of sexual intercourse, refraining from touching the opposite sex, listening to their friends' warning on AIDS, and co-organizing AIDS preventive activities in institution (Table 21).

The mean scores in the intention to conduct AIDS preventive behaviors of the both groups were in the high level for pre-test and post-test (Table 14). The comparison between the pre-test mean scores of both groups showed no statistical difference (Table

14). The indifference in the intention to practice such preventive behaviors might be because both groups were similar in AIDS knowledge, perceived severity of AIDS, perceived vulnerability to AIDS infection, expectation on self-efficacy and expectation on the response efficacy in AIDS preventive behaviors. After the program, it was found that the intention to conduct AIDS preventive behaviors of the experimental group was significantly higher than that of the comparison group. (Table 14). The change was caused by the systematic and continuous participation in the health education program. The relevant program consisted of, giving basic knowledge on AIDS, study from the model persons in the simulated situation through videotape, meeting with the AIDS patients, group discussion to find solutions through rationale and a democratic method. These activities helped members to accept and willing to practice preventive behaviors (Chanthamolee, S., 1984: 100-101). Apart from these, social support from consultant teachers and parents played an important part in their decision to practice AIDS preventive behaviors. In this regard, Trakoolvong, B. (1992: 594) stated that social support played a very important role in shaping health behaviors of persons, disease preventive, health care and following suggestions and it was in accordance with the protection motivation theory (Rogers, 1986: 153-161). The theory mentioned that interaction in combination of danger appraisal and problem-facing appraisal would create another variation which was the intention to practice preventive behaviors. The intention to practice behaviors was an indicator to measure the motivation to practice such behaviors. The health education program, which was organized to create expectation in self-capacity and expectation in the efficiency in preventive behaviors, would encourage

students to follow recommendations and had more intention to conduct AIDS preventive behaviors (Rogers & Mewborn, 1976: 54-61; Beck & Lund cited by Mackay, 1992: 35-36). Bandura (1977: 191-215) stated that the demonstrated activities would be a motive in making a decision, having intention and using effort to have wanted behavior. The result was also in line with the study of Levy, et al. (1995: 145b) which reported that knowledge given to students influenced their intention to conduct preventive behaviors. This was also in line with the study of Levy, et al. (1995: 28a) which found that the number of students in the experimental group who used condom every time they had sexual intercourse, were increasing. Moreover, it also revealed that the intention of the experimental group to use condom had increased more than the comparison group in a statistically significant manner. Such finding was also in conformity with the study of Jamparsert, J. (1997: 137) and Muangnaphor, S. (1999: 123).

Refusal skills on AIDS risk behaviors

The analysis of individual questions from a hypothetical situation indicated the changes that there were several post-test changes in many issues. Such issues were refusing when being persuaded to roam entertainment places, refusing to drink alcohol, refusing to read or watch sex arousing books/videotapes/ movies, refusing to be with a boyfriend in a private place, refusing when being persuaded to have sexual intercourse (Table 22).

The refusal skills scores on having an AIDS risk behavior of the majority of students in the experimental group were in the middle level; while that of the comparison

group were in the low level (Table 15). After the experiment, the refusing skills of the majority of the experimental group were in the high level; while that of the comparison group were still in the low level (Table 15). The pre-test mean scores' comparison of both groups showed a statistically significant difference (Table 15). When the answer of each individual question on the refusal skills was analyzed, it was found that both groups were different. The differences were in the following issues, i.e. being persuaded to drink alcohol, read or watch sex arousing books /videotapes / movies, being persuaded to be with a boyfriend in a private place, and being persuaded to have sexual intercourse. These differences might be because the samples in both groups had some different characteristics, i.e. relationship of students with parents, the parents' occupations, and experiences in having sexual intercourse. Some students in the comparison group used to have experiences in sexual intercourse. These factors made the differences between the two groups which might explain why, after the experiment, score of the refusal skills of the experimental group was significantly higher than that of the comparison group (Table 15). The reasons were because the participation of the experimental group in the health education program in this topic, i.e. observing the model persons in a simulated situation in the videotape, discussing the negative effect of not refusing. In addition, the researcher also applied refusal skills technique, based on the study of the WHO, in the program's activities. A study case was presented with simulated situation, role-play, scenarios and brainstorming to find the best way to refuse, including practice in a simulated situation. Such practices would help create changes in behaviors and the changes could become their habits (Suwan, P.& Suwan, S., 1990: 246). From the analysis, it was found that

the experimental group could appropriately apply the experiences they learnt and practiced. The finding was in line with the studies of Wattanamano, S. (1997: 161) and Jamvithead, P. (1997: abstract).

AIDS preventive behaviors

The analysis on each question indicated the changes in details that there were several post-test changes in many issues. These issues involved not practicing in the following acts: talk about sexual intercourse, watching sexual arousing videotapes/movies, reading books or pictures related to sex and sexual intercourse (Table 23).

The pre-test scores on AIDS preventive behaviors of the majority of students of the experimental group and comparison group were in the low level (Table 17). The post-test scores of the majority of the experimental group on AIDS preventive behaviors had increased to middle level; while that of the majority of the comparison group were still in the low level (Table 17). The comparison between the pre-test mean scores of both groups had no statistically significant difference (Table 17). This might be due to the fact that the students of both groups had similar characteristics. Therefore, there were no differences in AIDS knowledge, in perception on perceived severity of AIDS, perceived vulnerability to AIDS infection, in expectation on self-efficacy, in expectation on response efficacy of preventive behaviors, and in intention to conduct preventive behaviors. In addition, the current environment facilitated risk behaviors. After the experiment there was a change in the experimental group that they had more preventive

behaviors than the comparison group. The difference between both groups had statistically significant difference (Table 17). Moreover, from the risk behaviors record done by the consulting teachers, it was found that the risk behaviors of the experimental group were reduced (Table 24). The phenomenon might be the result of the health education program. The program gave them better perception on several aspects, i.e. perceived severity of AIDS infection, expectation on response efficacy of preventive behaviors, intention to conduct preventive behaviors, and refusal skills, than the comparison group. However, there was no change in the perception on perceived severity of AIDS infection and the expectation on self-efficacy. Nevertheless, social support from parents through love, care and conversation with concern, encouraged the change in students by having more and better preventive behaviors. This was in line with the protection motivation theory of Roger (1986: 153-161) which stated that a person would have health conscious behaviors if the person received information from environment, solicitation and observation, including individual personality and experience. This was also in line with the work of Levy, et al. (1995: 145b) which reported that knowledge was the most important element resulting in more preventive behaviors against sexual intercourse among students. In addition, it also delayed the initial sexual intercourse among those who had no sexual experience and it also increased AIDS preventive behaviors among experienced students (Hubbard, Giese & Rainy, 1998: 243). Another study supporting this finding was the work of Suraiprom, K. (2538: b) which reported that when the students received more knowledge in AIDS, the preventive behaviors of students would increase while the risk behaviors would decrease. The study of

Diloksampanh, C. (1995: 141) also reported that after the experiment, the experimental group had more AIDS preventive behaviors than the pre-experiment and more than the comparison group in a statistically significant manner. However, this finding was in conflict with the study of Maswanya, et al. (1999: 185) which reported that even though the students knew of AIDS infected risk in having sexual intercourse without using condom, they could not change their behaviors. Nilabutra, S. (2542: d) also reported that there was no difference between both groups after the experiment. Moreover, Winwan, A. (1995: 115) reported that there was no relationship between AIDS knowledge and AIDS preventive behaviors among students. Even though the students had good knowledge, they still had AIDS risk behaviors (Kamolpetch, S., 1995: 211).

CHAPTER VI

CONCLUSION

The purpose of this research was to study the effectiveness of the health education program in developing AIDS preventive behaviors of the first year female students of private vocational colleges in Ratchaburi province. The protection motivation theory together with the social support theory and refusal skills training were applied as the guideline in organizing the health education program for the experimental group. The program took into account the importance of problems derived from the information obtained during the pilot study so that the students could learn and apply the knowledge gained to solving real problems.

The health education program consisted of five sessions and comprised many activities. The activities included presentation with slides for reviewing and giving current and updated knowledge on AIDS, question and answer session to promote discussion, participation in an AIDS spread test, students' conclusion on perceived severity and perceived vulnerability to AIDS infection to draw their attention that AIDS was an eminent danger. It also included the viewing of videotape "Once was more than enough" which projected models in simulated situations of risk behaviors to be AIDS infected. Such risk behaviors were, loitering in entertainment places, drinking alcohol, watching sexual arousing media, being privately with a boyfriend and having sexual intercourse without using condom. The models in the videotape was carefully selected to be similar persons as the students and they were divided into group discussion for brainstorming in finding solutions for the models in such a

situation. It also included highlighted presentation of the researcher on how to avoid AIDS risk behaviors and the effects of premature sexual intercourse, the proper use of a condom and the students' awareness were aroused by meeting with the real AIDS infected models. Students were assigned to summarize risk behaviors of the models for better understanding plus refusal skills training which would be a very effective tool in prevention for youths. In refusal skills training, the researcher presented them with principles and steps in refusing when being persuaded by friends or a boyfriend, or being insulted or importuned to have an improper behavior. They were asked to participate in a role-play and to analyze including to find appropriate refusal with negotiating relationship with their friends or boyfriends. They practiced refusal skills according to the simulated situation written by them, i.e. loitering entertainment places, drinking alcohol, watching sexually arousing media, being with a boyfriend in privacy. The role-play was done in front of the class with suggestions from other students and supported by the researcher to use the skills in real life. In addition, teachers gave them social support by giving information on AIDS concerning current situation, severity of AIDS, vulnerability on AIDS infection, how to avoid risk behaviors and how to refuse sex inducing behaviors. Teachers also complimented and encouraged them to continue preventive behaviors. Furthermore, parents participated through corresponding letters initiated by the researcher so that they would be aware of the importance of the problem and would help solving it by fostering relationship within the family and being close consultant to the students. Parents also encouraged to talk with students about AIDS and gave them warning and suggestion to reduce improper behaviors.

This health education program was organized from November 1, 1999 to January 16, 2000. Data and information were gathered using 3 sets of questionnaire on different stages of experiment. The first data gathering was conducted before the program. The questionnaire consisted of data on general characteristic of the sampling groups, AIDS knowledge, perceived severity of AIDS , perceived vulnerability, expectation in self-efficacy, expectation in response efficacy of preventive behaviors, intention to conduct preventive behaviors, refusal skills, and AIDS preventive behaviors. The second data gathering was conducted one week after the experiment using the same questionnaire except the one on their general characteristics. The third data gathering was conducted five weeks after the experiment using the same questionnaire as being used in the second data gathering.

Conclusion of the Research

Part 1: Data on general characteristics of the samples.

The analysis demonstrated that both groups had similar data on their general characteristics. The majority of the experiment and the comparison groups had the following characteristics. They were 16 years of age with average personal allowance of 501-1000 Baht/month which were enough to cover their monthly expense. They lived with parents and their special activities were watching television, videotape and movie. Most of their parents lived together with close relationship. The majority of the parents of the students in the experimental group were employees; while the majority of the fathers of the students in the comparison group were farmers and vendors and the majority of their mothers were vendors. Most of the students in both

groups had close relationship with their parents. In the experimental group they had superficial dialogue with their teachers; while those in the comparison group had dialogue with their teachers only in class. Both groups had experience in being dated by boyfriends and many students were persuaded to join entertainment places. Most of them had boyfriends and they treated their boyfriends in various ways, i.e. some never had physical touch, some used to hold hand, and some had experience in sexual intercourse. In the comparison group, five persons used to have sexual intercourse with boyfriends, the initial intercourse of most of them happened when they were fifteen years old and the lowest age of the first sexual intercourse was 12 years. Most of them reported that they were caressed so that they could not control themselves (4 persons). Two of them regularly used condom when they had sexual intercourse while two of them never used condom before. Most of the experimental group received AIDS information through newspaper, leaflet, poster, distributed sheet as the primary sources, the secondary sources were radio and television. Teachers were the most important source of AIDS information and then doctors and nurses. The persons who gave the students' suggestions and recommendations were parents and the two most popular topics were loitering in entertainment places and being with a boyfriend in a private place.

Part 2: Data of AIDS knowledge, perceived severity of AIDS , perceived vulnerability to AIDS infection , expectation on self-efficacy, expectation on response efficacy of preventive behaviors, intention to conduct preventive behaviors, refusal skills, and AIDS preventive behaviors.

There were details from the analysis as follows:

1. AIDS knowledge: After the experiment the experimental group had correct knowledge on the topic and was more significant than before the experiment. The finding was in conformity with hypothesis 1.1. When the change was compared with that of the comparison group, the result was that the change of the experimental group was more than the comparison group in a statistically significant manner, which was in conformity with hypothesis 2.1.

2. Threat appraisal: the following elements were taken into consideration.

2.1 Perceived severity of AIDS: In the experimental group, the post-test perception was higher than the pre-test one but the change had no statistical significance which was not in accordance with hypothesis 1.2. When compared with the comparison group, the change of the experimental group was slightly greater but it was not statistically significant, which was not in accordance with hypothesis 2.2.

2.2 Perceived vulnerability to AIDS infection: It was found that after the experiment the experimental group had significantly higher perception on the perceived vulnerability than before the experiment. The finding was in conformity with hypothesis 1.3. When the change was compared with that of the comparison group, the result was that the change of the experimental group was significantly greater, which was in conformity with hypothesis 2.3.

3. Coping appraisal: was considered using the following elements:

3.1 Expectation on self-efficacy: It was found that in the experimental group, the post-test expectation in the self-efficacy was higher than the pre-test expectation and the change was statistically significant, which was in accordance

with hypothesis 1.4. When the change was compared with that of the comparison group, the change of the experimental group was more than that of the comparison group but the change was not statistically different, which was not in accordance with hypothesis 2.4.

3.2 Expectation in the response efficacy of preventive behaviors: In the experimental group, the post-test expectation in the efficacy of the preventive behaviors was higher than the pre-test expectation in a statistically significant manner, which was in accordance with hypothesis 1.5. When the change was compared with that of the comparison group, the change of the experimental group was significantly greater which was in accordance with hypothesis 2.5.

4. Intention to conduct AIDS preventive behaviors: It was found that the post-test intention to have the preventive behaviors of the experimental group was higher than the pre-test intention and the change was statistically significant which was in accordance with hypothesis 1.6. When the change was compared with that of the comparison group, the change of the experimental group was more than that of the comparison group in a statistically significant manner, which was in accordance with hypothesis 2.6.

5. Refusal skills on AIDS risk behaviors: The post-test refusal skills against AIDS risk behaviors of the experimental group was higher than the pre-test refusal skills in a statistically significant manner which was in accordance with hypothesis 1.7. When the change was compared with that of the comparison group, the change of the experimental group was more than that of the comparison group in a statistically significant manner, which was in accordance with hypothesis 2.7.

6. AIDS preventive behaviors: It was found that after the experiment, the experimental group had more preventive behaviors than before the experiment but the change was not statistically significant which was not in accordance with hypothesis 1.8. When the change was compared with that of the comparison group, the change of the experimental group was statistically significant more than that of the comparison group, which was in accordance with hypothesis 2.8.

Recommendations from this research

1. The application of the Protection Motivation Theory for creating change in their health should be systematically organized realizing the real situation of the target group. The focus should be on creation of the rational perceived severity and the expectation on self-efficacy. The reason is to create correct perception and understanding on AIDS which will lead to self confidence in self protection and solving AIDS problems in their real lives.

2. A health education program should be organized with variety of formats to raise awareness among participants in AIDS prevention and to emphasize the participation of the students in activities. In order to be able to solve the problems they currently face, they should take these aspects into consideration:

2.1 There should be appropriate and proportionate atmosphere and environment to promote learning. A acquaintance between the researcher and the students should be established before the start of the health education program;

2.2 Because the health education program needs more time than the regular study, the time allocated by the schools for the health program should be

taken into consideration.

3. The health education program applying the protection motivation theory should be organized using the dialogue with the real AIDS infected persons, so that the students recognize the realistic fact about AIDS. Thus it will help create changes in unwanted behaviors.

4. The health education program with refusal skills and practical exercise will help students in their learning to be cautious and they will have the ability to prevent themselves when they face the real situation leading to AIDS infection.

5. In this health education program, it was found that the majority of female students have low level of knowledge on AIDS. The teachers of health subject should monitor and pay more attention to students' risk behaviors. The teachers should promote continuous activities on AIDS information for the students to aware that they are also a risk group. They should be the students' consultants on their health and sex problems. In addition they should give suggestion for students to use condom when having sexual intercourse to prevent sexual transmitted diseases, AIDS, and unwanted pregnancy.

6. Because the health education program was organized in the second semester which had a lot of special activities, such as sport events within and among schools, vocational skill competition and technical exhibition week, therefore, the researcher had chance to meet the experimental group only once a week in the last session of every Wednesday. In the future, the next quasi-experimental research done in schools, the health education program should be planned and organized in the first semester of an academic year.

Recommendations for the further research

1. The study of parents' roles in promoting AIDS preventive behaviors of teenagers or in giving suggestions and recommendations to their teenage offsprings should be carefully studied. The reason is that teenagers are in the risk period of having sexual intercourse, even though they know that using a condom can prevent AIDS.

2. In studying sexual relationship and AIDS, the format used should be a quasi-experimental study. Participants should be divided into small groups and separate between males and females. Such separation will encourage the participants to express themselves better. The activities should promote more discussions and exchange of experiences that will result in more learning and they can use the knowledge in solving real problems in their lives. Thus, this health education program can be used to solve AIDS problems of other groups.

3. There should be more in depth study on sexual intercourse out of wedlock of teenagers, particularly on the facts that they do not use condom and have more sex partners. Moreover, there should be more studies on sexual transmitted diseases, using surveillance technique on AIDS risk behaviors and unwanted pregnancy, taking into account the differences in lifestyles, problem conditions, age and local culture. The studies should cover slum teenagers and street children. The studies may be able to explain the channel and format of AIDS spreading.

4. Studying should be conducted on the roles of health education teachers and school administrators in encouraging and promoting AIDS protective behaviors of students.

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Table 18 Analysis of the differences of the means scores between the experimental and comparison groups on pre-test and post-test separated on AIDS knowledge

questions	timing	exp. group		comp. group		t	p
		\bar{x}	SD.	\bar{x}	SD.		
1.Currently, which groups of population is the most risk group	pre-test	.28	.45	.18	.39	1.34	.183
	post-test	.29	.46	.18	.39	1.53	.129
2.Which of the following acts does not lead to AIDS infection	pre-test	.46	.50	.51	.50	.51	.613
	post-test	.54	.50	.58	.50	.54	.593
3.What stage that the AIDS infection person can spread AIDS	pre-test	.83	.38	.73	.45	1.33	.187
	post-test	.86	.35	.60	.49	3.49	<.001
4.What is the longest duration since the receiving to detecting HIV	pre-test	.23	.43	.21	.41	.32	.749
	post-test	.43	.50	.25	.44	2.25	.013
5.After being infected HIV, duration of AIDS symptoms appearance will appear in accordance with these factors except one face, which one is the exception	pre-test	.19	.39	.28	.45	1.30	.195
	post-test	.28	.45	.24	.43	.48	.629
6.What is not the characteristic of the first stage of AIDS infection person	pre-test	.29	.46	.36	.48	.85	.398
	post-test	.61	.86	.48	1.01	.60	.548
7.What is the suspicious symptom indicating AIDS infection	pre-test	.57	.50	.57	.50	.02	.982
	post-test	.65	.48	.54	.50	1.36	.175
8.What is the causes of death of those infected with AIDS	pre-test	.78	.42	.82	.39	.56	.579
	post-test	.86	.35	.82	.39	.54	.592
9 What is the test to check HIV infection	pre-test	.71	.46	.73	.45	.27	.785
	post-test	.49	.50	.75	.44	3.13	.001
10.How a marriage couple should prepare to be safe from AIDS infection	pre-test	.96	.21	.96	.21	.04	.971
	post-test	.97	.17	.94	.24	.87	.387
11.A woman with AIDS should not be pregnant because....	pre-test	.99	.12	.99	.12	.02	.983
	post-test	.99	.12	.94	.24	1.39	.168
12. What is the positive blood test for AIDS means	pre-test	7.25E-02	.26	.10	.31	.65	.514
	post-test	.23	.43	.13	.34	1.47	.143
13. When the blood test for AIDS showed "negative result" what should the person behave	pre-test	.39	.49	.27	.45	1.52	.130
	post-test	.43	.50	.30	.46	1.65	.050
14. When the blood test for AIDS showed "negative result" what should the person behave	pre-test	.52	.50	.54	.50	.18	.857
	post-test	.48	.50	.55	.50	.86	.392
15.What should a person does to prevent AIDS infection though sexual intercourse	pre-test	1.00	.00	.93	.26	2.30	.024
	post-test	.93	.26	.93	.26	.05	.962
16.What methodology is the doctors use to treat AIDS infection	pre-test	.54	.50	.61	.49	.89	.376
	post-test	.54	.50	.67	.47	1.62	.054

Table 19 Analysis of the difference of means scores between the experimental and comparison groups on pre-test and post-test separated on threat appraisal

questions	timing	exp. group		comp. group		t	p
		\bar{x}	SD.	\bar{x}	SD.		
Perceived severity of AIDS							
1.AIDS is the most noxiousness disease to human and society	pre-test	2.87	.45	2.93	.32	.83	.406
	post-test	2.83	.48	2.91	.29	1.24	.218
2.AIDS infected person is despised by society it can reduce	pre-test	2.42	.79	2.52	.73	.78	.435
	post-test	2.38	.81	2.40	.76	.19	.846
3.Currently, AIDS is an incurable disease	pre-test	2.61	.55	2.52	.50	.96	.341
	post-test	2.58	.55	2.43	.61	1.47	.143
4.Being with infected with AIDS, the costs for treatment is very expensive	pre-test	2.45	.78	2.46	.61	.12	.911
	post-test	2.57	.67	2.57	.50	.02	.985
5.AIDS infection will lead to death before due time	pre-test	2.64	.66	2.67	.66	.30	.765
	post-test	2.55	.74	2.84	.41	2.79	.003
6.Being infected with AIDS will affect the life of the family	pre-test	2.75	.60	2.85	.44	1.08	.283
	post-test	2.64	.62	2.76	.50	1.29	.200
7.When HIV enters into the body that the person can immediately spreads AIDS	pre-test	1.91	.74	1.81	.66	.89	.375
	post-test	2.28	.75	2.00	.80	2.08	.018
8.After being infected with AIDS the patient will be suffered from chronic diseases under the end of his life	pre-test	2.61	.67	2.66	.54	.46	.646
	post-test	2.43	.81	2.66	.62	1.80	.037
9.Being infected with AIDS the patient will be vulnerable to other diseases	pre-test	2.88	.32	2.79	.45	1.39	.166
	post-test	2.88	.32	2.79	.45	1.39	.166
10.The AIDS patient should have frequent sexual intercourse because it can reduce AIDS virus in his body	pre-test	2.91	.28	2.85	.47	.93	.352
	post-test	2.86	.43	2.84	.51	.24	.812
11.A doctor can cure AIDS patient that is in the first stage	pre-test	2.10	.65	2.18	.67	.69	.493
	post-test	2.38	.62	2.16	.64	1.96	.025
12.Blood donations during AIDS infected will reduce AIDS virus in the patient	pre-test	2.75	.47	2.78	.52	.27	.790
	post-test	2.81	.46	2.76	.55	.58	.565
13. Having blood-test for AIDS is a shameful thing	pre-test	2.93	.31	2.75	.56	2.32	.011
	post-test	2.86	.43	2.81	.50	.61	.540
perceived vulnerability to AIDS infection							
1.Avoiding sexual intercourse is a way to prevent AIDS infection	pre-test	2.64	.69	2.75	.61	.97	.332
	post-test	2.88	.40	2.81	.50	1.35	.178
2. sexual intercourse while being is normal	pre-test	2.88	.37	2.78	.52	1.40	.163
	post-test	2.88	.40	2.78	.52	1.35	.178
3.Having sexual intercourse with only one boyfriend is a certain factor	pre-test	2.57	.56	2.49	.66	.70	.488
	post-test	2.59	.63	2.43	.66	1.47	.145

Table 19 (continued)

questions	timing	Exp. group		comp. group		t	p
		\bar{x}	SD.	\bar{x}	SD.		
4.Going in entertainment places cannot arouse sexual of students and will not lead to sexual intercourse	pre-test	2.36	.71	2.31	.72	.40	.690
	post-test	2.52	.66	2.19	.76	2.69	.004
5.Drinking alcohol is a factor encouraging unprotectively sexual intercourse and can result in AIDS infection	pre-test	2.58	.67	2.72	.60	1.25	.213
	post-test	2.81	.46	2.66	.62	1.65	.050
6.Reading a book and watching a picture on sexual intercourse may arouse sexual desire	pre-test	2.43	.67	2.48	.59	.39	.694
	post-test	2.80	.44	2.63	.60	1.88	.031
7.Watching an X or R rated video or movie may lead to sexual intercourse	pre-test	2.67	.61	2.72	.57	.49	.625
	post-test	2.86	.61	2.72	.57	.49	.627
8.Being alone with a person of opposite sex is a risk to have sexual intercourse	pre-test	2.45	.72	2.46	.70	.11	.913
	post-test	2.68	.56	2.60	.58	.86	.389
9.The sexual touch between persons of opposite sex is not a risk factor to AIDS infection	pre-test	2.00	.77	1.90	.80	.78	.438
	post-test	2.12	.83	1.90	.78	1.59	.114
10.Taking antibiotic medicine prior sexual intercourse can prevent the AIDS infection	pre-test	2.25	.50	2.36	.57	1.22	.225
	post-test	2.52	.50	2.33	.56	2.12	.018
11.Outside intravenous ejaculation is a method to prevent AIDS infection	pre-test	2.20	.53	2.18	.52	.26	.792
	post-test	2.38	.60	2.24	.61	1.34	.183
12.Cleaning sex organ with antiseptic solution immediately after sexual intercourse can prevent AIDS infection	pre-test	2.22	.54	2.36	.57	1.48	.141
	post-test	2.64	.57	2.36	.62	2.74	.003
13.Men who have given up the habit of having sexual intercourse with prostitutes should be safe from AIDS	pre-test	2.33	.66	2.58	.65	2.21	.029
	post-test	2.59	.65	2.63	.60	.30	.761
14.Having oral sex will not AIDS infection	pre-test	2.14	.60	2.12	.70	1.03	.303
	post-test	2.12	.70	2.12	.71	.03	.977
15.It's certain fact that a clean and good looking person has no AIDS virus in his body	pre-test	2.55	.61	2.78	.42	2.52	.006
	post-test	2.87	.38	2.69	.56	2.23	.013
16.One sexual intercourse with an AIDS infected person is not enough to be infected with AIDS	pre-test	2.58	.58	2.69	.58	1.07	.285
	post-test	2.80	.41	2.64	.57	1.83	.035

Table 20 Analysis of the difference of means scores between the experimental and comparison groups on pre-test and post-test separated on coping appraisal

questions	timing	exp. group		comp. group		t	p
		\bar{x}	SD.	\bar{x}	SD.		
Self-efficacy in AIDS prevention behavior							
1.The student cannot refuse when being persuaded by friends to go to entertainment places	pre-test	2.64	.59	2.63	.65	.10	.919
	post-test	2.45	.72	2.64	.60	1.70	.045
2.When you are being indeed to go to a Disco-theque by your boyfriend, you cannot refuse the inducement	pre-test	2.54	.74	2.48	.79	.45	.655
	post-test	2.62	.69	2.61	.70	.09	.925
3.In a party, you cannot refuse drinking alcohol when you are importuned by friends to drink	pre-test	2.48	.76	2.40	.80	.56	.574
	post-test	2.39	.77	2.43	.70	.33	.743
4.You think that you can avoid reading book or watching picture with sexual intercourse	pre-test	2.43	.79	2.54	.72	.78	.434
	post-test	2.78	.51	2.57	.61	2.23	.013
5.You can successful refuse every time you are persuaded to watch X or R rated video or movie	pre-test	2.39	.75	2.31	.78	.59	.555
	post-test	2.58	.60	2.42	.70	1.44	.151
6.You believes that you can avoid being alone with a person of opposite sex	pre-test	2.33	.70	2.39	.74	.44	.658
	post-test	2.51	.61	2.45	.63	.56	.578
7.When being alone with boyfriend you can control yourself and can avoid sexual intercourse	pre-test	2.65	.66	2.70	.60	.45	.650
	post-test	2.72	.54	2.79	.41	.81	.421
8.When having sexual need, you can release yourself with masturbation	pre-test	2.26	.80	2.36	.77	.72	.471
	post-test	2.45	.80	2.40	.78	.34	.732
9.You can release sex need through exercising ,playing, music or sports al etc.	pre-test	2.93	.31	2.84	.48	1.32	.191
	post-test	3.00	.00	2.90	.35	2.41	.009
10.When you are being persuaded to talk about sexual intercourse you can avoid by walking away to do an other useful activities	pre-test	2.77	.49	2.52	.68	2.41	.009
	post-test	2.74	.61	2.61	.55	1.28	.204
11.When you are being kissed or caressed by your boyfriend you can stop those acts	pre-test	2.78	.48	2.69	.56	1.08	.283
	post-test	2.84	.41	2.64	.54	2.41	.008
12. When you are being solicited to have sexual intercourse you always yields to solicitation	pre-test	1.14	.35	1.18	.55	.43	.666
	post-test	1.13	.35	1.30	.60	1.88	.031
13.You can persuade your partner how to use condom in having sexual intercourse	pre-test	2.28	.68	2.40	.65	1.11	.268
	post-test	2.64	.68	2.33	.75	2.71	.004

Table 20 (continued)

questions	timing	exp. group		comp. group		t	p
		\bar{x}	SD.	\bar{x}	SD.		
Response efficacy in AIDS prevention behavior.							
1.Loitering entertainment places does not create a risk chance of having sexual intercourse.	pre-test	2.17	.75	2.33	.75	1.21	.230
	post-test	2.30	.83	2.15	.80	1.11	.260
2.Going to parties creates a risk chance of having sexual intercourse	pre-test	1.94	.76	1.87	.80	.57	.569
	post-test	2.30	.67	1.94	.83	2.81	.003
3.Avoid drinking alcohol makes student to have consciousness and can remind yourself to use condom in having sexual intercourse	pre-test	2.57	.70	2.66	.66	.78	.434
	post-test	2.77	.52	2.60	.68	1.65	.050
4.Being preoccupied with reading books or pictures concerning sexual intercourse will arouse sex need	pre-test	2.52	.68	2.66	.62	1.21	.227
	post-test	2.71	.55	2.69	.56	.25	.803
5.Watching an X or R rated videotape or movie encourages sexual intercourse	pre-test	2.67	.61	2.64	.60	.24	.810
	post-test	2.81	.49	2.90	.31	1.19	.235
6.Being together with a person of opposite sex in a private place may be the start of sexual intercourse and AIDS infection.	pre-test	2.46	.70	2.49	.75	.23	.817
	post-test	2.71	.57	2.67	.61	.38	.705
7.Being caressed and kissed by your boyfriend does not lead to sexual intercourse and AIDS infection	pre-test	1.87	.77	1.90	.78	.20	.845
	post-test	2.25	.77	1.96	.75	2.23	.013
8.It is quite certain that sexual intercourse with only one partner is safe from AIDS infection.	pre-test	2.36	.64	2.42	.72	.48	.635
	post-test	2.51	.63	2.37	.69	1.18	.240
9.The correct used of condom on every time when having sexual intercourse make you safe from AIDS infection.	pre-test	2.41	.67	2.58	.55	1.67	.048
	post-test	2.58	.65	2.46	.64	1.06	.291
10.When you have sex need the self masturbation is a safe method from AIDS infection.	pre-test	2.36	.73	2.43	.66	.59	.554
	post-test	2.39	.71	2.58	.58	1.71	.044
11.Exercising and playing sport reduce sex drive and help prevent AIDS infection from sexual intercourse	pre-test	2.80	.47	2.76	.52	.42	.675
	post-test	2.84	.50	2.88	.37	.53	.599
12.Avoiding from an environment encouraging sexual intercourse can reduce sexual intercourse	pre-test	2.70	.55	2.72	.52	.23	.821
	post-test	2.78	.48	2.78	.45	.08	.936
13.Consultation with a health office when you have a query or need suggestions on AIDS will reduce your worrisome and you can behave	pre-test	2.94	.24	2.85	.36	1.75	.041
	post-test	2.93	.26	2.91	.29	.36	.717

Table 21 Analysis of the difference of means scores between the experimental and comparison groups on pre-test and post-test separated on intention to conduct AIDS preventive behaviors

questions	timing	exp. group		comp. group		t	p
		\bar{x}	SD.	\bar{x}	SD.		
1. You has intention to stop going to entertainment places.	pre-test	2.65	.59	2.63	.55	.26	.796
	post-test	2.78	.42	2.72	.52	.82	.411
2. You has intention to quit drinking alcohol.	pre-test	2.77	.55	2.78	.45	.09	.926
	post-test	2.75	.43	2.75	.47	.09	.925
3. You has intention to restraining yourself for reading books or pictures concerning sexual intercourse.	pre-test	2.77	.52	2.78	.49	.09	.926
	post-test	2.91	.28	2.75	.47	2.49	.007
4. You has intention to refuse if you is persuaded to watch X or R rated videotape or movie.	pre-test	2.78	.51	2.88	.37	1.28	.202
	post-test	2.91	.28	2.80	.37	.57	.567
5. You has intention to avoid staying alone with a person of opposite sex.	pre-test	2.45	.61	2.34	.71	.94	.350
	post-test	2.67	.50	2.61	.58	.59	.556
6. You has intention to avoid touching a person of opposite sex .	pre-test	2.54	.61	2.43	.66	.95	.342
	post-test	2.75	.43	2.57	.58	2.11	.018
7. You determine not to date with promiscuous boyfriend.	pre-test	2.75	.58	2.85	.40	1.14	.256
	post-test	2.93	.26	2.91	.34	.33	.741
8. You has intention to exercise, sports and etc. to release sex drive.	pre-test	2.83	.48	2.88	.33	.77	.444
	post-test	2.96	.27	2.94	.24	.37	.710
9. You has intention to refrain having sex with your boyfriend	pre-test	2.80	.50	2.78	.52	.24	.811
	post-test	2.96	.52	2.90	.35	1.22	.223
10. You has intention to practice refusal skills to avoid a behavior leading to sexual intercourse.	pre-test	2.83	.45	2.85	.44	.32	.747
	post-test	2.94	.24	2.88	.37	1.15	.252
11. You will avoid having sexual intercourse.	pre-test	2.88	.40	2.85	.44	.46	.644
	post-test	2.97	.17	2.90	.35	1.58	.118
12. You has intention to refuse having sex with the one who will not use condom	pre-test	2.86	.49	2.84	.48	.23	.818
	post-test	2.96	.21	2.91	.29	1.07	.286
13. You will have conversation with parent about AIDS.	pre-test	2.65	.61	2.54	.70	1.01	.312
	post-test	2.83	.42	2.76	.50	.83	.410
14. You will warn your peers on AIDS	pre-test	2.74	.53	2.75	.53	.08	.938
	post-test	2.97	.17	2.79	.45	.31	.001
15. You, your peers and teachers will join in organizing AIDS prevention activities.	pre-test	2.71	.55	2.79	.48	.92	.360
	post-test	2.94	.24	2.85	.36	1.75	.041

Table 22 Analysis of the difference of means scores between the experimental and comparison groups on pre-test and post-test separated on refusal skills with negotiate

questions	timing	exp. group		comp. group		t	p
		\bar{x}	SD.	\bar{x}	SD.		
1. How does you say if you are persuaded to go to entertainment place such as a karaoke bar or disco theque knowing that it may lead to unsafe sexual intercourse	pre-test	1.94	1.29	1.66	1.33	1.27	.207
	post-test	2.64	.87	1.46	1.26	6.30	<.001
2. How does you say if you importuned to go to an entertainment place even after the refusal.	pre-test	1.97	1.01	1.73	.88	1.47	.144
	post-test	2.54	.85	1.78	.81	5.32	<.001
3. How does you say if your boyfriend persuades you to go to an after exam party.	pre-test	1.99	1.09	1.91	1.10	.40	.690
	post-test	2.65	.72	1.85	1.03	5.22	<.001
4. How does you say if you is regularly persuaded to drink alcohol by your peers	pre-test	1.99	1.08	1.45	1.08	2.91	.002
	post-test	2.62	.77	1.55	1.13	6.47	<.001
5. How does you say if your friends still importune you to drink alcohol by threatening to cut you out of group	pre-test	1.03	.64	.88	.71	1.28	.202
	post-test	2.61	.84	1.93	1.18	3.86	<.001
6. How does you say if you are persuaded by her friends to see book on pornography.	pre-test	2.00	.87	1.64	.75	2.56	.006
	post-test	2.52	.80	1.72	.85	5.70	<.001
7. How does you say if you are persuaded by her friends to sexual intercourse.	pre-test	2.07	1.06	1.78	.97	1.70	.045
	post-test	2.65	.72	1.78	1.03	5.73	<.001
8. How does you say if your friend are persuaded you to watching sexually arousing videotape or movie.	pre-test	2.16	.74	1.90	.74	2.08	.020
	post-test	2.62	.64	1.87	.83	5.92	<.001
9. How does you say if you is importuned by your friends to watch sexually arousing videotape or movie even after refuse.	pre-test	2.38	.82	2.16	.90	1.44	.152
	post-test	2.65	.59	2.06	1.03	4.14	<.001
10. How does you say if your boyfriend asks to be alone with you in a private place.	pre-test	2.16	.58	1.78	.98	2.76	.003
	post-test	2.25	.76	1.79	.81	3.40	<.001
11. How does you say if you are solicited by your boyfriend to have sexual intercourse citing love and long relationship	pre-test	2.36	.69	2.09	.79	2.15	.001
	post-test	2.72	.51	2.03	.80	6.07	<.001

Table 23 Analysis of the difference of means scores between the experimental and comparison groups on pre-test and post-test separated on AIDS preventive behaviors

questions	timing	exp. group		comp. group		t	p
		\bar{x}	SD.	\bar{x}	SD.		
(1.) Does the student has the following behaviors?							
1.1 Loitering entertainment place	pre-test	1.64	.54	1.57	.53	.77	.444
	post-test	1.65	.56	1.57	.53	.91	.367
1.2 Going to the parties with friends	pre-test	1.33	.53	1.27	.57	.69	.494
	post-test	1.41	.52	1.34	.57	.67	.504
1.3 Drinking alcohol	pre-test	1.61	.52	1.61	.49	.04	.970
	post-test	1.58	.58	1.58	.50	.03	.980
1.4 Reading books or photographs relate to sex or sexual intercourse	pre-test	1.74	.44	1.55	.53	2.23	.014
	post-test	1.86	.43	1.67	.50	2.28	.012
1.5 Talk about sexual intercourse	pre-test	1.43	.56	1.34	.59	.93	.354
	post-test	1.57	.56	1.39	.60	1.78	.034
1.6 Watching X or R rated videotapes or movies	pre-test	1.86	.35	1.73	.45	1.79	.038
	post-test	1.90	.35	1.76	.46	1.95	.027
(2.) Does the student use the following behaviors with her boyfriend?							
2.1 being together in a private place	pre-test	1.67	.47	1.58	.48	.93	.355
	post-test	1.68	.53	1.52	.64	1.58	.116
2.2 Going together without a third person	pre-test	1.62	.49	1.61	.65	.11	.909
	post-test	1.65	.54	1.61	.65	.39	.694
2.3 Holding with other hand	pre-test	1.38	.52	1.25	.64	1.20	.217
	post-test	1.28	.54	1.19	.58	.84	.400
2.4 Hugging each other	pre-test	1.12	.32	1.09	.48	.37	.708
	post-test	1.04	.32	1.06	.46	.24	.811
2.5 Hugging, kissing, fondling each other with clothes	pre-test	1.06	.24	1.06	.38	.03	.975
	post-test	1.00	.24	1.04	.32	.69	.489
2.6 Hugging, kissing, fondling each other without clothes	pre-test	1.00	.00	1.04	.27	1.35	.182
	post-test	.99	.12	1.01	.27	.97	.321
2.7 having sexual intercourse with condom	pre-test	1.01	.12	1.03	.30	.39	.698
	post-test	.94	.24	.96	.21	.35	.730
2.8 having sexual intercourse without condom	pre-test	1.00	.00	1.04	.27	1.35	.182
	post-test	.99	.12	.99	.12	.02	.983
(3) activities to release sexual need and how often each activities is used?							
3.1 paying attention to studying	pre-test	.58	.50	.66	.48	.92	.359
	post-test	.72	.45	.60	.57	1.57	.118
3.2 exercise or playing sport	pre-test	.51	.50	.66	.48	1.77	.039
	post-test	.75	.43	.66	.48	1.24	.219

Table 23 Analysis of the difference of means scores between the experimental and comparison groups on pre-test and post-test separated on AIDS preventive behaviors (cont.)

questions	timing	exp. group		comp. group		t	p
		\bar{x}	SD.	\bar{x}	SD.		
3.3 listening and playing music	pre-test	.68	.47	.88	.33	2.88	.025
	post-test	.87	.34	.79	.47	1.22	.226
3.4 reading books or other magazines	pre-test	.45	.50	.63	.49	2.09	.019
	post-test	.57	.50	.52	.50	0	.619
3.5 doing nothing	pre-test	1.26	.78	1.25	.82	.05	.959
	post-test	1.14	.86	1.22	.81	.55	.584
3.6 talking with a friend	pre-test	.62	.49	.70	.46	.96	.338
	post-test	.81	.39	.66	.48	2.06	.021
3.7 watching X or R rated videotapes or movies	pre-test	1.03	.34	1.01	.33	.25	.806
	post-test	1.01	.32	1.01	.27	.01	.993
3.8 having sexual intercourse with the boyfriend	pre-test	.99	.27	.97	.24	.35	.729
	post-test	.97	.17	1.01	.27	1.13	.262
3.9 doing masturbation	pre-test	4.35E-02	.21	8.96E-02	.29	1.07	.286
	post-test	7.25E-02	.26	7.46E-02	.26	.05	.962
(4.) Does the student refuse or avoid to have sexual intercourse and how often?							
4.1 going to entertainment places	pre-test	1.84	.83	1.76	.76	.58	.563
	post-test	1.74	.82	1.70	.74	.28	.779
4.2 drinking alcohol	pre-test	1.87	.80	1.63	.76	1.81	.036
	post-test	1.77	.81	1.58	.70	1.43	.154
4.3 Reading books and watching photographs concerning sex and sexual intercourse	pre-test	1.68	.87	.55	.74	.93	.353
	post-test	1.64	.89	1.63	.83	.07	.942
4.4 watching X or R rated videotapes and movies	pre-test	1.65	.90	1.58	.84	.47	.640
	post-test	.59	.88	1.58	.82	.08	.934
4.5 being together with a person opposite sex	pre-test	1.77	.73	1.60	.70	1.40	.165
	post-test	1.74	.80	1.69	.72	.40	.688
4.6 being together with boyfriend in a private place	pre-test	1.74	.80	1.49	.70	1.91	.029
	post-test	1.68	.87	1.69	.80	.04	.970
4.7 sexually arousing touch with the boyfriend	pre-test	1.71	.84	1.55	.76	1.14	.255
	post-test	1.67	.87	1.61	.80	3.8	.703
4.8 Hugging and kissing with the boyfriend	pre-test	1.70	.91	1.45	.74	1.74	.047
	post-test	1.64	.91	1.58	.84	.37	.711
4.9 talking about sexual intercourse	pre-test	1.67	.82	1.63	.78	.29	.771
	post-test	1.58	.85	1.61	.83	.22	.823
4.10 Having sexual intercourse using condom with the boyfriend	pre-test	1.65	.94	1.55	.86	.65	.518
	post-test	1.88	1.60	1.52	.86	1.65	.050
4.11 having sexual intercourse using no condom with the boyfriend	pre-test	1.64	.94	1.45	.80	1.27	.207
	post-test	1.81	1.58	1.67	.86	.64	.522

Table 24 Number and percentage of the risk behaviors recorded form of the experimental group

Date/ month / year.....

Record by.....

Risk behaviors	number of the experimental group						note
	the first		the second		the third		
	n	%	n	%	n	%	
1. attending the entertainment places							
- practice	27	39.13	5	7.25	1	1.45	
- no practice	42	60.87	64	92.75	68	98.55	
2. consuming alcohol drinks							
- practice	18	26.09	9	13.04	-	-	
- no practice	51	73.91	60	86.96	69	100	
3. watching sex arousing media							
3.1 books / posters							
- practice	24	34.78	1	1.45	-	-	
- no practice	45	65.22	68	98.55	69	100	
3.2 videotapes / movies							
- practice	14	20.29	-	-	-	-	
- no practice	55	79.71	69	100	69	100	
4. being privately together / touching with boyfriends							
- practice	22	31.88	3	4.35	-	-	
- no practice	47	68.12	66	95.65	69	100	
5. refusal skills without negotiate to avoid the risk behaviors							
- practice	38	55.07	69	100	69	100	
- no practice	31	44.93	-	-	-	-	

BIOGRAPHY



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