FACTORS ASSOCIATED WITH RISK BEHAVIOR OF SEXUALLY TRANSMITTED INFECTION DISEASES AMONG FEMALE ADOLESCENTS IN UBON RATCHATHANI PROVINCE, THAILAND

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Abstract - Sexually transmitted infection diseases prevalence and risks in Thai female adolescents (15–24 years old) were examined. Unprotected sex with a boyfriend conferred the greatest risk for prevalent STIs, particularly for younger adolescents and alcohol use increased the STI risk for women. This study aimed to investigate the prevalence and Factors associated with risk behavior of sexually transmitted infection diseases among female adolescents in UbonRatchathani province, Thailand. This study is a Cross-sectional Analytical study collected data from January to October 2016 by using self-reported questionnaire. Univariate (chi-square test) and multivariate analyses (logistic regression) were performed to identify the factors associated with the risk behavior of sexually transmitted infection diseases. The study found that 166 people were male, 47.6 percent and females 52.4 percent average age of 14.62 years (SD = 2.139) groups had experienced sexual intercourse, and 92 people representing a 55.4 percent average age of first homo 13.33 (SD = 2.133) first sexual by unattractive condom 54.3 percent had used drugs before having sex, 31.5 percent had been drinking alcohol before having sex 32.6 percent analyzed behavioral factors associated with the risk of sexually transmitted infections found that students who do not live with their families, risk behavior than students who live with their families. A statistically significant (OR_{adj} = 5.47, 95%CI= 2.32-7.71) students experience substance abuse compared to those had no experience. A statistically significant (OR_{adj} = 6.44, 95%CI= 2.84-8.33) students who living with parents (not mother or father) compared to who were living with both mother and father. A significantly greater for participants who had low knowledge level compared to who had high knowledge level (OR_{adj} = 4.55, 95%CI= 2.67-6.88) and significantly greater for participants who had risk for sexual transmitted disease compared to who had no risk (OR_{adj} = 3.44, 95%CI= 2.11-7.82). The results of the study The family should be involved in the creation of knowledge and the right attitude to the students. And all the sectors should work together to prevent and resolve.

Keywords - Sexually transmitted diseases, Adolescents, Younger

I. INTRODUCTION

Thailand has experienced a significant decrease in HIV infection over the past two decades, with the greatest reductions in prevalence observed among the most at-risk populations[1-3]. Despite this notable prevention success in controlling a former HIV epidemic (due in large part to the adoption of a government-initiated nationwide education and prevention campaigns[4-5], Thailand's HIV epidemic is thought to be poised for resurgence. HIV/AIDS is the leading cause of death for adolescent females and second most common cause of death for adolescent and young adult males (15–24 years)[6] . Between 2000 and 2004, new sexually transmitted infection (STI) cases reported among Thai students increased from 3% to 10%[6]. Thailand is experiencing a cultural transition in sexual norms and practices, particularly among adolescents and young adults[7-8]. An increase in the acceptance of premarital sex coupled with a decrease in condom use among youth and young adults[9] has been identified as one of the threats to Thailand's continued HIV prevention success[1]. This creates an emerging susceptible population which will require new prevention strategies if Thailand is to maintain its goal of reducing its HIV epidemic. Limited information exists on the state of STIs in rural areas of Thailand; therefore, the current analysis examines the STI prevalence and associated gender- and age-specific risk factors among a representative sample of youth in rural Thailand.

II. RESEARCH OBJECTIVE

To determine the prevalence and Factors associated with risk behavior of sexually transmitted infection diseases among female adolescents in UbonRatchathani province, Thailand.

III. RESEARCH METHODOLOGY

A cross-sectional analytic research was conducted during January to October 2016. These data were selected by multistage random sampling. After sample size calculation by using the estimated population mean equation (LemeshowS. et al., 1991), total 356 females adolescents age 15–24 years old (included 5% missing cases) in UbonRatchathani province. Research tool was self - assessment questionnaire consist of questions related to behavioral risk of infection of sexually transmitted diseases and factors associated with the risk behavior of sexually transmitted infection diseases among M. 5students and vocational students. This study was approved by the institution Review Board for Human

Research Ethics, MahaSarakarm University (Certification number PH 064/ 2016).

Data analysis was performed by Epi info version 3.52. The population characteristics were described by frequency and percentage. Demographic data, knowledge level, attitude level and the reliability was .725 tested for the factors that determine the quality, and risk factors were used to determine the factors associated with the risk behavior of sexually transmitted infection diseases by univariate analysis and multivariate analysis. Twelve variables with *p*-value < 0.25 from univariate analysis including sex, age, education, relationship, income, living with, drug abuse, alcohol consumption, abnormality of sexual organ or anus, blood test for sexual transmitted diseases, knowledge level and attitude level were considered to multiple logistic regression with backward elimination method at the 95% confident interval (95%CI).

IV. RESULTS AND DISCUSSION

Total 166 participants were 79 (47.6%) males and 87 (52.4%) females, average age 17.5 ± 2.1 years old. There were 92 (55.4%) peoples who had sexual activities. The sexual activities were commonly reported in participants aged 14.3 ± 2.1 years old, GPA 3.01-3.50, income 7,500 THB/month, divorced parents, and living with lovers as show in Table 1.

Table 1: Characteristic of participants and Behavioral risk of infection of sexually transmitted diseases

Demographic characteristics	Behavioral risk of infection of sexually transmitted diseases.				
	Risk (n=50)		No risk (n=42)		Total (n=92)
	n	%	n	%	n
Sex					
Male	32	64.0	18	36.0	50
Female	18	42.8	24	57.2	42
Age (years)					
16	21	48.8	22	51.2	43
17	23	56.1	18	43.9	41
18	6	75.0	2	25.0	8
Mean = 17.5, SD = 2.1					
In relationship (Having girl/boyfriends)					
Yes	30	66.7	15	33.3	45
No	20	42.6	27	57.4	47
Living with					
Mother and father	8	40.0	12	60.0	20
Single parent	9	31.0	20	69.0	29
Friend	7	63.6	4	36.4	11
Lover	14	100.0	0	0.0	14
Relative	6	66.7	3	33.3	9
Alone	4	66.7	2	33.3	6
Other	2	66.7	1	33.3	3
GPA					
≤2.50	12	80.0	3	20.0	15
2.51-3.00	19	61.3	12	38.7	31
3.01-3.50	14	37.8	23	62.2	37
≥3.51	5	55.6	4	44.4	9
Income (Baht/month)					
≤5,000	18	37.5	30	62.5	48
>5,000	32	59.2	22	40.8	54
Median;Min-Max7,500; 2,500-30,000					

The results from univariate analysis (Chi-square test) found the associations between participant characteristics and behavioral risk of infection of sexually transmitted diseases among M. 5 students and vocational students in UbonRatchathani province, Thailand. The odds of having behavior of sexually transmitted infection diseases among M. 5 students and vocational students were 2.37 times (OR =2.37, 95%CI = 1.02-5.50) significantly greater for males when compared to females, 2.70 times (OR =2.70, 95%CI = 1.16-6.30) significantly greater for

adolescences who were in relationships when compared to participants who were not in relationships, 2.35 times (OR =2.35, 95%CI = 1.01-5.46) significantly greater for participants parent status who living with single parent, 3.12 times (OR =3.12, 95%CI = 1.33-7.36) significantly greater for adolescences experience substance abuse and alcohol consumption 4.22 times (OR =4.22, 95%CI = 1.73-10.30) compared to those who had no behavioral risk of infection of sexually transmitted diseases. The odd of having abnormality of sexual organ or anus in last 12 months in participants who had sexual activities was 3.49 times (OR = 3.49, 95%CI = 1.48-8.26) significantly greater than those reporting no sexual activities. The odd of testing blood for sexual transmitted diseases in adolescences who had sexual activities was 5.21 times (OR = 5.21, 95%CI = 2.10-12.95) significantly greater than those reporting no sexual activities. Participants who had low knowledge about sexual transmitted diseases were 6.50 times (OR = 6.50, 95%CI = 2.56-16.50) having sexual activities compare to those had high knowledge level as show in Table 2.

Table2 : The univariate analysis factors associated with behavioral risk of infection of sexually transmitted diseases among (M. 5 students and vocational students in UbonRatchathani province, Thailand

Factors	Behavioral risk of infection of sexually transmitted diseases.		OR	95%CI	*p*-value
	Risk (n=50)	No risk (n=42)			
Sex					
Male	32	18	2.37	1.02-5.50	0.007*
Female	18	24	1.00		
Relationships (girlfriend/boyfriend)					
Relationships	30	15	2.70	1.16-6.30	<0.001*
Not in relationships	20	27	1.00		
Parent status					
living with single parent	33	19	2.35	1.01-5.46	<0.001*
living with parent	17	23	1.00		
Living					
living with parents (mother or father)	42	30	2.10	0.76-5.76	0.232
living with both mother and father	8	12	1.00		
Experience substance					
Yes	34	17	3.12	1.33-7.36	<0.001*
No	16	25	1.00		
Experience alcohol					
Yes	38	18	4.22	1.73-10.30	<0.001*
No	12	24	1.00		
Having abnormality of sexual organ or anus in last 12 months					
Yes	33	15	3.49	1.48-8.26	0.002*
No	17	27	1.00		
Testing blood for sexual transmitted diseases					
Yes	39	17	5.21	2.10-12.95	<0.001*
No	11	25	1.00		
Low	40	16	6.50	2.56-16.50	<0.001*

The results from multivariate analysis (multiple logistic regressions adjusted for age and living with) found the associations between participant characteristics and behavioral risk of infection of sexually transmitted diseases among M. 5 students and vocational students in UbonRatchathani province, Thailand. The odds of having sexual activities among M. 5 students and vocational students were 3.92 times (OR_{adj} =3.92, 95%CI = 1.62-5.95) significantly greater for males compared to females, 3.42 times (OR_{adj}= 3.42, 95%CI= 1.01-5.66) significantly greater for aged 16 years compared to aged ≥ 17 years, 1.69 times (OR_{adj}= 1.69, 95%CI= 1.11-3.52) significantly greater for M. 5 students compared to vocational students, 5.69 times (OR_{adj} = 5.69, 95%CI= 3.24-9.12) significantly greater for

participants who were in relationships when compared to participants who were not in relationships, 2.58 times (OR_{adj} = 2.58, 95%CI= 1.42-4.89) significantly greater for income ≤ 5,000 Baht when compared to income >5,000 Baht, 6.44 times (OR_{adj} = 6.44, 95%CI= 2.84-8.33) significantly greater for participants living with parents (not mother or father) compared to who were living with both mother and father, 5.47 times (OR_{adj} = 5.47, 95%CI= 2.32-7.71) significantly greater for participants experience substance abuse compared to those had no experience, 5.89 times (OR_{adj} = 5.89, 95%CI= 3.67-8.43) significantly greater for adolescences experience alcohol consumption compared to those had no experience.The odd of having abnormality of sexual organ or anus in last 12 months in participants living with parents (not mother or father) was 5.92 times (OR_{adj} = 5.92, 95%CI= 2.84-8.67) significantly greater compared to who were living with both mother and father.The odd of testing blood for sexual transmitted diseases in participants who had sexual activities was 8.55times (OR_{adj} = 8.55, 95%CI= 4.64-12.34) significantly greater than those reporting no sexual activities. The odds of having sexual activities among early participants were 4.55 times (OR_{adj} = 4.55, 95%CI= 2.67-6.88) significantly greater for participants who had low knowledge level compared to who had high knowledge level, 9.87 times (OR_{adj} = 9.87, 95%CI= 4.67-13.86) significantly greater for participants who had low attitude level compared to who had high attitude level, 3.44 times (OR_{adj} = 3.44, 95%CI= 2.11-7.82) significantly greater for participants who had risk for sexual transmitted disease compared to who had no risk, 8.52 times (OR_{adj} = 8.52, 95%CI= 4.82-15.33) significantly greater for participants who had risk for unwanted pregnancy compared to those had no risk. There was no association between income and behavioral risk of infection of sexually transmitted diseases as presented in Table 3.

Table 3 : The multivariate analysis factors associated with behavioral risk of infection of sexually transmitted diseases among M. 5 students and vocational students in UbonRatchathani province, Thailand

Factors	behavioral risk of infection of STD(n=50)	OR[a]	OR^{b}_{adj}	95%CI	*p*-value
Sex					
Male	32	2.37	3.92	1.62-5.95	0.012*
Female	18		1.00		
Age (years)					
16	21	1.37	3.42	1.01-5.66	<0.001*
≥ 17	29		1.00		
Education level					
M. 5 students	23	1.43	1.69	1.11-3.52	<0.001*
vocational students	27		1.00		
In relationship(girlfriend/boyfriend)					
Yes	30	2.70	5.69	3.24-9.12	<0.001*
No	20		1.00		
Income (Baht)					
≤ 5,000	18	1.49	2.58	1.42-4.89	0.001*
> 5,001	32		1.00		
Living with					
living with parents (mother or father)	42	2.10	6.44	2.84-8.33	<0.001*
living with both mother and father	8		1.00		
Substance abuse					
Ever	34	3.12	5.47	2.32-7.71	0.001*
Never	16		1.00		
Alcohol consumption					
Ever	38	4.22	5.89	3.67-8.43	0.001*
Never	12				
Abnormality of sexual organ or anus in last 12 months					
Yes	33	3.49	5.92	2.84-8.67	<0.001*
No	17				

Blood test for sexual transmitted diseases

Ever	39	5.21	8.55	4.64-12.34	<0.001*
Never	11				
Knowledge level about sexual transmitted diseases					
Low level (<80% of corrected answer)	40	6.50	9.87	4.67-13.86	0.002*
Highlevel (≥80% of corrected answer)	10				
Attitude level					
Low - medium	27	1.28	3.44	2.11-7.82	0.012*
Good – very good	23				
Risk for cause of pregnancy					
Risky	31	4.67	8.52	4.82-15.33	0.001*
Not risky	19				

DISCUSSION

Male grade 11 students and vocational students were more likely to have sexual activities than female grade 11 students and vocational students in UbonRatchathani province, Thailand. This finding agreed with the study of the ASEAN institute for health development, Mahidol University that male students were more likely to have sexual activities than female students in vocational schools in Bangkok[9]. Female grade 11 students and vocational students in UbonRatchathani province were tended to have more sexual activities due to changing of social norm about woman and man equity. The average age of first sexual activity was 14.3 years old because the adolescences experience substance abuse had low knowledge level[10]. This study presented earlier age than the previous study by the Ministry of Public Health that found adolescences aged 15-16 years for the first sexual activity[11]. This finding was supported by Baokhumkong et al (2014)[12] that reported the causes of the first sexual activity in grade 11 studentsand vocational students in PathumThani province were due to lack of knowledge and miss understand about sex education including only one time sexual intercourse cannot pregnancy. Moreover, the social norm was changed to be more accepted about living with lovers among adolescences which have been reported 77.7% of grade 11 students and vocational students with relationships. This incorrect attitude may lead to risk of sexual activity. Hence, the knowledge and understanding about sex education should be provided to correct attitude in grade 11 students and vocational students. Concerning to living with, grade 11 students and vocational students living with other people (not father or mother) tended to have more sexual activity than those living with their father and mother. This finding agreed with other studies that students who living in dormitory were likely to have more sexual activities than those living with parents[12]. Students who were not living

with parents had positive attitude toward sexual activity before marriage[13]. Substance abuse and alcohol consumption also associated with behavioral risk of infection of sexually transmitted diseases among grade 11 studentsand vocational students who have ever consumed alcohol were more likely to have sexual activity compared to those never consumed alcohol. This association agreed with other studies that grade 11 students and vocational students aged 15-24 years who used substance abuse and consumed alcohol were more likely to increase risk of HIV/AIDs infections and sexual transmitted diseases[14]. Female students in vocational schools in Bangkok who used substance abuse were more likely to have sexual activity than those not used substance abuse[15]. Alcohol consumption and substance abuse were probably affected relaxing emotion, easily familiar each other, and unconscious behaviors that induced unsafe sex activity. In addition, the unsafe sex activities among males who have ever used substance abuse in Spain were associated with HIV/AIDs infection[16].

The levels of knowledge and attitude were related to behavioral risk of infection of sexually transmitted diseases among grade 11 students and vocational students in UbonRatchathani province. This relationship could be explained by PRECEDE MODEL that people who have high knowledge and attitude levels toward safe sex behaviors were tended to have more prevention and lower risk of HIV/AIDs and sexual transmitted diseases[17]. . This study used self-reported questionnaire to collect the information about behavioral risk of infection of sexually transmitted diseases which might contain bias data. The in-depth interview and qualitative study should be used to increase reliability of result. This study had been done in student in secondary school in UbonRatchathani province. The result might not generalize to other areas due to socio-demographic differences.

The recommendations from this research were mentioned as follows. The government should develop the effective curriculum and active campaign in order to give knowledge and prevent risk of behavioral risk of infection of sexually transmitted diseases. Especially in female adolescence, the rate of

behavioral risk of infection of sexually transmitted diseases in female students is rising. Therefore, female adolescence should be provided more knowledge and correct attitude to prevent the problem from behavioral risk of infection of sexually transmitted diseases.

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