CHAPTER 3

METHODOLOGY

This chapter contains descriptions of the research design, sample and setting, instrumentation, data collection procedures, data analysis procedures, and protection of human subjects.

Research Design

The design of the study used both qualitative and quantitative approaches with an emphasis on the quantitative component. Qualitative methodology was used in this study primarily to obtain a holistic view of respondents' sexual experience. Moreover, qualitative method was used to provide study participants with an opportunity to express their views and perspectives in their own terms and reference of understanding and to gain greater insights into the thought process underlying unprotected sex, as well as to expand the empirical findings from a survey.

Quantitative methodology, cross-sectional design, was used in this study to examine the psychosocial factors and gender-based factors that influence sexual risk behavior among young people. The determinants in this study included well-accepted psychosocial factors (attitude or beliefs, norms, intention, and self-efficacy) and relevant constructs related gender-power relation (gender role perception and power in sexual relationship). Based on the literature, demographic and socioeconomic

status (e.g. age, sex, living with parent, economic status) were considered in the present study.

Quantitative Survey

Population, Sample, and Sampling Method

Population in the study were male and female adolescents who are studying in upper secondary schools, vocational colleges, and a university in a province in the eastern area of Thailand.

Inclusion criteria consisted of: (a) participants selected from the secondary public schools, vocational public schools, and the regional public university located in a province in the east of Thailand, (b) enrolled students who were studying in full time programs in the academic year 2004 and (c) students who were unmarried. Exclusion criteria were students who were homosexuals and did not want to participate in the study.

Stratified and purposive sampling methods were used to get the sample through the following steps that are summarized in Figure 3 (see appendix B3).

Step I. Two district secondary schools from Muang district and two district schools from suburbs were sampled. Three vocational colleges were selected (one from Muang district and two from suburbs). The regional public university was purposively selected to represent students of that age group.

Step II. There were different fields in each educational level. Each field has different ability of the students such as pure science, applied science, and social science. Therefore, at least two main studying fields or departments, namely, applied science, and pure sciences were classified in each educational level.

Step III. A class in each field was selected later according proportional sampling and sex. Nevertheless, the final step to obtain respondents depended on volunteer participating. Regular- program students in schools and full-time undergraduate students in the university were a unit of analysis of the research.

Sample Size

The sample size for a school-based survey was based on the proportion of sexual experience among adolescents from the recent national survey by MOPH (2003). The ratio of 2 in 5 female adolescents who reported having ever had sexual experience was used to estimate the efficient sample size. This was calculated by the formula of Cochran (1977). The stratified and purposive sampling methods were used. The required sample, after adjusting response rate, was 1,200 (see in Appendix A). Requirements for the sample group were based on sex and educational level, having about 400 members for each group (see the summarized sample in table 3-1).

Table 3-1

Summary of Sampling

Schools	Number of schools	Number of Classes	Number of students	
			Female	Male
Upper secondary school			204	175
Muang	2	6 (3 science 3	M4 =85	M4 = 71
Suburbs	2	language)	M5 = 87	M5 = 76
		6 (3 science 3	M6= 32	M6= 28
		language)		
Vocational Schools			206	223
Muang	1	5	Cert.1=73	Cert.1=88
Suburbs	2	8	Cert.2=65	Cert.2=60
			Cert.3=68	Cert.3=75
University	1	5	186	175
		Nursing	29	-
		Engineering	23	98
		Sport Science	42	44
		Art	27	33
		Humanities & social	65	-

Data Collection

Upon the Research Ethics Review Committee, Faculty of Nursing, Chiang Mai University**,** a request for a random of divisions or programs currently available in institutions, and participants aged 15 and over were made to each register office. Stratified and purposive samplings were obtained. Only students who volunteer to participate were given questionnaire packages. Volunteers were solicited from

enrolled students in a large lecture class. The researcher and research assistants distributed self-administered questionnaires to participants at the convenient time determined by liaison between target settings and researcher. Participants who agreed to participate in the study were asked to provide oral consent and complete the questionnaire in private place. They were also seated in such a way as to ensure their privacy. Trained graduate and undergraduate research assistants were available to answer any questions that participants would have regarding the questionnaire. The questionnaire took between 30 to 45 minutes to complete. To ensure the confidentiality and anonymity, no names or personal identifiers were collected during data collection. Questionnaires were returned in the sealed envelope provided. Individuals were given a pen or a small gift as an incentive for participating after completing the questionnaire.

Period of Survey

The survey study was conducted over the period of January to Febuary 2005.

Instrumentation and Development

The process for instrument development had three stages: (1) generation of items, (2) focus-group testing of the draft instrument and revision, and (3) pre-testing of final draft in real situation.

First, the questionnaire was developed by using the theories and models cited, empirical research and other instruments that measured the constructs of interest was submitted to 5 experts, who were experienced in the areas of adolescent pregnancy and HIV and STD prevention, and were familiar with the behavioral theories. The interrater agreement score (IR) and the average Index of Content Validity (CVI) of

each construct were acceptable, which had been reported in ranging from .80 to 1.00 (see in Appendix B).

Next, during administering to six focus groups of adolescents to determine whether the items were understandable, the questionnaire was revised based on focus group feedback. Necessary modifications of questionnaires were done accordingly.

The last step, pre-testing of the questionnaire was conducted among 50 female and 50 male students from Dec 24-25, 2004. It was then revised again. In addition, regarding validity assessment in this thesis, in-depth interview data has been applied to validate the questions.

With regard to reducing measurement error related to respondents' privacy concerns and being appropriate with respondents' level of education, all measures were assessed via self-administered questionnaires (SAQs) (Catania et al., 1990).The questionnaires were organized into two forms, one for male adolescents and one for female adolescents. Almost all of the questions were similar; however, wording and context of items related to the sexual self-efficacy construct and power in sexual relationships were different for each gender.

The questionnaire contained the following six sections: background characteristics (measures of socioeconomic and demographic background); health history and behavioral risks; attitudes and beliefs (i.e., attitude about sexual intercourse, attitude about condom use, pros/cons of having sex, hedonistic beliefs regarding condom use, barriers to condom use, peer influence and gender role perception); sexual self-efficacy; sexual behaviors; and power in sexual relationship (see in Appendix F-J).

*Section I and Section II Background characteristics (Demographics and SES) and general health***.** Standard demographic measures were used to assess age, gender, education, parental education, living with parent, and general health including percieved health status, alcohol drinking, cigarette smoking, and addicted substance use. These questions were used to characterize the sample, and to help determining the risk level of individuals' sexual behavior.

Section III. This third section of the survey contained scales measuring sexual risk behavior attitudes, pros/cons of intercourse, barriers to condom use, hedonistic beliefs regarding condom use, and peer influence, as well as gender role perception.

Sexual risk behavioral attitudes. Sexual risk behavior attitudes was measured by a 5-item subscale of the Sexual Risk Beahvior Belief Scale (SRBBS) developed by Basen-Engquist et al. (1999) and 3 additional items regarding multiple partner developed by the researcher. The theoretical framework used to guide the scale development was three popular behavioral theories: Social Cognitive Theory, Health Belief Model and Theory of Reasoned Action. The questions were asked about behavioral beliefs regarding perceived sex norms (2 items), perceived birth control use including condom (3 items), and perceived multiple partner norms (3 items). Examples of items were statements such as "I believe people my age should wait until they are older before they have sex" and" I believe condoms should always be used even if the two people know each other very well." The response scale is a 4-point Likert format ranging from 1 (definitely no) to 4 (definitely yes). After reversing the score of three negative items (item 2, 7, 8), the scale provided the possible scores ranging from 8 to 32, with higher score indicating unfavorable attitude toward sex risk taking behaviors. The language clarity of the translated version was also tested with

focus group feedback of 60 Thai adolescents. In this study, the calculated Cronbach's alpha for SRBBS were .61 and .67 in female and male students, respectively.

Pros/cons of intercourse. The 8-item scale was assessed pros/cons of intercourse (4 –item pros subscale and 4-item cons subscale) developed based on the work of Small (1993 cited in Davis et al.,1998), for example, " Having sex makes me feel grown up"; "Having sex will not help me further my education." These items were compiled from focus group discussion. Each item was responded by using a 4-point Likert-type format ranging from 1 (strongly disagree) to 4 (strongly agree). The calculated Cronbach's standardized item alpha for pros was .72 and .74 in female and male students. The calculated Cronbach's standardized item alpha for cons was .65 and .61 in female and male students. The scale provided the possible scores ranging from 8 to 32. The final score was subtraction of pros and cons, with higher score indicating pros more than cons, respectively.

Barriers to condom use. Barriers to condom use was measured by a 5 items, which was developed based on the work of Basen-Enguist et al. (1999), for example, "It would be embarrassing to buy condom (rubbers) in a store" ; " It would feel uncomfortable carrying condom (rubbers) with me" ; and " It would be wrong to carry a condom (rubber) with me because it would mean that I'm planning to have sex. " Participants answered on a 4-point Likert scale that ranged from 1 (strongly disagree) to 4 (strongly agree). The scale provided the possible scores ranging from 5 to 20, with higher score indicating perceived more barriers to condom use. In this study, Cronbach's alpha for barriers to condom was calculated at .75 and .58 in female and male students, respectively.

Condom-use hedonistic beliefs. Condom-Use hedonistic beliefs were measured by a 5-items scale developed based on the work of Albarracin et al., 2000 and Jemmott, Jemmott, Spears, Hewitt, & Cruz-Collins, 1992. The measure asks the questions such as " Sex feels unnatural when a condom is used" and " Condoms are embarrassing to use." Participants answered on a 4-point Likert scale that ranged from 1 (strongly disagree) to 4 (strongly agree). The scale provided the possible scores ranging from 5 to 20, with higher score indicating unfavorable outcome expectancies regarding using condom use. Cronbach's alpha for hedonistic expectancies has been reported at 0.79 in a sample of black female adolescents (Jemmott et al.) and 0.81 in a large sample of people (NIMH, 2001). In this study, Cronbach's alpha for Hedonistic Expectancies of Condom Use was calculated at .80 and .72 in female and male students, respectively.

Peer influences. Both descriptive norms and normative beliefs were defined as peer influence in the study. Descriptive norms were measured by a 4- item scale developed based on work of Kinsman et al. (1998). Participants were asked to report their perceptions about peer's sexual behaviors and protective behavior. Examples of items are statements "How many of your friends you know have had sex/ sexual intercourse with condom?" and "How many of your friends you know always have sex with condom?" Participants answered on a 7-point Likert scale that ranged from 1 (none of them) to 7 (all of them). The scale provided the possible scores ranging from 4 to 28, with higher score indicating perceived a large amount of norms toward having risk taking. In this study, Cronbach's alpha for descriptive peer norms were calculated at .63 and .70 in female and male students, respectively.

For normative beliefs, it was measured by 3-item scale developed by the researcher, which asked about how your close friends approved of having intercourse, having intercourse without condom use, and having intercourse with two or more sexual partners. Participants answered on a 5-point Likert scale that ranged from 1 (strongly oppose) to 5 (strongly approve). The scale provided the possible scores ranging from 3 to 15, with higher score indicating perceived a strong approval of close friends toward having risk taking. In this study, Cronbach's alpha for normative beliefs were calculated at .83 and .83 in female and male students, respectively.

Gender role perception. The 10-item scale derived from perception of sexuality, developed by Rampai Srinual (2003), was designed to examine perception of sexuality among Thai secondary school students and vocational school students. The original scale contains 12 items clustered into two subscales: (1) perception of masculine sexuality (5 items), and (2) perception of feminine sexuality (7 items). Perception of masculine sexuality consists of men being dominant and more powerful; men needed to have sexual experience before marriage and be the decision maker for having sex; and men had to be the starter who could express any sexual action (activeness and aggressiveness). Perception of feminine sexuality means women had to be virgins, be the reactors and must not express any sexual action (non-penetrative sex), rights in women's body, style of dressing and degree of exposure.

The original scale was developed from a background of Feminist Theory and the scale took the items from focus group discussion. The developer revised the questionnaire based on feedback from the second focus group. In a sample of 1,292 secondary school students and college students, the internal reliability using KR-20 was acceptable (r= .692) (Srinual, 2003). The present study modified the original

instrument by deleting perception of lover sexuality (6 items) and changing the response choices from two choices to Likert scale ranging from 1 = " strongly disagree" to 4 = " strongly agree". The possible scores ranged from 10 to 40, with higher scores indicating a higher valuation traditional gender role. Cronbach's alphas for gender role perception in this study were calculated at .62 for females and .65 for males, respectively.

Section IV Sexual self-efficacy (SSE). Sexual self-efficacy was modified from the Safe Sex Self-efficacy Scale (SSEC) of the Murphy et al. (2001) study by judging cultural relevant situations and meaning questions for Thai adolescents. The scale consisted of 2 subscales: (1) a 4-item refusal self-efficacy subscale for female, and a 3-item refusal self-efficacy for male; (2) a 16-item safe sex self-efficacy subscale for both sexes. The scale was developed to measure two main factors of multidimensional nature of self-efficacy: situation and graded difficulty level. This assessment developed from qualitative interviews and was different for men and women. The four themes for women were: (1) having their sense of worth tied to physically being with a man; (2) wanting to use sex to mend a relationship with a main partner; (3) wanting to have sex after drinking alcohol with a former partner; and (4) being with someone who is a good prospect for a long-term relationship. The themes for men were: (1) wanting to have sex with lover when having a chance; (2) wanting to have sex after drinking alcohol; (3) being with a new partner who appears "clean" or low risk; (4) wanting to switch from having unsafe sex to safe sex with a main partner.

The participants were asked to report a graded difficulty level regarding five specific self-efficacy questions. Each of the situations was asked with 5 questions that cover particular self-efficacy as follows (a) self-efficacy for refusing sex ; (b)

self-efficacy for bringing up the issue of condoms or safe sex in conversation ; (c) self-efficacy for convincing one's partner to be safe even if the partner says he or she hates condoms; (d) self-efficacy for convincing one's partner to be safe even if both your partner and you hate condoms ; and (e) self-efficacy for refusing sex if the partner will not be safe. Respondents utilized an 11-point scale (0-10) to indicate how confident they were about engaging in each of the four specific behaviors for each scenario. Therefore, 19 items indicated self-efficacy for males and 20 items for females. The scale provided the possible scores of refusal self-efficacy ranging from 0 to 40 for female and 0 to 30 for male. Safe sex self-efficacy score ranged from 0 to 200 for females and 0 to 190 for males, with higher scores indicating a higher self-efficacy.

Cronbach's alphas for two subscale of self-efficacy in this study were: for refusal self-efficay (coefficient α for male/female =.73/ .80); for safe sex self-efficacy (coefficient α for male/female = .95/ .95).

Section V Sexual behavior history. Sexual risk behaviors were measured by scoring various levels of sexual activities. The scales from which our history was derived, included selected items from the 1999 Youth Risk Behavioral Survey developed by the Centers for Disease Control and Prevention (CDC) (Bachanas et al., 2002) and from sexual risk behavior studies (Brener et al., 2002; Crosby, Holtgrave, DiClemente, Wingood, & Gayle, 2003). The first two items relevant to measurement of sexual activity included having sexual intercourse (0 = never; 1= yes), and whether adolescents had sex in the past 3 months (0 = no; 1= yes). These meaures were then collapsed into a single variable of sexual involement. A score of 0 indicates that the respondents never had sexual experience; a score of 1 indicates that the respondent

used to have sexual experience, but not having intercourse in the past 3 months; and a score of 2 indicates that the respondent have intercouse in the past 3 months.

Next, condom use at first and most recent intercourse was assessed using two items: whether condoms were used during the first sexual encounter (0 = no; 1= yes); and whether condoms were used during the most recent sexual encounter (0 = no; 1= yes). These measures were then collapsed into single variable consistent with condom use. Respondents who reported using condoms at both their first and most recent intercourse were assigned a value of 2; those who used condoms at either their first or their most recent intercourse were scored a value of 1; those who did not use condoms at either their first or their most recent intercourse were scored a value of 0.

One item related to pregnancy prevention was also asked: how often adolescents use birth control pills and condoms during the past three months (2 =never, 1= sometimes, 0=every time). The last two items relevant to multiple partners were whether adolescents had sex with at least two or more partners in past year (0 = no; 1= yes), and whether adolescents had sex with at least two or more partners in the past 3 months (0 = no; 1= yes). These measures were then collapsed into single variables of multiple partners. Respondents who reported having two or more sexual partners in the past year and in the past 3 months were assigned a value of 2; those who reported having two or more sexual partners in either last year or last 3 months were scored a value of 1; those who did not having two or more sexual partners in either last year or last 3 months were scored a value of 0.

The aggregate score of sexual risk behaviors was combined score from five sexual behavior questions previously mentioned. Two dependent variables were classified: dichotomous dependent variables (never/ ever having sexual intercourse)

for entire sample; and cumulative sexual risk index for sexually experienced adolescents. Then, scores on the risk aggregate variables ranged from 1 - 10, with higher scores indicating greater risk for contracting HIV or other STDs and pregnancy among sexually experienced respondents.

Intention. Intention was measured by 2 items: whether adolescents intend to have intercourse during adolescent year; and whether adolescents intend to use condoms if they plan to have sex in the next 3 months. Participants answered on a 5-point Liker scale that ranged from 1 (absolutely no) to 5 (absolutely yes). After reversing the score of item 2, the possible score of sexual risk intention ranged from 1 to 10, with higher score indicating having strong intention of taking risk.

Section VI Sexual relationship power (SRP). Power in sexual relationship was modified by the Sexual Relationship Power Scale (SRPS: Pulerwitz et al., 2000). Scale development was based on two equivalent versions of the SRPS, one in English and one in Spanish. Items were designed by combining a theoretical perspective that explicitly addresses interpersonal power and incorporates a gender-based perspective and began with focus group discussions with Latino and African-American women in the United States. Items incorporate events common to both married and dating couples, and address both sexual power and power in other areas of an intimate relationship. Factor analysis was conducted to refine scale domains. Items from the relationship control sub-scale explained 67 % of the variation in respondent responses, and items from the Decision-making Dominance Subscale explained 19 %. Predictive validity was also evaluated by testing the relationship between the SRPS and a number of variables hypothesized to be associated with relationship power. As predicted, a relationship history of physical violence and forced sex was negatively

correlated with the SRPS. Consistent condom use, a higher education level and relationship satisfaction were positively correlated with the SRPS.

The SRPS is a 21-item measure that consists of two sub-scales, Relationship Control and Decision-making Dominance. The control subscale of SRPS is a 13-items measure that is composed of questions about the nature of the relationship (e.g., "Most of the time, we do what my partner wants to do"). The 4-point Likert scale responses are range from 1 = "strongly disagree" to 4 = "strongly agree". The possible minimum is 13 and maximum was 52.

The Decision-making Dominance Subscale is an 8-item measure that contains questions about who has more say in various decisions (e.g., "My partner usually has more say about whether we have sex"). Participants answered on a 3-point scale, 1 = your partner, 2 = both of you equally, and 3 = you. The possible minimum was 8, and the maximum was 24. The mean score of this subscale was weighted with a score of 4 levels before summing up with relationship control score and reporting a total score. Then, the scale provided the possible score ranging from 21 to 84, with high score indicating having high controlling sexual relationship and having dominant decision.

The co-efficiency alpha measuring internal consistency reliability of the overall scale is 0.84 (combined Spanish and English-language version). A modified scale (SRPS-M), with the four condom-related items removed, also maintained good internal consistency reliability (alpha = 0.85) and construct validity. The SRPS was translated into Thai by the double-translation technique. The language clarity of the translated version was also tested with focus group feedback of 60 Thai adolescents. Cronbach's alpha for power in sexual relationship in this study was .75 for female and .70 for male, respectively.

Qualitative Approach

Data Collection Procedures

Two methods of qualitative research were used: focus group discussion and in-depth interviews. The focus group discussions were performed in the primary phase before conducting survey in order to provide insight into the problem of sexual risk behavior in a rapid manner and to provide contexts for the preparation of the questionnaire. Sex and educational level were the criteria for selecting group discussion participants. The six-group discussions were conducted. The groups were divided into male and female groups, with 3 educational levels, which were upper secondary schools, vocational schools, and a university. Each group consisted of 7-8 students. Research participants in focus groups were recruited using purposive sampling through formal and informal networks. In the second phase, in-depth interviews were employed after the survey in order to gain rich information about sexual risk behaviors from the adolescents' perspective. Snowball technique was used, and participants voluntarily encouraged their friends to participate in the in-depth interview study.

Focus group discussions. Participants were recruited from each educational level: secondary schools, colleges, and university. Selection criteria for a group included at least one adolescent (ages 15-22 years) who had intimate relationships with the opposite sex. After identifying 8-10 participants from each sex and educational level, a time and place were selected for the focus group. Focus group process was completed within 6 weeks (November –December 2004). Oral consent from all participants was obtained.

Six focus groups were conducted before gathering quantitative data using SAQ in order to assess the face validity and feedback on the questionnaire items. Adolescents were also asked about their understanding of norms, attitudes, and behavior related to risk taking and invited to share their experience about sexual risk taking. They were required to identify items from the scale which applied to them, specify the items they did not understand and revise the wording of any of the items to what they felt were more appropriate. They were then asked to respond to the actual scale in order to gather feedback on its presentation format.

There were one group of males and one group of females in each educational level that were included regarding procedural guidelines for managing focus group discussion (see appendix D). For groups, there was a moderator and an assistant who had prior experience in qualitative data. The moderator (researcher and assistant researcher) was the same sex as each group. The assistant acted as a note-taker and taking care of the tape-recorder. A focus group began with an icebreaking activity, after they were asked to complete the first draft questionnaire. Participants also noted how much time is required to complete the questionnaire. Then, their ideas and abilities surrounding this questionnaire were explored by the assistant by using question guidelines for focus group (see Appendix D)

The researcher reviewed all tapes and analyzed each comment. Comments were grouped by question for separate sex. Revision of the instrument was made if more than two participants raised the same concerns.

In-depth interview. In this study, the main purpose for conducting in-depth interview was to examine the underlying factors beyond psychosocial factors that may have an impact on sexual risk taking among adolescents. Particularly, gender-based

factors might not be captured by the quantitative approach. The exploring questions were based on socio -cultural context that might have an impact on sexual risk behaviors among adolescents.

Accessing the study population was anticipated to be challenging because talking about sex life is a sensitive topic. To deal with this potential problem, the researcher made close contact with adolescents during conducting focus groups. Establishing trust and rapport in a personal relationship facilitated entry to the study population. Selection criteria for the interviewee were being adolescent (up to 18 years and over) and ever had sexual experience with the opposite sex. The recruiter requested for the permission from potential participants to be contacted by the researcher.

An in-depth interview with interview guidelines (see Appendix D) was conducted. The interviews were tape-recorded and transcribed by the researcher. The interviews ranged in length from 1 hour to 2 1/2 hours. Each informant was given a gift as compensation for his/her time. At the start of each interview, each adolescent was asked to give her consent to be interviewed verbally. The participants were reminded about the definite confidentiality and anonymity surrounding their responses. Furthermore, all interviewees were informed that they had the option to either not answer any questions if they did not want to, and that they could terminate the interview at any time.

Period of Conducting Qualitative Data

Six focus group discussions were conducted over the period of November to December 2004. Twenty two interviews were conducted over the period of December 2004 to March 2005.

Data Analysis

Qualitative Data Analysis

The qualitative analytical method of content analysis was used in this study. The transcripts were coded using coding method and categorize the content into meaningful groupings (Polit & Hungler, 1999)

Quantitative Data Analysis

For this study, there were two sets of independent variables involving 1) traditional components of psychosocial theories (sexual risk beliefs and attitudes, sexual risk norms, safe sex self-efficacy); and 2) gender-related factors (gender role perceptions and power in sexual relationship). The dependent variables were scoring various sexual behaviors, which were comprised of dichotomous outcome (sexual experience)and continuous outcome (sexual risk taking). Controlled variables included background characteristics and behavioral risks.

The following statistical procedures were performed to analyze the data:

1. Descriptive statistics including frequency, measures of central tendency and measure of variability was used to describe the characteristics of the participants, independent variables, and dependent variables.

2. Intercorrelations for the variables were examined. Multicolinearity among Independent variables were investigated.

3. For the research questions regarding the gender difference in sexual behavior, a separate data set of responses from sexually experienced respondents was analyzed. Binary regressions were used to test the central research questions for this dissertation, namely, the effect of gender role perception, and power relationship on sexual behaviors. The three conventional components of the psychosocial theories, attitudes, peer norms, and self-efficacy, were combined with demographic covariates (i.e., age, educational level, GPA, behavioral risks) to form a main predictive model. This model was tailored to answer particular research questions through the addition of specific constructs (e.g. gender role perception and power relationship). Multiple regressions were run for a sexual risk score of a number of sexual behaviors. Logistic was conducted for sexual experiences and linear regression was conducted for score of sexual risk taking.

Sexual experience was treated as a dichotomous dependent variable, and tested using binary logistic regression based on a proportional odds model. The other dependent variable, sexual risk score was treated as continuous dependent variables, and tested using linear regression based on hierarchical predictor model.

The following tables summarizes the variables, the values and reference categories assigned to each variables used in the present study.

Table 3-2

Summary of Variables Used in the Study for a Dichotomous Dependent Variable

Variables	Operational Definition
Dependent Variables	
Sexual Experiences	0 –Never
	1-Ever
Control Variables	
Educational level	0- secondary school
	1- university level
	2- vocational level
GPA	0- GPA >3.00
	1- GPA ≤3.00
Age	0- age ≤ 18
	1 age > 18
Behavioral Risks	
Cigarette smoking	0- never use 1- ever use
Alcohol drinking	0- never use 1- ever use
Substance use	0- never use 1- ever use
Independent Variables	
Attitudes & Beliefs	
Pros /Cons of sexual involvement	0- Cons>Pros
	1- Cons =Pros
	2- Pros >Cons
Social Influences	
Sexual practices of peers	0 –None
	1 - ≤ 50%
	2 - > 50%
Close friend approval of intercourse	0- Disapprove
	1- Undefined
	2- Approve

Table 3-2 (continued)

Variables	Operational Definition
Gender-Power factors	
Gender role perception	0- Traditional 1- Liberal
Intention	
Sexual intention	0- No 1- Don't know 2- Yes

Table 3-3

Summary of Variables Used in the Study for Continuous Dependent Variables

Variables	Operational Definition
Dependent Variables	
Sexual Risk Behaviors	Scale ranges from 1 to 10
Control Variables	
GPA	0 - GPA >=2.00 1 - GPA <2.00
Age	Number of year
Behavioral Risks	
Cigarette smoking	0 - never use 1-ever use
Alcohol drinking	0- never use 1-ever use
Substance use	0 - never use 1-ever use
Independent Variables	
Attitudes & Beliefs	
Sexual risk behavior attitude	Scale ranges from 1 to 4
Pros of sexual involvement	Scale ranges from 1 to 4
Cons of sexual involvement	Scale ranges from 1 to 4
Barrier belief of condom	Scale ranges from 1 to 4
Hedonistic beliefs of condom	Scale ranges from 1 to 4

Table 3-3 (continued)

Variables	Operational Definition
Social Influences	
Sexual risk practices of peers	Scale ranges from 1 to 7
Close friend approval of sexual risks	Scale ranges from 1 to 5
Perceived self-efficacy	
Safe sex self-efficacy	Scale ranges from 0 to 10
Gender-based factors	
Gender role perception	Scale ranges from 1 to 4
Power in sexual relationship	Scale ranges from 1 to 4

Protection of Human Subjects

Approval was obtained from the Research Ethics Review Committee, Faculty of Nursing, Chiang Mai University. Several measures were in place to ensure that this study was conducted in an ethical manner, including oral informed consent, in which students were informed of their rights, including voluntary participation and the right to withdraw at any time. In addition, questionnaires and survey were anonymous and students were assured that the survey would not be accessible to their instructions or any other individuals not connected with the study. Students were debriefed immediately, provided with a telephone number for the health consulting, offered a brief lecture on AIDS prevention after they completed filling out the questionnaires.