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Health Literacy Associated with Sexual Risk Behavior of Sexually Transmitted Infections Among Adolescents

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Abstract

Background: The morbidity rate of sexually transmitted infections (STIs) among adolescents tends to increase steadily. The main problem is that adolescents also engage in sexually unsafe risky behaviors. According to past studies, there have been a lot of studies on sexual risk behaviors in adolescents. However, there have been no definitive studies about the association between various factors and health literacy with the sexual risk behavior of STIs in adolescents, which is still controversial. This study aims to evaluate the association between health literacy and sexual risk behavior of sexually transmitted infections among adolescents. **Method**: A cross-sectional analytical study was conducted among a population of Thai adolescents aged 15-24 years who were in an educational institution in Muang District, Ubon Ratchathani Province in 2023. The primary outcome of this study was the sexual risk behavior in STIs of adolescents and factors of interest such as health literacy. Questionnaires were administered for data collection. Statistical analysis includes descriptive statistics for the characteristics data were described using frequency and percentage for categorical data. The mean, standard deviation, median, and minimum and maximum ranges were used for continuous data. Both bivariate and multiple logistic regression to evaluate the association between each factor and sexual risk behavior in STIs. Results were presented as adjusted odds ratio with 95% confidence interval and p-value was computed to determine the level of significance. **Result**: of 450 adolescents aged 15-24 years, 47.56% were female and 52.44% were male, with a mean age of 19.07± 2.37 years old (range: 15-24). The overall percentage of high levels of sexual risk behaviors for STIs was 77.33%. Adolescents with low sexual health literacy were found to have a high level of sexual risk behaviors for STIs of 78.81% and male adolescents were found in 74.15%. Low sexual health literacy and male adolescents were more likely to have a high level of sexual risk behaviors for STIs (ORadj= 1.09; 95% CI: 0.29 – 1.17 and ORadj= 5.10; 95% CI:1.98 – 5.08, respectively). **Conclusion**: Our findings demonstrated a high percentage of high levels of sexual risk behaviors for STIs among adolescents. Adolescents who had a low health literacy were more likely to have a high level of sexual risk behavior for STIs. Comprehensive sexually transmitted infection (STIs) prevention programs should be implemented, especially for adolescents.

Keywords: sexually transmitted diseases (STIs), sexual health literacy, social media influence

INTRODUCTION

Sexually transmitted infections (STIs) remain a serious public health problem worldwide. The yearly incidence estimated by the World Health Organization (WHO) is approximately 376 million new infections with the four curable STIs (chlamydia, gonorrhea, trichomoniasis, and syphilis), which represents an average of more than one million new infections per day [1]. Similar to the situation in Thailand, sexually transmitted infections are on the rise, and it is also a major public health problem in the country [2].

According to the "Thailand Health 2020 report" of the Institute for Population and social research of Mahidol University in 2020 found that: the number of syphilis cases among adolescents

and youth in both males and females are increasing, with 16,262 adolescents and youth suffering from all sexually transmitted infections (excluding HIV/AIDS) in 2019 and 15,575 in adolescents 15-24 age group [3]. The northeast have sexually transmitted disease rates in the age group of 15-24 years, the morbidity rate has increased over the past 5 years (2014 - 2018), with the third highest morbidity rate after the northern and central regions. The morbidity rates are 150.6, 115.8 and 94.59 per 100,000 population. However, according to the health district, the 10th health district in the northeast has a high STI morbidity rate of 138.7 per 100,000 population. This is a very high rate of sexually transmitted infections and is likely to continue increase more than [4]. In 2018, nationwide there were a high number of cases of syphilis. The rate of sexually transmitted illness is more common among youth aged 15-24 years. This is higher than other age groups, which may be the cause of the increase in the severity of sexually transmitted diseases, including syphilis [5]. World Health Organization defines 'Adolescents' or 'Youth' as the 15-24 year age group [6]. It is the age of connection between childhood and adulthood. Changes in body, mind emotions, which result in In addition, youth are curious and want to try and are easily persuaded by those around them, so they are more likely to be persuaded to engage in inappropriate sexual risk behavior [7].

From the analysis of the situation, it was found that the main problem is that the youth still have unsafe sexual risky behaviors due to lack of knowledge and understanding of prevention. There are measures taken to reduce the problem. The behavior of individuals who can understand, use knowledge, self-assessment, and communicate health information, both personal and community health, has practices that promote healthy habits. Stop unhealthy behaviors [8].

Based on the background and the problem, the researcher is aware of sexually inappropriate behaviors that pose a risk of sexually transmitted diseases. This is because the groups at risk of unsafe sexual behavior, especially the youth, are creating a quality of life for themselves and will be an important resource in the development of the nation. This study aims to evaluate the association between health literacy and sexual risk behavior of sexually transmitted infections in Thai adolescents. This study will provide the basic information that all stakeholders, including the family, need. Academy and other government agencies use it to plan projects and activities that can be prevented and corrected more directly.

METHOD

Study design

This study uses a cross-sectional analytical study was conducted between July 2023 to June 30, 2024. Our study sample were collected Thai adolescents aged 15-24 years who were vocational students studying at vocational certificate (V.Certificate) and Higher Vocational Certificate (H.Vocational Diploma) in a vocational school in Muang District, Ubon Ratchathani Province in semester 1/2023. The study included 450 participants from a vocational school was selected by a multistage random sampling. Questionnaires were administered for data collection.

Study outcome (Primary outcomes and study factors)

The primary outcome of this study was the sexual risk behavior in sexually transmitted infections (STIs) of adolescents with define as ordinal level is divided into 2 levels as follows: high and low Sexual risk behavior in STIs. The questionnaires of sexual risk behavior in sexually transmitted infections (STIs) is a choice of yes/no answer, consisting of 20 item allowing the respondent to choose only one answer: include sexual intercourse in the last 1-3 months (yes/no), drink alcoholic before sexual intercourse (yes / no) and condom use during last intercourse (yes/no), total score between 1 - 25 points (or 100 percent of the full score), divided into 3 levels (low , moderate and high level of sexual risk behavior of STIs).

Factor of interest such as health literacy define as ordinal level is divided into 2 levels as follows: high and low health literacy level (health literacy level total score between 20 - 60 points and 100 percent of the full score). Demographic characteristics of study participants information is categorical such as gender (male/female), age groups (15-19 years/20-24 years), education levels(vocational certificate/high vocational certificate), economic status (divided into 5 groups), residential accommodation (divided into 5 groups) and The results of health literacy was stratified using the concepts of Department of disease control, ministry of public health (2020) [10]. including: access to health information and services, understanding, communication, making decisions and actions to prevent sexually transmitted diseases, and applying from the literature review on the relationship between sexual health literacy and sexual behavior among middle school students [11].

Statistical analysis

Methods for describing baseline characteristics of the sample: Demographic characteristics of the participants were described using frequency and percentage for categorical data and mean and standard deviation, median, minimum and maximum ranges for continuous data such as age in years, economic status and health literacy. **Methods for answering the research question(s):** Simple logistics regression analysis were use to crude analysis bivariate to evaluate the association between each factor (e.g. gender, age groups, education levels, economic status groups , residential accommodation groups and health literacy level.) and sexual risk behavior in sexually transmitted infections (STIs).

The result is Crude Odds and p-value. Consider p-value < 0.05 for selection independent variables enter the analytical final model. An adjusted odds ratio with 95% confidence interval and p-value was computed to determine the level of significance. Software, level of significant, and ethics (with trial registration ID number, if being registered at http://www.clinicaltrials.in.th): All analyses were performed using Stata version 18.0 (Stata Corp, College Station, TX). All test statistics were two-sided and a p-value of less than 0.05 was considered statistical significant. This project was approved by the Human Research and Ethics Committees of the Ubon Ratchathani Rajabhat University, Thailand.

RESULTS AND DISCUSSION

Demographic Characteristics of Study Participants

A total of 450 participants studied, more than half were male (52.44%), the mean age was 19.06 years (SD =2.37) with an interquartile range of 15–24 years; from this amount, the majority of around two quarter (53.78%) have age interquartile range of 15–19 years. Around two quarter (51.11%) were study in high vocational certificate; About a quarter of the average economic status during study is 6,071 baht (SD = 2.36); most of them living with sweetheart (21.56%) and overall health literacy level was found that more than half were at low health literacy level of STIs (94.22%) (Table 1).

Table 1. Demographic Characteristics of Study Participants (n=450)

Characteristics	Number	Percentage
Gender		
Male	236	52.44
Female	214	47.56
Age (years)		
15 – 19	242	53.78
20 – 24	208	46.22
Mean (SD)	19.07 (2.37)	
Median (Min : Max)	19 (15:24)	
Education level		
Vocational Certificate	220	48.89
High Vocational Certificate	230	51.11
Economic status		
< 3,000	61	13.56
3,001 – 5,000	91	20.22
5,001 – 7,000	121	26.89
7,001 – 9,000	122	27.11
> 9,001	55	12.22
Mean (SD)	6071.67 (2366.05)	
Median (Min : Max)	6229.50 (1522:9984)	
Residential accommodation		
Father/mother	87	19.33
Friend	93	20.67
Sweetheart	97	21.56
Living alone	87	19.33
Staying with relatives	86	19.11
Health literacy level		
Low (score < 60%)	424	94.22
High (score > 80%)	26	5.78
Mean (SD)	51.84 (17.45)	
Median (Min : Max)	51 (17:85)	

Level of sexual risk behavior in sexually transmitted infections (STIs)

Level of sexual risk behavior in sexually transmitted infections (STIs) among adolescents classified by overall level of opinion It was found that most had high risk level in sexual risk behavior of sexually transmitted infections (STIs) (77.33%) (Table 2).

Table 2. Level of sexual risk behavior in STIs among adolescents (n=450)

Level of sexual risk behavior in STIs	Number	Percentage
Sexual risk behavior in STIs		
High (score > 80%)	348	77.33
Low (score < 60%)	102	22.67
Mean (SD)	43.84 (12.59)	
Median (Min : Max)	50 (2:59)	

Main findings

Factors associated with sexual risk behavior in STIs

Of 450 participants, the overall rate of sexual risk behavior in STIs among adolescents was 77.33%. The results from crude analysis using simple logistic regression statistics found that the odds risk behaviors of sexually transmitted diseases were 2.93 times (COR = 2.93; 95% CI: 1.84 – 4.67; p-value = 0.001) significantly greater for males compared to females and low health literacy level of STIs were 3.16 times the chance of getting sexual risk behaviors for STIs compared to a high level of sexual risk behaviors for STIs (COR = 3.16; 95% CI: 2.53 – 3.94; p-value = 0.001) (Table 3).

Multivariable analysis using multiple logistic regression statistics. After controlling for the effect of sex and health literacy level of STIs, our results found that male's adolescent have chance of having high level of sexual risk behaviors for STIs 5.10 times (ORadj =5.10, 95% CI: 1.98 – 5.08; p-value = 0.001) compared to female and low health literacy level of STIs were 1.09 times the chance of getting sexual risk behaviors for STIs compared to a high level of sexual risk behaviors for STIs (ORadj = 1.09; 95% CI: 0.29 – 1.17; p-value = 0.001) (Table 4).

Table 3. Crude odds ratio of sexual risk behavior in sexually transmitted infections for each factor ignoring for other factors. (n=450)

.Factors	Number of samples	Number sexual risk behavior in STIs	(%) Outcome	Crude OR	95% CI	p-value
Overall	450	348	(77.33)	N/A	N/A	N/A
Gender						0.001
Female	214	145	67.76	1		
Male	236	203	86.02	2.93	1.84 – 4.67	

Age (years)						0.077
20 – 24	208	153	73.56	1		
15-19	242	195	80.58	1.49	0.96-2.32	
Education						0.799
Vocational Certificate	220	169	76.82	1		
High Vocationa Certificate	230	179	77.83	1.06	0.68-1.65	
Economic status						0.343
< 3,000	61	47	77.05	1		
3,001 – 5,000	91	77	84.62	1.64	0.72- 3.74	
5,001 – 7,000	121	93	76.86	0.99	0.48 – 2.06	
7,001 – 9,000	122	92	75.41	0.91	0.44 – 1.89	
> 9,001	55	39	70.91	0.73	0.32 – 1.67	
Residential accommodation						0.943
Father/mother	87	67	77.01	1		
Friend	93	74	79.57	1.16	0.57 – 2.36	
Sweetheart	97	73	75.26	0.91	0.46 – 1.79	
Living alone	87	66	75.86	0.94	0.47 – 1.89	
Staying with relatives	86	68	79.07	1.13	0.55 – 2.32	
Health literacy level						0.001
Low (score < 60%)	424	322	75.94	1		
High (score > 80%)	26	26	100.00	3.16	2.53 – 3.94	

Table 4. Adjusted odds ratio of sexual risk behavior in sexually transmitted infections (n=450)

.Factors	Number of samples	Number sexual risk behavior in STIs	(%) Outcome	Crude OR	Adjusted OR	95% CI	p-value
Overall	450	348	(77.33)	N/A	N/A		
Gender							0.001
Female	214	97	45.33	1	1		
Male	236	175	74.15	3.17	5.10	1.98 – 5.08	
Health literacy level							0.001
High (score > 80%)	43	35	81.40	1	1		
Low (score < 60%)	256	106	78.81	0.58	1.09	0.29 – 1.17	

Sexual risk behaviors in adolescents are a major problem in modern times. This leads to premature sexual intercourse and sexually transmitted infections.[1] According to this study, the majority of respondents that the aadolescents have high level of sexual risk behaviors for STIs was 77.33% consistent with the study of Nadaprapai Sara and Chutima Harumruangwong (2016) [12] study about prevalence of sexual experience and associated factors of sexual debut among female vocational students in Nonthaburi, the study results found that: the prevalence of sexual experience among this group of vocational students was 66.1% [12].

Factors associated with sexual risk behavior of sexually transmitted infections among adolescents: it was found that gender and health literacy associated with sexual risk behavior of sexually transmitted infections among adolescents was statistically significant at .001. The study in

Mahidol University have report on behavioral surveillance survey associated with HIV Infection in 6 target populations in 2017, it was found that male second-year vocational school students were clearly more sexually active than female students [13]. Similarly, the study of Nong Nuch Kawewong (2016) [14], study of factors affecting the intention to use sexual and reproductive health services of youth in Rayong province. It was found that men have a higher proportion of first-time sex than women.

Sexual health literacy were found that: adolescents with low sexual health literacy were found to have a high level of sexual risk behaviors for STIs of 75.94 % this may be due to the average age of teenagers being 19 years. The underage age group causes a lack of cognition and awareness of sexual education prevention [15]. Consistent with the study of Pusit siritet (2015), study on knowledge about sexually transmitted diseases and attitudes for preventing sexually transmitted diseases according to the communicable diseases 2015, Phetchaburi province [16].

It was found that knowledge of sexually transmitted diseases was low. And even though there are many widespread public relations campaigns about sexually transmitted diseases. There are also new modern media such as the Internet. However, in most Thai societies, in some families, parents still consider that premature sexuality is still unacceptable to be disseminated or should not be disclosed to adolescents because it may point out burrows to squirrels or encourage adolescents to have more sexual behavior. This makes being able to access information or knowledge about sexual health difficult and far-fetched for adolescents in societies where families restrict sex education. As a result, today's adolescents still have a low level of sexual health literacy. Enabling the ability to think and analyze data related to health or decision-making. Discrimination against behaviors to prevent risky sexual behaviors is also inappropriate, which is why adolescents practice risky behaviors [17]. In particular, the disease is on the rise among adolescents in Thailand. The results of this study will be used as data for further surveillance.

CONCLUSION

Our findings demonstrated a high percentage of high levels of sexual risk behaviors for STIs among adolescents. In adolescents, males will have more likely to have a high level of sexual risk behavior for STIs than female. And adolescents who have low health literacy were more likely to have a high level of sexual risk behavior for STIs than who have high health literacy. Comprehensive sexually transmitted infections (STIs) prevention programmers should be implemented, especially adolescents

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REFERENCES

[1]. Rowley J, Vander Hoorn S, Korenromp E, Low N, Unemo M, Abu-Raddad LJ, et al. Chlamydia, gonorrhoea, trichomoniasis and syphilis: global prevalence and incidence estimates, 2016. *PubMed Central PMCID* 2019; 97(8):548–62

[2]. Department of disease control of ministry of public health; Public Health.Summary of STI Surveillance Report R.R.506. Nonthaburi: Department of disease control, ministry of public health; 2020.

[3]. Institute for Population and Social Research. Thailand Health 2020. Mahidol University.2020.

[4]. Sawadcharoenying, P. A Study of Factors Affecting Sexually Transmitted Disease Prevention and Control Implemented by the Division of Aids and During 2010-2019. Division of AIDS and STIs, Department of Disease Control. *Ministry of Public Health Thai AIDS Journal* 2020, 32(3), 95-114.

[5]. Situation of the 5 Main Sexually Transmitted Diseases in Youth in Thailand Fiscal Year. Retrieved November 25, 2023 from https://ddc.moph.go.th/uploads/publish/1006020200507053840.pdf

[6]. World Health Organization (WHO). WHO defines 'Adolescents'. World Health Organization: Geneva, Switzerland; 2023

[7]. Baokhumkong, J., & Kata, S. Factors associated with risk behavior of HIV Infection and sexually transmitted diseases of students: the case study in Ubon Ratchathani. *Journal of the office of DPC7 Khon Kaen*, 2019, 26(1), 66-76.

[8]. Kankrung, J. A Study on Health Intelligence of Undergraduate Students of Pibulsongkhram Rajabhat University [Master of Science Thesis]. Phitsanulok: Pibul Rajabhat University Songkhram; 2021.

[9]. Suwanphan, K. et al. Health literacy factors associated with risk behavior in HIV infection among high school male students, Bueng Kan province. *Journal of the office of DPC 7 khon kaen 2019;*26(2):71-82.

[10]. Ministry of public health. HIV and STI Literacy Guide. Nonthaburi: Department of disease control, ministry of public health; 2020.

[11]. Tangnorakul, P., Sananreangsak, S. & Teerarungsikul, N. The relationship between sexual health literacy and sexual behavior among middle school students. *Royal Thai Navy Medical Journal* 2019, 46(3), 607-620.

[12]. Sara N, Roomruangwong C. Prevalence of sexual experience and associated factors of sexual debut among female vocational students in Nonthaburi. *Chula Med J* 2018;60(2): 215 – 30.

[13]. ASEAN institute for health development of Mahidol University. Survey report on behavioral surveillance related to HIV infection in 6 target populations. Bangkok Area 2017. Nakornpathom: ASEAN Institute for Health Development. Mahidol University; 2017.

[14]. Kawewong, N. Factors affecting the intention of youth to use sexual and reproductive health services in Rayong Province [Master of Nursing degree thesis]. Chonburi: Burapha University;2018.

[15]. Niramon Pansuwan, Supiya Chandramani. Prevalence and incidence of HIV infection in countries Thailand.Nonthaburi: Office of Epidemiology, Department of Disease Control. Ministry of Health; 2020.

[16]. Siritet, P. Tunij, S. Hemthong, V and Busaratij, K. Knowledge of sexually transmitted diseases and attitudes for preventing sexually transmitted diseases according to the Communicable Diseases Act of secondary school students in Muang District, Phetchaburi Province. *Journal of public health law and policy* 2021; 16(2):53-70.

[17]. Wongsakdirin, W. The Influencing Factors of sexual risk behavior for having sex of students in secondary school students. *Silpakorn educational research journal* 2021; 13(2): 151-168.