

Factor Associated with Sexual Health Literacy Among Secondary School Female Students in The Southern Province of Thailand

Premyuda Narkarat MNS^{1,2}, Surasak Taneepanichskul MD¹

¹ College of Public Health Sciences, Chulalongkorn University, Bangkok, Thailand

² Health Promotion Center 11, Nakhon Si Thammarat, Thailand

Background: Adolescent pregnancy is one of the major public health issues globally and in Thailand. Sexual health literacy (SHL) is an important factor to prevent teenage pregnancy.

Objective: To assess the level of SHL and to explore factors associated with SHL among female secondary school students, in a southern province of Thailand.

Materials and Methods: A cross-sectional study was conducted in a southern province of Thailand. One hundred twenty-eight female secondary school students were randomly selected to participate in the present study. The SHL questionnaire was used to assess participants' SHL and included four domains 1) accessing information, 2) understanding information, 3) appraising information, and 4) applying or practicing. The scores of SHL were calculated using the formula "Index - score, which is mean less the minimal value of mean times 50 divided by 3". The results were divided into four levels as inadequate if less than 25, problematic from 26 to 33, sufficient from 34 to 42, and excellent if greater than 42. Both the formula and the levels were adopted from the European Health Literacy Survey (HLS-EU-Q47) method. Descriptive statistics were used to analyze general characteristic information. Chi-square was used to find factors associated with SHL.

Results: The findings revealed that more than half of the participants had inadequate SHL scores regarding access to sexual health information, understanding and appraising SHL, and applying SHL in life. The results showed that the grade point average (GPA) was statistically significant associated with SHL (chi-square=6.24, p=0.04).

Conclusion: Most adolescents in the present study had inadequate scores on SHL. Therefore, knowledge information and practice regarding accessing information, understanding of SHL, appraising of SHL, applying or practice and skill development, and decision making should be provided and encouraged among high school teenagers.

Keywords: Sexual Health Literacy; Health Literacy

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Adolescent pregnancy is one of the major public health issues globally and in Thailand. The prevalence of early age adolescents becoming sexually active is increasing more than in the past⁽¹⁾. Studies found that forty-one percent of adolescents were sexually active, and about twenty percent were engaging in risky sexual behaviors^(1,2). The reported data showed

that annually about forty-seven childbirths are occurring per 1,000 adolescent mothers in the world⁽³⁾. According to the global data, the Multiple Indicators Cluster Survey (MICS) in Thailand between 2019 and 2020 by the United Nations Children's Fund, there were 23 pregnancies per 1,000 adolescent females between the age of 15 and 19⁽⁴⁾. The birth rates among adolescents aged 15 to 19 years between 2013 and 2015 were 51.1, 47.9, 44.8 per 1,000 females, respectively^(5,6). In 2018, the childbearing rate among adolescents aged 10 to 19 years was 12.9%⁽⁷⁾. Teenage pregnancy is a large-scale global problem, often found in middle to lower-income countries, such as in Thailand^(8,9). The situation of adolescent pregnancy has become a problem in Thai society⁽¹⁰⁾. The data have shown a high prevalence of adolescent pregnancy in the southern part of Thailand including Chumphon Province, Krabi Province, and Nakhon Si Thammarat Province⁽¹¹⁾. The targets

Correspondence to:

Narkarat P.

College of Public Health Sciences, Chulalongkorn University, Institute Building 2-3, Soi Chulalongkorn 62, Phayathai Road, Pathumwan, Bangkok 10330, Thailand.

Phone: +66-8-2798923, **Fax:** +66-2-2556046

Email: forrain_b@hotmail.com

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of the birth rate of adolescents aged 15 to 19 are not more than 38 per thousand population, and the percentage of repeated adolescents' pregnancies under the age of 20 are not more than 14.5%⁽¹²⁾. The goal to prevent adolescent pregnancy has not been successful yet; moreover, young adolescents are still lacking knowledge toward sexual health literacy (SHL) leading to repeated problems such as early age pregnancy, sexually transmitted diseases (STD), and lack of knowledge in childbearing and care⁽¹³⁾. Adolescents continue to engage in high-risk sexual behavior although receiving sexual health information. Furthermore, sexual risk behavior among adolescent female aged 14 to 18 years are indicated for modification of prevention efforts for sexual health promotion⁽¹⁴⁾. Ungsinun and Thanchanok (2017) purposed to develop a health literacy (HL) scale for unwanted pregnancy prevention of Thai female adolescents. The results suggested that the overall HL of the subjects was at the low level for 95.5%⁽¹⁵⁾. Furthermore, Ngomsangad and Srisuriyawet (2019) found that female adolescent students had a fair level of HL-related to pregnancy prevention (71.3%)⁽¹⁶⁾.

SHL represents the cognitive and social skills that determine the motivation and ability of individuals to gain access to information, to understand and apply knowledge information and decision about health such as to be able to communicate with a sexual partner about complex risks, and to make a decision toward health and other consequences⁽¹⁷⁾. SHL implies the achievement of knowledge levels, personal skills, and confidence to take action to improve personal and community health by changing personal lifestyles and living conditions toward sexual and reproductive health. Improving people's access to health information, and their capacity to use it effectively, SHL is a critical tool to empower young adolescents. Therefore, the objectives of the study were to access female secondary school students' SHL level and explore factors associated with SHL among female secondary school students in the upper southern part of Thailand.

Materials and Methods

A cross-sectional study was conducted on female secondary school students in the Nakhon Si Thammarat and Krabi Provinces, located in the upper southern part of Thailand. One hundred twenty-eight students were recruited to the present study. Purposive sampling was employed to select the study provinces with the highest adolescent pregnancy in the southern areas of Thailand. Participants were randomly

selected from grade-8 secondary schools. The reason to recruit grade-8 students was because they were not newly enrolled students, and they did not have to prepare for an exam, so they could concentrate on participating in the study. The inclusion criteria were 1) Thai females who were currently studying in secondary school, 2) currently living in Nakhon Si Thammarat province of Thailand, 3) willing to participate in the study. Students were free to refuse to participate in the study regardless of the reason.

The SHL questionnaire derived from Vongxay et al (2019) was used in the present study⁽¹⁸⁾. The questionnaire consisted of 39 questions with the reliability of the questionnaire of 0.9. The questionnaires were reviewed by experts from the field of reproductive health. The experts working in this field added issues related to specific situations and definitions on methods of contraception such as contraceptive pills, emergency contraceptive pills, and condoms but maintains the 39 items. The SHL questionnaire is composed of four domains including 1) accessing information, 2) understanding information, 3) appraising information, and 4) applying or practicing. The self-reported questionnaires regarding socio-demographic characteristics were gathered from respondents including grade level, age, current grade point average (GPA), average stipend, living with parents, parent's marital status. The level of score part in the questionnaire was classified into very difficult, difficult, easy, and very easy. The score of the present study calculated the SHL score using the formula "Index – score = (mean – minimal value of mean) * (50/3)", scaled into four levels as inadequate for less than 25, problematic as greater than 25 to 33, sufficient as greater than 33 to 42, and excellent as greater than 42 to 50. Both the formula and the scales were adopted from the European Health Literacy Survey (HLS-EU-Q47) method⁽¹⁹⁾. Data were collected between January and February 2020. Self-administered questionnaires were distributed to participants, and the duration for each person to complete the questionnaire was approximately 30 to 45 minutes.

Data analyses were conducted using IBM SPSS Statistics, version 22.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics including frequency, percentage, mean, and standard deviation (SD) were used to analyze general characteristics information. Chi-square test was used to find factors associated with SHL among secondary school female students.

The present study was approved by the Research Ethics Review Committee for Research Involving

Human Research Participants, Health Sciences Group, Chulalongkorn University (COA No. 252.2/62). Participants were explained about the study objectives, data collection process before the study. Participants signed written consent forms indicating their willingness to join the study, and they have the right to refuse to participate in the study at any time. Their information would be kept confidential.

Results

Table 1 describes the socio-demographic characteristics of the participants. The population of the present study consisted of 128 female secondary school students. All participants were 14 years old, currently studying at Matthayom 2 (Grade 8). The GPA of the participants was 3.24, their average monthly allowance (Thai Baht) was 3,206.88±1,313.05 (approximately 105 USD), living with their parents at 88.3%. Most of their parent's marital status was living together (93.8%).

Table 2 shows the numbers and percentages of SHL scores of female students. The questions exploring participants' SHL included 39 statements. The maximum score was 50 points. The results showed that more than one-third of the participants answered "very difficult" on the following nine statements. For understanding 1) understand what to do in cases when you have or your friend has a dangerous problem related to pregnancy (38.3%), 2) understand what to do in cases when you have or your friend has a dangerous problem related to miscarriage or abortion (38.3%), 3) understand the problems that can occur if you are or your friend is pregnant (41.4%). For applying 4) decide what to do when you have or your friend has a problem related to contraceptives such as contraceptive pills, emergency contraceptive pills, and condoms (33.6%), 5) decide what to do when you discover or your friend discovers a pregnancy such as keeping the baby, abortion, or adoption (36.7%), 6) talk with your family about teenage pregnancies, contraceptive methods, or abortion (39.1%), 7) talk or negotiate with your sexual partner about using a contraceptive method before having sex such as contraceptive pills, emergency contraceptive pills, and condoms (40.6%), 8) decide what to do when you have or your friend has a problem related to abortion such as severe bleeding, pain, or infection (41.4%), and 9) decide what to do when you have or your friend has a problem related to pregnancy (42.2%).

Table 3 shows the level of SHL scores among students. The results showed that half of the

Table 1. Numbers and percentages for the participants' socio-demographic characteristics

Socio-demographic characteristics	n (%)
Total	128 (100)
Current grade point average	
≤3.37	64 (50.0)
>3.37	64 (50.0)
Mean±SD (min, max)	3.24±0.56 (2.12, 4.00)
Average monthly allowance (Baht)	
≤3,000 (105 USD)	88 (68.8)
>3,000	40 (31.3)
Mean±SD (min, max)	3,206.88±1,313.05 (1,000, 10,000)
Living with parents	
Parents	113 (88.3)
Relatives/others	15 (11.7)
Parent's marital status	
Together	120 (93.8)
Separate	8 (6.3)

SD=standard deviation

participants had inadequate SHL scores (50.8%). Only a few of them had sufficient health sexual literacy.

Table 4 shows factors associated with the SHL of students. The results showed that GPA was statistically significant associated with HL (chi-square=6.24, p=0.04). It was found that students with a GPA greater than 3.37 had a proportion of SHL responses at the problematic level higher than the students with a GPA less than or equal to 3.37 (78.57% versus 21.43%).

Discussion

The present study focused on accessing SHL and describing factors associated with SHL among female secondary school students in the Nakhon Si Thammarat Province located in the upper southern area of Thailand. The results of the present study revealed that most adolescents had inadequate SHL toward many issues such as where to seek health information and professional help, not understanding the consequences of not using contraceptives, decision making when a problem occurs, and not able to communicate with their family about the problem related to early pregnancy. The present study result is consistent with the study done in Vientiane, Laos that used the same SHL questionnaire. The study found that most adolescents had inadequate SHL, and their scores mostly were problematic^(20,21). Previous studies mentioned that SHL knowledge and skill is strongly associated with higher score of SHL, and

Table 2. Numbers and percentages of sexual health literacy scores among secondary school female students (n=128)

Sexual health literacy	Level; n (%)			
	Very difficult	Difficult	Easy	Very easy
Accessing				
1. ...find information about which contraceptives you can use (e.g., contraceptive pills, emergency contraceptive pills, and condoms)?	4 (3.1)	44 (34.4)	53 (41.4)	27 (21.1)
2. ... find information about possible side-effects of contraceptives (e.g., contraceptive pills, emergency contraceptive pills, and condoms)?	7 (5.5)	42 (32.8)	59 (46.1)	20 (15.6)
3. ...find information about early symptoms of pregnancy and pregnancy testing?	9 (7.0)	56 (43.8)	50 (39.1)	13 (10.2)
4. ...find information about how you can live healthy during pregnancy?	22 (17.2)	44 (34.4)	49 (38.3)	13 (10.2)
5. ...find information on where to get (professional) help when you are/ your friend is pregnant?	26 (20.4)	41 (32.1)	49 (38.3)	12 (9.4)
6. ...find information about problems that can occur during a teenage pregnancy?	30 (23.4)	36 (28.1)	46 (35.9)	16 (12.5)
7. ...find information about a safe induced abortion?	34 (26.6)	36 (28.1)	49 (38.3)	9 (7.0)
8. ... find information about problems that can occur if having a miscarriage or induced abortion?	36 (28.1)	30 (23.4)	51 (39.8)	11 (8.6)
9. ...find information about activities (in your community or school) that you can join about contraceptives, teenage pregnancies, and/or induced abortion?	5 (3.9)	60 (46.9)	35 (27.3)	28 (21.9)
Understanding				
10. ...understand your doctor's/pharmacist's instructions on how to use contraceptives/medicine (e.g., contraceptive pills, emergency contraceptive pills, and condoms)?	18 (14.1)	48 (37.5)	58 (45.3)	4 (3.1)
11. ...understand information that comes with your leaflet/product packages (e.g., contraceptive pills, emergency contraceptive pills, and condoms)?	0 (0.0)	58 (45.3)	61 (47.7)	9 (7.0)
12. ...understand the information in the media about pregnancy, contraceptives, or induced abortion (e.g., Facebook, Google, television, brochures, and poster)?	0 (0.0)	56 (43.8)	63 (49.2)	9 (7.0)
13. ...understand how sexual intercourse without contraceptive methods (e.g., condoms etc.) can lead to pregnancy?	24 (18.8)	44 (34.4)	52 (40.6)	8 (6.3)
14. ...understand how you can test if you are/your friend is pregnant and what symptoms occur in the first stage of pregnancy?	22 (17.2)	43 (33.6)	57 (44.5)	6 (4.7)
15. ...understand why pregnant teenage girls need to live healthily and see a professional doctor regularly during their pregnancy?	21 (16.4)	48 (37.5)	57 (44.5)	2 (1.6)
16. ...understand what to do in cases when you have/ your friend has a dangerous problem related to pregnancy?	49 (38.3)	22 (17.2)	53 (41.5)	4 (3.1)
17. ...understand what to do in cases when you have/ your friend has a dangerous problem related to miscarriage or abortion?	49 (38.3)	28 (21.9)	48 (37.5)	3 (2.3)
18. ...understand the problems that can occur if you are/ your friend is pregnant?	53 (41.4)	18 (14.2)	53 (41.4)	4 (3.1)
19. ...understand the problems that can occur if you have/ your friend has an abortion?	30 (23.4)	45 (35.2)	48 (37.5)	5 (3.9)
Appraising				
20. ...judge what the advantages and disadvantages are for you of using contraceptives?	20 (15.6)	51 (39.8)	45 (35.2)	12 (9.4)
21. ...judge what the advantages and disadvantages are for you keeping the baby versus having an induced abortion, in case of unintended pregnancy?	23 (18.0)	47 (36.7)	50 (39.2)	8 (6.3)
22. ...judge if it is necessary for you to go to the doctor if you have questions about pregnancies, contraceptives, and/or abortion?	21 (16.4)	50 (39.1)	42 (32.8)	15 (11.7)
23. ...judge the quality of the information in the media about pregnancies, contraceptives, and/or abortion?	34 (26.6)	37 (28.9)	45 (35.2)	12 (9.4)
24. ...judge the quality of information from your family and friends about pregnancies, contraceptives, and/or abortion?	34 (26.6)	33 (25.8)	52 (40.6)	9 (7.0)
25. ...judge the quality of information from your doctor or pharmacist about pregnancies, contraceptives, and/or abortion?	24 (18.8)	43 (33.6)	50 (39.2)	11 (8.6)
26. ...judge the quality of information from your teacher or out-school/work activities?	18 (14.1)	54 (42.2)	51 (39.8)	5 (3.9)
Applying				
27. ...use contraceptives before having sex?	39 (30.5)	35 (27.3)	46 (35.9)	8 (6.3)
28. ...use the doctor's or pharmacist's instructions about pregnancies, contraceptives, and/or abortion?	25 (19.5)	51 (39.8)	48 (37.5)	4 (3.1)
29. ...follow the instructions that come with your leaflet/product packages (e.g., contraceptive pills, emergency contraceptive pills, and condoms)?	21 (16.4)	44 (34.4)	36 (28.2)	27 (21.1)
30. ...decide what to do when you discover/your friend discovers a pregnancy (keeping the baby, abortion, adoption)?	47 (36.7)	18 (14.1)	32 (25.0)	31 (24.2)
31. ...decide what to do when you have/ your friend has a problem related to pregnancy?	54 (42.2)	23 (18.0)	48 (37.5)	3 (2.3)
32. ...decide what to do when you have/ your friend has a problem related to contraceptives (e.g., contraceptive pills, emergency contraceptive pills, and condoms)?	43 (33.6)	31 (24.2)	51 (39.8)	3 (2.3)
33. ...decide what to do when you have/your friend has a problem related to abortion (e.g., severe bleeding, pain, infection)?	53 (41.4)	27 (21.1)	43 (33.6)	5 (3.9)
34. ...talk/negotiate with your sexual partner about using a contraceptive method before having sex (e.g., contraceptive pills, emergency contraceptive pills, and condoms)?	52 (40.6)	25 (19.5)	44 (34.4)	7 (5.5)
35. ...talk with your friend about teenage pregnancies, contraceptive methods, and/or abortion?	36 (28.1)	39 (30.5)	47 (36.7)	6 (4.7)
36. ...talk with your family about teenage pregnancies, contraceptive methods, and/or abortion?	50 (39.1)	24 (18.6)	48 (37.5)	6 (4.7)
37. ...consult your health provider (e.g., doctor or nurse) about teenage pregnancies, contraceptives, and/or abortion?	20 (15.6)	51 (39.8)	52 (40.6)	5 (3.9)
38. ...consult your teacher about teenage pregnancies, contraceptives, and/or abortion?	11 (8.6)	63 (49.2)	50 (39.1)	4 (3.1)
39. ...join/take part in a sexual education activity, family planning, and teenage supportive activities?	3 (2.3)	62 (48.4)	37 (28.9)	26 (20.3)

Table 3. Level of sexual health literacy scores among secondary school female students

Level of sexual health literacy scores	Number (n=128); n (%)
Inadequate (0 to 25 points)	65 (50.8)
Problematic (>25 to 33 points)	14 (38.3)
Sufficient (>33 to 42 points)	9 (10.9)
Mean±SD (min, max)	22.21±12.56 (6.84, 39.74)

SD=standard deviation

its competency influences the SHL level^(22,23). The present study added to the authors understanding that adolescents in the study areas had low scores on SHL. However, there should be measures to increase their skills and knowledge on SHL. The present study showed an association between GPA and SHL. It was found that students with a GPA greater than 3.37 had a proportion of SHL responses at the problematic level higher than the students with a GPA less than or equal to 3.37. More than one-third of participants responded to the answer “very difficult” on the domain of understanding and applying SHL. It was consistent with Vongxay et al’s study (2019) that found that most of the adolescents had scores in the range of “inadequate” and adolescents who had higher functional literacy about condoms had a significantly higher sexual and reproductive HL score⁽¹⁸⁾. The scores of understanding and applying domains were also poor in difficult and very difficult, suggesting that individual knowledge and competency influences the

SHL level. The finding is consistent with the previous reports in the literature⁽²⁴⁻²⁷⁾. The present study showed that GPA was significantly associated with SHL. However, no studies mentioned adolescents’ school grades to be associated with SHL. There are several limitations in the present study. The sample size was small and the provinces purposively selected, therefore, the results of the present study may not be generalizable to other locations. Secondly, this was a cross-sectional study to find factors associated with SHL, however, the authors did not find the causal relationship between factors and SHL.

Conclusion

The findings revealed that most adolescents in the present study had inadequate scores on SHL in four areas, accessing, understanding, appraising, and applying information. The present study also found that the GPA of students was associated with SHL. Intervention on SHL implied that further study should be employed to study the effect of social media model to improve SHL among secondary school female students in southern provinces of Thailand.

What is already known on this topic?

The prevalence of adolescents has been increasing every year. The world health organization has set a standard that adolescent pregnancy should not exceed 10%; however, the prevalence rate is still between 12% to 14%⁽³⁾. Early pregnancy among adolescents can bring several negative impacts on themselves,

Table 4. Factors associated with sexual health literacy of secondary school female students

Variables	Level of sexual health literacy; n (%)				p-value
	Inadequate	Problematic	Sufficient	Excellent	
GPA					0.044*
Lower and equal to 3.37	32 (49.23)	3 (21.43)	29 (59.18)	-	
Over than 3.37	33 (50.77)	11 (78.57)	20 (40.82)	-	
Income					0.952
Lower and equal to 3,000 Baht	12 (69.23)	10 (71.43)	33 (67.35)	-	
Over than 3,000 Baht	20 (30.77)	4 (28.57)	16 (32.65)	-	
Current housing situation					0.340
Parents	56 (86.15)	14 (100)	43 (87.76)	-	
Relatives/others	9 (13.85)	0 (0.00)	6 (12.24)	-	
Parent’s marital status					0.878
Together	60 (92.31)	14 (100)	46 (93.88)	-	
Separate	5 (7.69)	0 (0.00)	3 (6.12)	-	
Total	65 (100)	14 (100)	49 (100)	-	

GPA=grade point average

such as their health, their financial income, family, and society. There are many interventions to prevent early pregnancy among adolescents, however, the prevalence has not yet been decreasing. Therefore, creative measures to prevent or reduce adolescent pregnancies should be created.

What this study adds?

This study added insight information in terms of the inadequate knowledge toward SHL among secondary school female students in a southern province of Thailand. This study found many lacking knowledge issues among students, such as where to get help when problems related to early pregnancy occurs, what to do when negative consequences happen, and how to communicate with their trusted friends or family members about sexual health concerns or related pregnancy problems. HL has been used in many adolescent pregnancy studies and interventions. However, SHL should be employed for the context of Thai students, which the assessment is suitable for the related sexual health and adolescent pregnancy. These are very important issues to be a concern to initiate prevention intervention among adolescents. Improving SHL among adolescents should be taken into account.

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Conflicts of interest

The authors declare no conflict of interest.

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