# KNOWLEDGE, ATTITUDE, PERCEIVED SELF-EFFICACY AND BEHAVIOR RELATED TO SEXUAL RISK BEHAVIOR AMONG UNIVERSITY STUDENTS IN NORTH THAILAND

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**ABSTRACT:**

**Background:** The high level of HIV infection in Phayao province has led to an increased interest in understanding the determinants of sexual activity among university students. The present study examined socio-demographic, sexual behavior, knowledge, attitudes, perceived efficacy, sexual risk behavior communication in the family, and prevention behavior towards sexually transmitted diseases (STDs) and risk of human immunodeficiency virus (HIV) among university students.

**Methods:** This cross-sectional study was carried in University of Phayao. A total of 550 students (aged 18-21 years) were recruited in this study by purposive sampling. The researcher collected data by using the self-administered questionnaire. Descriptive statistics and inferential statistics including Chi-square were used.

**Results:** Only 19.4% reported ever having sex. Sexual risk behavior was associated with various factors including past sexual experience, sexual status, sexual activities experienced, and frequency of condom use when having sex ($p<0.001$). Most of them (60.0%) had low level of knowledge, attitude, perceived self-efficacy, sexual risk behavior communication in the family, and prevention behavior towards preventive STDs/HIV.

**Conclusion:** Improved sexual education and HIV prevention, life skills are needed among university students in Thailand. Prevention programs should address the risks faced by university students using culturally sensitive strategies and materials

**Keywords:** Knowledge, Attitude, Self-efficacy, Sexual risk behavior, University students, Thailand

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## INTRODUCTION

Unintended pregnancy and sexually transmitted disease (STDs) have long been important consideration in university students' sexual activity, but in the past 15 years, human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) has become a leading concern [1]. Youth between the age of 15 and 24 years made up 42.0% of new cases of human immunodeficiency virus (HIV) infections worldwide in 2010 [1]. Co-existence of high risk behavior, particularly unsafe sexual behavior, together with inadequate knowledge and major misconceptions that are related to HIV contributes to increased vulnerability of university students to HIV infection [2, 3].

Sexual health issues among Thai adolescents are becoming a considerable problem particularly among adolescents, because they are easily exposed to the risks of unwanted pregnancies, STDs, and including HIV / AIDS [4, 5]. Studies in Thailand have reported that young people are more likely to engage in high risk behavior such as unprotected sex [4, 6]. Among those, some had pregnancies and some resorted to abortion, especially abortions which performed outside hospitals or by non- health

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officials [5, 6]. There is a greater risk of complications among adolescents [4, 6]. According to the Bureau of Epidemiology, Thailand, teenagers have the highest prevalence of the STDs [3]. Chlamydia trachomatis and Neisseria gonorrhea are most common in females aged 15-19 years and young adults have a high risk of acquiring infected [4]. In Thailand, about 26.0% of newly reported HIV infections were among youth aged between 13-29 years old [3]. Since sexual transmission is a preventable vector of HIV infection, the levels of unprotected intercourse taking place on university is of concerned [6, 7]. The prevalence of HIV infection with among university students as reported from multiple demographic sites is 0.2% [8] and without abstinence or inconsistency use of effective barriers method students, university students will continue to place themselves at risk. Several studies have also described problematic knowledge, attitude, and concerns about HIV among university students [7, 8]. University students comprise young people who may have several casual sexual relationships going and postpone marriage until they have completed their education [9]. Therefore, this group can benefit from the accurate and comprehensive education about STDs and HIV/AIDS, including encouragement to modify their sexual behavior [10].

Phayao province located in the north and the prevalence of HIV infection with highest of Thailand, young people between 19 and 29 years of aged make up 22.0% of the HIV infected population currently [10]. Several risk factors were found sexual transmission (90.4%), followed from mother to child transmission (MTCT) (4.8%) and substance abuse (0.2%) and other causes (0.01%), respectively [10]. There was study of sexual behavior among students in Phayao showing that about 26.2% of them had premarital sexual intercourse [10]. University students as a group particularly vulnerable to HIV infection; they may be at higher risk of engaging in risk sexual behavior, especially if they are under the influence of alcohol or drugs in response to peer pressure or lack of maturity. Furthermore, the significant numbers of sexually active university students have reported engaged in anonymous sexual (10.8%), abortion (10.0%), sexual partners and multiple sexual partner (32.0%), and inconsistent condom use (30.0%) [11]. Increased sexual activity raises concerns about the prevalence of sexual behavior and abortion among university students of the Phayao province [11]. The aim of the present study was to obtain data about knowledge of STDs and HIV/AIDS, attitude, perceived self-efficacy, sexual risk behavior communication in the family, and prevention behavior toward preventive STDs and HIV/AIDS among University of Phayao undergraduates; this information will help provide an accurate indication of the upper limit of knowledge and sexual behavior among young people in Thailand. The results will provide the basis for designing of new strategies to improve public health action in this field and the integration of such issues.

## METHODOLOGY

This study used a cross-sectional study to collect data from university students using a self-administered questionnaire. The data were collected in September-December 2013. A purposive sampling method was used to select participants from the first year in University of Phayao. Participants were eligible for inclusion if they were (a) self-reported between 18 - 21 years (b) self-reported single marital status, and (c) undergraduates students in School of Medicine. The list of all names of first year students in five undergraduate programs namely, Bachelor of Community Health, Health Promotion, Environmental Health, Occupational Health, and Emergency Medical Technicians. Total 550 students from the programs of bachelor were invited to participate in this study by approaching in the classrooms. After explaining the nature, purpose, and anonymity of the study, researchers distributed a self-administered questionnaire to students who consented. The students were assured that their responses would be confidential and their participation was voluntary. The students were also informed that they were free to decline to participate in the study at any time.

The questionnaire consisted of socio-demographic characteristics, knowledge of STDs, HIV/AIDS, attitude, perceived self-efficacy, sexual risk behavior communication in the family, and prevention behavior towards preventive STDs and HIV/AIDS [7, 12, 13]. For the content validity, three experts evaluate by the item objectives congruent (IOC), giving a rating of 1 (for clearly measuring), -1 (clearly not measuring), or 0 (uncertain measuring). The content validity by IOC was 1of each item. A pilot study was conducted in 30 university students who were similar to the study participants from another faculty in University of Phayao to test reliability the summary index of each item was ranging from 1-4. The $\alpha$ coefficient was 0.82, 0.81, 0.80, and using measurement of the KR-20 [14]. Results of the pilot study were used to modify the instrument. The questionnaire consists of six self-administrated instrument that took a total of 10 to 15 minutes to complete.

Statistical analyzes were performed using IBM, SPSS Statistics version 20 (University of Phayao). Descriptive statistics for continuous variable and frequency (percentages) for categorical variables were used to describe the characteristics of the study population. Chi-square and Fisher`s exact test was used to determine the association. The results were considered significant when the *p-value* less than 0.05.

Ethical consideration was received from the Ethical Review Committee for Research Involving Human Research Subject, University of Phayao (HE 56-02-04-0018). University students were informed about the research and could ask any questions until they are not doubt about the study. Then, they signed an informed consent form before answering the questionnaires. All completed questionnaires were placed in a sealed envelope and directly placed in the box to ensure anonymity of their response. This study waived the assent of their parents in order to make students feel free to answer.

## RESULTS

Table 1 shows the demographic characteristics of the students. A total of 550 students completed the questionnaire. Participants ranged in age from 18-21 years with a mean age of 20 years (SD = 0.705). Most of the participants were females (67.8%) and (32.2%) were males. Most students (68.7%) living with their parents; 12.4% of students lived with father; 14.5% of students with mother; and 4.4% of students with sibling, respectively. The majority of the participants rated their family economic status as moderate (69.3%) and poor (24.9%). As shown in Table 2, the main source of information about STDs and HIV/AIDS was through mass media with internet ranking first (64.8% females and 35.2% males). Significant was identified which included receiving health information ($p<0.029$) in Table 2.

### Prevalence and characteristics of sexual behavior

As shown in Table 3, only 107 participants (19.4%) in the sample of 550 reported ever having sex. Of those who reported no past sexual experience (n = 443), 65.2% (n =289) were female and 34.8% (n = 154) were male. Among those who had past sexual experience, 78.2% of females and 21.8% of males had only one sexual partner; the remainder had two or more partners. Of the respondents, 75.4% of females and 24.6% identified themselves as heterosexual; 59.0% of females and 41.0% had engaged in homosexual activity; 26.6% (n=47) of males were bisexual. A majority of participants used condoms sometimes; 80.9% of females and 19.1% of males, respectively. Participants used of alcohol, more than half drank alcohol sometimes; 67.0% of females and 33.0% of males. The risk factors associated with gender were examined by Chi-square analysis. Significant were identified which included 1) past sexual experience ($p<0.008$), 2) sexual status ($p<0.001$), and 3) frequency of condom use when having sex ($p<0.024$), respectively, as showed in Table 3.

### Factors associated with knowledge, attitude, perceived self-efficacy, sexual risk behavior communication in the family, and prevention behavior towards preventive STDs and HIV/AIDS of university students

As show in Table 4, most of participants (69.6%)

**Table 1** Basic characteristics (N = 550)

| Characteristics | Number | % |
|---|---|---|
| **Gender** | | |
| Male | 177 | 32.2 |
| Female | 373 | 67.8 |
| **Age (years)** | | |
| 18 | 431 | 78.4 |
| 19 | 82 | 14.9 |
| 20 | 17 | 3.1 |
| 21 | 20 | 3.6 |
| Mean =18.3, S.D.= 0.70, Rang = 18-20 | | |
| **Family economic status** | | |
| Good | 32 | 5.8 |
| Moderate | 381 | 69.3 |
| Poor | 137 | 24.9 |
| **Living arrangement during university vacation** | | |
| Both parents | 378 | 68.7 |
| Single parents | 148 | 26.9 |
| Relatives or sibling | 24 | 4.4 |

**Table 2** Source of STDs and HIV information (N = 550)

| General | Male (n=177) (%) | Female (n=373) (%) | Chi-square test |
|---|---|---|---|
| **Source of information** | | | 0.398[a] |
| Television | 5 (22.7) | 17 (77.3) | |
| Schoolteacher | 14 (25.0) | 42 (75.0) | |
| Internet | 74 (35.2) | 136 (64.8) | |
| Radio | 2 (16.7) | 10 (83.3) | |
| Newspapers / magazines | 3 (25.0) | 9 (75.0) | |
| Friends / neighbors | 56 (32.6) | 116 (67.4) | |
| Family members | 23 (37.1) | 39 (62.9) | |
| Health professional | 0 (0.0) | 4 (100.0) | |
| **With whom to discuss STDs and HIV** | | | 0.253[a] |
| Friends of the same sex | 10 (35.7) | 18 (64.3) | |
| Family members | 78 (31.8) | 167 (68.2) | |
| Friends of the opposite sex | 32 (30.2) | 74 (69.8) | |
| Boyfriend / girlfriend | 12 (38.7) | 19 (61.3) | |
| Schoolteacher | 33 (41.2) | 47 (58.8) | |
| Health professional | 0 (0.0) | 3 (100.0) | |
| Online chat or e-mail with a stranger | 12(21.4) | 44 (78.6) | |
| Husband/wife | 0 (0.0) | 1 (100.0) | |
| **Receiving health information** | | | 0.029* |
| No | 26 (44.8) | 32 (55.2) | |
| Yes | 151 (30.7) | 341 (69.3) | |

∗ Significance at p <0.05

[a] *p-value* are calculated using Fisher's Exact test

**Table 3** Sexual practices (N = 550)

| Practices | Male (n=177) (%) | Female (n=373) (%) | Chi-square test |
|---|---|---|---|
| **Past sexual experience** | | | 0.008*,a |
| No past sexual experience | 154 (34.8) | 289 (65.2) | |
| Had sexual experience | 23 (21.5) | 84 (78.5) | |
| **Sexual status** | | | 0.001*,a |
| Heterosexual | 114 (24.6) | 350 (75.4) | |
| Homosexual | 16 (41.0) | 23 (59.0) | |
| Bisexual | 0 (0.0) | 47 (100.0) | |
| **Number of sexual activities experienced** | | | 0.120[a] |
| One | 17 (21.8) | 61 (78.2) | |
| Two or three | 4 (21.1) | 15 (78.9) | |
| Four or more | 1 (14.3) | 6 (85.7) | |
| Unknown | 1 (33.3) | 2 (66.7) | |
| None | 154 (34.8) | 289 (65.2) | |
| **Frequency of condom use when having sex** | | | 0.024*,a |
| Every time | 1 (25.0) | 3 (75.0) | |
| Almost every time | 4 (17.4) | 19 (82.6) | |
| Sometimes | 13 (19.1) | 55 (80.9) | |
| Never | 154 (34.8) | 289 (65.2) | |
| **Alcohol use** | | | 0.900[a] |
| Not at all | 116 (31.7) | 250 (68.3) | |
| Every day | 1 (50.0) | 1 (50.0) | |
| Sometimes | 60 (33.0) | 122 (50.0) | |

∗ Significance at p <0.05

[a] *p-value* are calculated using Fisher's Exact test

**Table 4** Number and percentage of level of knowledge, attitude, perceived self-efficacy, sexual risk behavior communication in the family, and prevention behavior towards preventive STDs and HIV/AIDS of university students (N=550)

| Variables | Total | Had sexual experience | No sexual experience | *p-value* |
|---|---|---|---|---|
| | N(%) | n(%) | n(%) | |
| **Knowledge** | | | | 0.325[a] |
| High (8-10 scores) | 40(7.3) | 6(5.6) | 34(7.6) | |
| Moderate (6-7 scores) | 127(23.1) | 20(18.7) | 107(24.2) | |
| Low (<5 scores) | 383(69.6) | 81(75.7) | 302(68.2) | |
| **Attitude towards the preventive of STDs and HIV/AIDS** | | | | 0.153[a] |
| High (32-40 scores) | 0(0.0) | 0(0.0) | 0(0.0) | |
| Moderate (23-31 scores) | 220(40.0) | 36(33.6) | 184(41.5) | |
| Low (<24 scores) | 330(60.0) | 71(66.4) | 259(58.5) | |
| **Perceived self-efficacy** | | | | 0.689[a] |
| High (32-40 scores) | 2(0.0) | 0(0.0) | 2(0.5) | |
| Moderate (23-31 scores) | 71(12.9) | 16(15.0) | 55(12.4) | |
| Low (<24 scores) | 477(86.7) | 91(85.0) | 386(87.1) | |
| **Sexual risk behavior communication in the family** | | | | 0.001*[a] |
| High (32-40 scores) | 12(2.2) | 0(0.0) | 12(2.7) | |
| Moderate (23-31 scores) | 216(39.3) | 27(25.2) | 189(42.7) | |
| Low (<24 scores) | 322(58.5) | 80(74.8) | 242(54.6) | |
| **Prevention behavior** | | | | 0.048*[a] |
| High (32-40 scores) | 8(1.4) | 0(0.0) | 8(1.8) | |
| Moderate (23-31 scores) | 2(16.2) | 12(11.2) | 77(17.4) | |
| Low (<24 scores) | 453(82.4) | 95(88.8) | 358(80.8) | |

∗ Significance at p <0.05

[a] *p-value* are calculated using Fisher's Exact test

have low level of knowledge, followed by moderate level (23.1%) and high knowledge (7.3%). In term of attitude, most of them (60.0%) have poor level of attitude towards the preventive of STDs and HIV/AIDS followed by moderate level (40.0%). More than half of participants (86.7%) have low level of perceived self-efficacy towards preventive STDs and HIV/AIDS. Only (58.5%) of participants has low level of sexual risk behavior communication in the family followed by moderate level (39.3%), and high (2.2%). The majority of participants (82.4%) have poor level of prevention behavior, followed by moderate level (16.2%) and high knowledge (1.4%), respectively. In this study, the highest percentages of perceived self-efficacy and prevention behavior towards preventive STDs and HIV/AIDS were both groups of had sexual experience and non- sexual experience. The level of sexual risk behavior communication in the family and prevention behavior were found to have a significant association (p<0.001) with sexual experience (Table 4).

## DISCUSSION

This study provided useful information about the prevalence of single and multiple risk behaviors among university students. Only 19.4% of the participants in this study were sexually active. The present study found that a greater proportion of females (78.5%) than males (21.5%) reported sexual activity. In comparison, adolescents in the general Thai population reported higher rate to sexual intercourse, ranging from 7.9% to 50.0% [15, 16]. In the United States, at least 30.0% of vertically HIV infected teens were sexually active [17] and in the Bangkok studies among behaviorally HIV-infected youth, all reported sexual activity [18]. The results are also consistent [19], which reported that 29.8 % of college students in Taiwan were less sexually active at the time of the study. It is plausible that females may over report their sexual behavior while males may under report their sexual behavior due to internet media and other communication technology have led to changes in traditional sexual norms of Thai young. One possible reason for this difference may have been because of sampling and methodological differences. Second, the School of Medicine enrollment ratio for males in university is relatively low (30.0%). According to MOPH [7], Thai young adult have a higher HIV prevalence of HIV than their rural cohort. Currently, Thai young people are being exposed to new urban values, increasing urbanization, and peer relationships that place additional pressure on them to engage in high

risk behaviors. Whereas [20] examined college students in Taipei, a metropolitan area in northern Taiwan, this study was conducted in southern Taiwan, a more conservative region.

Among sexually active among university students in this study, over 50.0% indicated that they used condoms "sometimes" during sexual activity and more than half 80.0% indicated that they had two or more sexual partners; yet only 3.5% of females and 4.3% of males stated that they "ever time" used a condoms when engaging in sexual activity. Contrary to expectations regarding gender differences in condoms use, males were no likely than females to have ever used condoms or have used them at last intercourse. The participants seemed to be generally aware of the condom used, but the reason participants used condoms were unclear. It may be that the condoms used in Thai young are as attempt to prevent pregnancy more than to protect STDs and HIV / AIDS. These findings are noteworthy as prior research before in other African setting [21] indicated that condoms use tents to be higher among males both in terms of consistent condom use and ever having used condoms. A university student, both females and males was sexual risk behaviors among alcohol. This finding of their acceptance could be interpreted as a potential for taking risk behavior acceptance of alcohol. Acceptance of drinking alcohol was similar to the study. Engage in risk behaviors such as drinking alcohol or going to the disco was associated with an elevated likelihood of sexual experience for both males and females [21]. Several studies have reported the co-occurrence of sexual activity and other risk behaviors such as substance abuse [22]. This means that certain behaviors may be influenced by personal or contextual factors. The coupling of risk behaviors and sexual activity among the young people has been the impetus for HIV prevention campaigns that address other risk behaviors.

The study showed that most university students discussed STDs and HIV/AIDS with their family member and friends of the opposite sex. This result indicated that family member have first priority for those students to consult with. These findings are in agreement with other studies [10, 22], found that young people in the United States to learn about sex from their family, friends, and discuss with their lover of them. Primary sources of information related to HIV, nearly two-thirds of the participants were internet, friends, and few participants indicated that they would seek information from family members or teacher. More students obtained information about STDs and HIV / AIDS at family member, internet or teacher schools. Thus, these are potential valuable resource of information about STDs and HIV/AIDS, even at the university level. The data also suggest that sexual risk behavior communication in the family and prevention behavior are associated with sexual experience ($p<0.001$). Findings are consistent with the model of self-efficacy [23] and concept of like skill, applied to decision making and effective communication [12]. Motivation and behavioral skills to perform in preventive sexual behavior have significant effect; consequently interventions that promote prevention of sexual behavior should give emphasis on changing attitudes, perceived self-efficacy, perception of social support, and skills acquisition.

Knowledge, attitude, and perceived self-efficacy towards preventive STDs and HIV/AIDS of university students were relatively low and not differ by had sexual and no sexual experience. These results are consistent with a previous review [21] which showed HIV / AIDS knowledge was did not differ by sex or sexual experiences. Those who were sexually experienced had significantly greater perceived risk of STD infection than those who were not sexually experienced; however, the effect size of the difference was small [21]. Consistent with other studies [21, 22] these results indicate that STDs and HIV knowledge had a positive impact on reducing risky sexual practices. Although STDs and AIDS knowledge are necessary, negotiation for safe sex is also extremely important.

In conclusion, a high percentage of university students engage in high risk sexual behaviors. This finding of this study suggests that sexual activity among university students is influenced by multiple factors operating at various levels, including the university environment. Moreover, the pattern of association differs for males and females. These results have several implications for sexual health policies and programs targeting youth. This present study has some limitations. The study utilized a cross-sectional design; therefore, causal inference cannot be made. The findings from this study cannot be generalized to out of university students, who may engage in higher rates of sexual activity. Therefore, further studies should expand this research to include more rural university and include examples of young people outside the university system. In spite of the limitations, the results of this study have important implications for public health and medicine. First, accurate information about STDs and HIV / AIDS will be emphasized for university students. Public health professionals who have access to this population could integrated study results into intervention strategies aimed at increasing the level of knowledge related to STDs

and HIV / AIDS. In addition, developers should consider the differences and the preferred method of receiving information about sexuality and sexual activity for males and females as they develop life skills, STDs, and HIV / AIDS education programs. Second, gender differences should be taken into account when designing educational programs. Third, the formal education to become more prevalence, further investigation on the association between university environment and behaviors of youth is warranted.

Finally, although only a small number of participants in this study reported ever having, sex, STDs, and HIV / AIDS prevention education efforts should begin at an early age. It is likely that rate of sexual activity among Thai young will only increase over time; therefore, they must receive early, frequent, and accurate information about STDs, HIV / AIDS, and prevention.

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