

ผลของโปรแกรมพัฒนาความรู้เท่าทันสื่อสุขภาพด้านเพศต่อการป้องกันการมีเพศสัมพันธ์ก่อนวัยอันควรในนักเรียนมัธยมศึกษาตอนต้น

Effects of Media Sexual Health Literacy Program on Premarital Sex Prevention among Junior High School Students

นิพนธ์ต้นฉบับ

Original Article

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บทคัดย่อ

วัตถุประสงค์: ศึกษาผลของโปรแกรมการพัฒนาความรู้เท่าทันสื่อสุขภาพด้านเพศต่อปัจจัยที่สัมพันธ์กับการป้องกันการมีเพศสัมพันธ์ก่อนวัยอันควรในนักเรียนมัธยมศึกษาตอนต้น **วิธีการศึกษา:** การศึกษากึ่งทดลองมีกลุ่มตัวอย่าง เป็นนักเรียนชายและหญิงชั้นมัธยมศึกษาปีที่ 2 โรงเรียนมัธยมศึกษาของรัฐบาล อ.นาดี จ.ปราจีนบุรี แบ่งเป็นกลุ่มทดลอง 31 คนและกลุ่มเปรียบเทียบ 34 คน กลุ่มทดลองได้เรียนในโปรแกรมพัฒนาความรู้เท่าทันสื่อสุขภาพด้านเพศ ซึ่งมีกิจกรรม 6 ชุด นาน 6 สัปดาห์ กลุ่มเปรียบเทียบได้เรียนเรื่องเพศศึกษาตามหลักสูตรขั้นพื้นฐาน ปัจจัยที่ศึกษา คือ ทักษะคิดเชิงบวกต่อการหลีกเลี่ยงการมีเพศสัมพันธ์ก่อนวัยอันควร การรับรู้ความสามารถของตนเองในการปฏิเสธการมีเพศสัมพันธ์ก่อนวัยอันควร ความสะดวกใจในการสื่อสารเรื่องเพศกับผู้ปกครอง และความตั้งใจในการหลีกเลี่ยงการมีเพศสัมพันธ์ก่อนวัยอันควร ซึ่งประเมินที่ก่อนเรียน หลังเรียน และช่วงติดตาม (สัปดาห์ที่ 10) เก็บรวบรวมข้อมูลโดยใช้แบบสอบถาม ทดสอบการเปลี่ยนแปลงคะแนนของปัจจัยดังกล่าวด้วยการวิเคราะห์ความแปรปรวนแบบวัดซ้ำ **ผลการศึกษา:** ที่หลังเรียนและติดตามผลกลุ่มทดลองมีคะแนนเฉลี่ยทักษะคิดเชิงบวกต่อการหลีกเลี่ยงการมีเพศสัมพันธ์ก่อนวัยอันควร การรับรู้ความสามารถของตนเองในการปฏิเสธการมีเพศสัมพันธ์ก่อนวัยอันควร และความตั้งใจในการหลีกเลี่ยงการมีเพศสัมพันธ์ก่อนวัยอันควร (P -value < 0.001 สำหรับทั้งสามปัจจัย) สูงกว่ากลุ่มเปรียบเทียบอย่างมีนัยสำคัญทางสถิติ ในขณะที่ความสะดวกใจในการสื่อสารเรื่องเพศกับผู้ปกครองไม่แตกต่าง (P -value = 0.091) สรุป: โปรแกรมพัฒนาความรู้เท่าทันสื่อสุขภาพสามารถเพิ่มคะแนนปัจจัยที่สัมพันธ์กับการป้องกันการมีพฤติกรรมเสี่ยงทางเพศในวัยรุ่นได้ คือ ทักษะคิดเชิงบวกต่อการหลีกเลี่ยง การรับรู้ความสามารถของตนเองในการปฏิเสธ และความตั้งใจในการหลีกเลี่ยงการมีเพศสัมพันธ์ก่อนวัยอันควร

คำสำคัญ: ความรู้เท่าทันสื่อ, การมีเพศสัมพันธ์ก่อนวัยอันควร, วัยรุ่นตอนต้น

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Abstract

Objective: To determine effects of the media sexual health literacy program on factors that could affect premarital sex among junior high school students. **Method:** In this quasi-experiment study, male and female students in the 8th grade at a high school in Nadee district, Prachineburi province. Thirty-one students in the test group received the media sexual health literacy program (6 weekly sessions) and 34 students in the control group received regular sex education classes. Factors including positive attitudes towards premarital sex, perceived self-efficacy in refusing premarital sex, comfort level to communicate and share about sexual health and behavior with parents, and intention to avoid premarital sex were measured at pre-test, post-test, and follow-up (week 10) using questionnaire. Changes in scores of each of the four factors over time between the two groups were tested using repeated measure ANOVA. **Results:** At post-test and follow-up, scores of positive attitudes towards premarital sex, perceived self-efficacy in refusing premarital sex, and intention to avoid premarital sex in the test group were significantly higher than the control group (P -value = 0.091, all three factors); while those of comfort level to communicate and share about sexual health and behavior with parents were not (P -value = 0.091). **Conclusion:** The media sexual health literacy program could improve scores of factors that could influence premarital sex including positive attitudes towards, perceived self-efficacy to refuse, and intention to avoid premarital sex.

Keywords: media literacy, premarital sex, early adolescents

Introduction

Problem of premarital sex in adolescents in Thailand has become more serious and complicate with the younger age at their first sexual intercourse which is now 13 years old by average.¹ This problem poses burden on various aspects of public health including premarital pregnancy, and sexually

transmitted diseases and AIDS in adolescents. In 2017 to 2019, birth rates among Thai adolescent aged 15 – 19 years old were 39.6, 35.29 and 28.68 births per 1,000 adolescents, respectively.² Even though adolescent birth rate has been decreasing, certain regions of Thailand still face the rate which

is worse than standard criterion issued by the Ministry of Public Health which is less than 38 births per 1,000 adolescents aged 15 – 19 years old.² Sexually transmitted diseases among adolescents aged 15 – 24 years old from 2014 to 2018 have been increasing from 103.37 to 127.08, 143.44, 161.18 and 169.12 per 100,000 populations. Among new cases of HIV infection and AIDS from 2014 to 2018, 45% of them were those 15 years old or older.³

In the province of Prachinburi, problem of adolescent premarital sex has been similar to that at the nationwide level. Provincial data showed that in 2018 to 2019, birth rates among adolescents aged 15 – 19 years old per 1,000 adolescents were higher than the national statistics. Specifically, Nadee district of Prachinburi was found to have high adolescent birth rates when compared with other districts. In a survey from 2017 to 2019 on birth rates among adolescents aged 15 – 19 years old, Nadee district was number one of the province in 2017, number one in 2018, and number 2 in 2019 with 45.34%, 37.65%, and 26.64% per 1,000 adolescents, respectively.⁴

The implementation of behavioral modification to alleviate adolescent premarital sex has mainly emphasized reducing risk factors and developing skill to avoid or refuse sex. Most skill training programs focus on female adolescents because they face a more intense impact. However, these programs are not fully effective since adolescent is the age of curiosity.⁵ Peers and society are influential on decision for various behaviors.⁶ In this digital era with an easy access to information and social media, access to sexual arousal or sexual stimulating media through mobile phone internet is associated with risky sexual behaviors.⁷ In addition, risky sexual behaviors among adolescents could be predicted by the access to sexual arousal or sexual stimulating media.⁸⁻¹⁰

To battle with the risky sexual behaviors, many concepts including health literacy have been applied. Health literacy is a cognitive and social skill fostering motivation and capacity to access, understand and use health service information to promote and maintain the individual's good health by means of self-care.¹¹ Health literacy is thus a vital determinant of health behavior. Health literacy influences the motivation or determination to develop and eventually perform health behaviors.¹² Health literacy is the basis for decision to choose appropriate behaviors which could lead to the actual practice of self-care management both in good and poor health.¹³ A systematic review on health literacy and risky behaviors in

adolescents suggested that health related media literacy influences their risky behaviors.¹⁴ Media literacy development positively changes adolescent's attitude and determination to narcotics use, cigarette smoking, and risky sexual behavior.^{15,16} For risky sexual behaviors, media sexual health literacy enhances appropriate decision on sexual health, and self-efficacy and determination to prevent pregnancy when engaging sex.

Previous studies suggest that sexual health literacy among Thai adolescents was lacking. In a nationwide survey, 95.5% of Thai female adolescents aged 15 – 21 years old lacked sexual health literacy which could lead to sexual behaviors risky for premarital pregnancy.¹⁷ Media literacy development is a crucial component of health literacy in adolescents¹⁸ as a preventive factor for their risky sex behavior.¹⁴ Unfortunately, studies on media sexual health literacy among Thai adolescents are limited. With the need to prevent premarital unprotected sex in Thai adolescents, the authors developed a program for developing media sexual health literacy based on the V-shaped health literacy model which is suitable for Thai context.¹⁹ This model consists of six components of access (stakeholder and network, and context realization), cognition (perception and acceptance, team building, and health status realization), communication skill (response, asking, and exchange of information, ideas, and conduct protocol among stakeholders), decision making skill (problem setting, development setting, design and planning), self-management (activities planning for learning, environment, communications and management), and project dissemination (public relation, publishing, and knowledge sharing).¹⁹

In this study, we applied these six components of the V-shaped health literacy model with previous research from other countries^{15,16} for media sexual health literacy for Thai adolescents. This program aimed to improve sexual health behaviors among male and female adolescents, promote more literacy about sex-oriented media, and enhance critical thinking and perspectives toward gender's sexual roles and responsibilities. We expected that these adolescents could be more motivated and determined to avoid or refuse premarital unprotected sexual intercourse.

In this study we aimed to implement the media sexual health literacy program for junior high school students, i.e., adolescents aged 13 – 15 years old. We wanted to build media sexual health literacy at the age as early and relevant as possible. However, this age group has a chance of sex

lower than their older counterparts, i.e., senior high school students and undergraduate university students.^{10,20} Therefore to reflect the effectiveness of the program, the outcome of self-reported sex was not appropriate. We therefore proposed to measure changes in psychosocial factors potentially influencing sexual behaviors of adolescents.

Various psychosocial factors influencing sexual behaviors of adolescents include attitudes towards premarital sex, perceived self-efficacy in refusing premarital sex, comfort level to communicate and share about sexual health and behavior with parents, and intention to avoid premarital sex.^{6,9,10,14} It has been known that the intention to avoid sex is significant predictor of sexual behavior of adolescents.²⁰ We therefore used these psychosocial factors as indirect determinants of premarital sex in adolescents rather than the self-reported sex as the short-term outcome of this V-shaped media sexual health literacy program. In addition, most junior high school students have no sex, direct assessment on sex was impractical and need a longer duration to see obvious incidents.

Specifically, we aimed to examine the change of scores of each of the four psychosocial factors at pre-intervention (baseline or pre-test), post-intervention (or post-test), and follow-up among junior high school students participating the V-shaped media sexual health literacy program (test group) compared with those receiving regular class (control group). These four factor variables were scores of (1) positive attitudes towards premarital sex, (2) perceived self-efficacy in refusing premarital sex, (3) comfort level to communicate and share about sexual health and behavior with parents, and (4) intention to avoid premarital sex. In addition, we determined changes of score of each of the four factors over time in adolescents participating the program (test group).

In accordance with the two study objectives, we hypothesize that at over time, scores of each of the four factors in adolescents in the test group were higher than those of adolescents in the control group. In the test group, scores of each of the four factors at post-intervention and follow-up were higher than that at pre-intervention.

Methods

In this quasi-experimental research, junior high school students participated the media sexual health literacy program (test group) and those not participating the program (control

group). The study psychosocial factors were measured at pre-intervention (baseline or pre-test), post-intervention (or post-test), and 4-week follow-up.

Study population was 8th grade students or second year junior high school students in the academic year of 2020 studying in public high schools in Nadee district, Prachinburi province. From this study population, a public high school was randomly selected as the test group and another as the control group. The two schools were comparable according to physical properties, capacities, and teaching. The sample size was estimated based on the formula of Glass.²¹ Based on an effect size of 0.652 from previous research²², a type I error of 1%, and a power of test of 95%, the power of analysis of Cohen²³ suggested a sample size of 28 participants in each group. To compensate for an attrition rate of 20%²⁴, 34 participants were needed for each group.

To be eligible to the study, students had to be 13 – 15 years old, had written informed consent from their parents, had to be willing to participate the study, and had normal cognitive function as informed by their class advisor teacher. Students unable to complete six sessions of the program activities were excluded.

Research instruments

Research instruments included data collection forms and questionnaires and the V-shaped media sexual health literacy program. Data collection forms and questionnaires consisted of five parts. The **first part** asked about demographic information of the students including age, gender, religion, academic achievement, marital status of parents, relationship of family members, parent's education level, parent's occupation, monthly family income, co-habitant person, and leisure activities.

The **second part** asked students about positive attitudes towards premarital sex using the questionnaire of Duangmahasorn and colleagues.²² The 10 questions asked about the adolescent's perception on premarital sex with five questions each for positive and negative statements. Response was a 5-point Likert-type rating scale ranging from 1 to 5. The questionnaire had an acceptable internal consistency reliability with a Cronbach's alpha coefficient of 0.80.²²

The **third part** asked students about their perceived self-efficacy in refusing premarital sex using the questionnaire of

Duangmahasorn and colleagues.²² The perceived capability to refuse premarital sex was conditioned based on various adolescent's contexts and circumstances. Four and three items were tailored for male and female perception, respectively. Response was a 5-point Likert-type rating scale ranging from 1 to 5. The questionnaire had a high internal consistency reliability with Cronbach's alpha coefficients of 0.98 for questions with female context and 0.96 for questions with male context.²²

The **fourth part** was the 6-items questionnaire of Prachanno and co-workers¹⁰ to ask about the student's comfort level to communicate and share about sexual health and behavior with parents. They were asked about how accepting their parents were about sex in adolescents, pregnancy prevention, and contraception. Response was a 4-point Likert-type rating scale ranging from 1 to 4. The questionnaire had an acceptable internal consistency reliability with a Cronbach's alpha coefficient of 0.83.¹⁰

The **last part** of the first instrument was three questions of Dangmahasorn and colleagues²² asking students about their intention to avoid premarital sex and planning for sexual abstinence. Response was a 5-point Likert-type rating scale ranging from 1 to 5. The questionnaire had a high internal consistency reliability with a Cronbach's alpha coefficient of 0.90.²²

The **second instrument** was the **V-shaped media sexual health literacy program**. As described previously, this model consists of six components of access, cognition, communication skill, decision making skill, self-management, and project dissemination.¹⁹ The program consisted of six weekly 40-minute long sessions. Women and men were trained for media sexual health literacy together so their actual experience could be shared through perspectives and attitudes of both genders.

Study procedure and data collection

Test group

At the first visit, participants in the test group completed the pre-intervention questionnaire of demographic information, positive attitudes towards premarital sex, perceived self-efficacy in refusing premarital sex, comfort level to communicate and share about sexual health and behavior with parents, and intention to avoid premarital sex and

planning for sexual abstinence. In a private room, participants were seated at least one meter apart from each other.

Once the questionnaire was completed, the participants were placed in the six weekly 40-minute long sessions. The session was held on every Tuesday from 11.20 to 12.00 AM which was the student's free time. The session was solely led by the researcher with the help on small group discussion of a research assistant. Details of the six sessions were as follows. The model consisted of six components of access (stakeholder and network, and context realization), cognition (perception and acceptance, team building, and health status realization), communication skill (response, asking, and exchange of information, ideas, and conduct protocol among stakeholders), decision making skill (problem setting, development setting, design and planning), self-management (activities planning for learning, environment, communications and management), and project dissemination (public relation, publishing, and knowledge sharing).¹⁹ Activities based on these components in each weekly session were as follows.

In the **first week**, based on the access concept, participants were expected to choose and access appropriate sexual health information. Activities allowed participants to revisit sexual health information in their daily life, and to choose and access the information. Group activities encouraged sharing of opinions about sources of sexual health information regarding reliability, correctness, ease of use, and accessibility. Individual participants were trained for information search and evaluation using simulated situations. The session took about 40 minutes in a private room of a school.

In the **second week**, activities for basic understanding (i.e., cognitive element of the program) aimed to developing knowledge, understanding, and positive attitude toward premarital sex abstinence. Knowledge provision was delivered using video about situations reflecting the impact of premarital sex both on men and women. Group activities encouraged sharing opinions between men and women. Participants were also provided with knowledge about premarital sexual risk factors including the prevention of sexually transmitted diseases and contraception methods. The session took about 40 minutes to complete in a private room of a school.

The **third week** delivered activities to further foster understanding regarding negotiating and refusing sex. Participants were also advised to the correct use of condom and the negotiation for the correct condom use. Simulated

situations accompanied with roleplaying and feedback demonstration were used for all skill training, especially for correct condom use and the negotiation for the correct use of condom. The session took about 40 minutes to complete in a private room of a school.

In the **fourth week**, activities were designed to train the communication skill to help participants to ask, respond and negotiate with their partners appropriately. They were also trained to persuade others to understand and accept appropriate sex health practice. They were also trained to be able to appropriately exchange sexual health information with friends with opposite sex and parents. The training was based on simulated situations, discussions on opinions about knowledge and skills gained after the activities. Participants were also encouraged to share opinions about negative opinions, perspectives and attitudes about premarital sex and risk sexual behavior. They were also trained to better communicate with their parents about sex. The session took about 40 minutes to complete in a private room of a school.

Activities in the **fifth week** allowed participants to make better decision and self-management. Decision making skill to refuse risky sexual behavior was fostered by critical reasoning analysis. They were trained to choose actions that were the least damaging to themselves and others. They were trained to define goals and plan their proper sexual behaviors which were practical for practice. Simulated situations with information provided were used for training of critical analysis, decision making, goal setting and behavior planning. All of these discussed processes were shared between men and women. The researcher used a direction card called "my chosen path" to guide participants to make their plan and self-management for sexual health more objective. The session took about 40 minutes to complete in a private room of a school.

In **sixth week**, activities encouraged dissemination of reliable sexual health information for propagating appropriate sexual health practice to others. Participants engaged in communication skill training to disseminate information to junior friends, friends of opposite sex, and parents that they felt comfortable to do so. Training was delivered via roleplaying package called "the pocket book of being literate to reduce and avoid risky sexual health behavior." The session took about 40 minutes to complete in a private room of a school. At the end of this session, participants were asked to complete the post-test questionnaire.

It was noteworthy that after four weeks of activities were carried out, the pandemic of covid-19 forced the changes of the remaining activities (weeks 5 and 6) to be in the online platform. In addition, actual meeting for activities that needed in-person interaction and examination was held at a sub-district health-promoting hospital that was convenient for all participants. All safety protocols during the pandemic were followed.

For post-intervention follow-up, the participants were asked to complete the questionnaire four weeks after the intervention completion (week 10).

Control group

Students participating in the control group were taught sexual health with regular education materials as indicated in the curriculum with regular lecture and no additional materials. Content and questions and answers were based on their regular textbooks. They were asked to complete the questionnaire at pre-test, post-test and follow-up in accordance with the schedule of those in the test group. After the follow-up questionnaire completion, participants in the control group were provided with activities comparable to those in the test group at their will.

Participant protection

This research protocol was approved by the Ethics Committee for Human Research of Graduate School of Burapha University (Approval number: G- HS 071/ 2563, approval date: November 4, 2020). Since participants were students aged lower than 18 years, the researcher asked permission and consent directly from participants and their parents. Participants and parents were asked for voluntary participation with written informed consent. Decision to participate would not affect how schools and involving parties at the school treated these students. Answers in the questionnaire would not require their names and any information that could identify them. All answers were kept securely and were presented as group, not individual, findings.

Statistical data analysis

Descriptive statistics including mean with standard deviation and frequency with percentage were used to present demographic, social and academic characteristics of participants. Differences of these characteristics between test and control groups were tested using chi-square test for

categorical variables and independent t test for continuous variables. Scores of each of the four study psychosocial factor variables at pre-test including positive attitudes towards premarital sex, perceived self-efficacy in refusing premarital sex, comfort level to communicate and share about sexual health and behavior with parents, and intention to avoid premarital sex of the two groups were compared using independent t test or Mann-Whitney U test as appropriate.

To compare the changes over time of score of each of the four factors of adolescents participating the program (test group) with those in the control group, repeated measure ANOVA was performed. Changes of score of each of the four factors of adolescents participating the program (test group) over time were also tested using repeated measure ANOVA. Statistical significance was set at a type I error of 1% (or *P*-value < 0.01). All statistical analyses were performed using the software program SPSS version 20.

Results

Of the 34 participants in each group, 31 and 34 participants in the test and control groups remained in the study, resulting in 95.59% and 100.00% completion rates, respectively. Participants in the test group consisted of more women than those in the control group (67.7% and 44.1%, respectively) (Table 1). Their mean age was comparable (13.9 and 14.0 years, respectively). Their academic achievement with GPA was slightly different with 67.7% and 46.1% of participants in the test and control groups, respectively, had an average GPA of 3.00 or higher.

More than half of the parents were married (71.0% and 67.6%, respectively). About half of them lived with both father and mother (58.1% and 58.8%, respectively). Majority of participants in test and control groups had poor-to-moderate relationship (58.1% and 64.7%, respectively). About two-thirds of parents had education of junior high school or lower (64.5% and 67.6%, respectively) and job with daily income (61.3% and 58.8%, respectively). About half of their families had family monthly income of 5,001 – 15,000 Baht per month (54.8% and 50.0%, respectively). About three-quarters of participants reported income sufficiency (77.4% and 76.5%, respectively). As expected, more than half of them had the Internet and social media as their leisure activities (51.6% and 61.8%, respectively). Differences regarding these

characteristics between the two group were not statistically significant (Table 1).

Table 1 Demographic characteristics of participants in the two group (N = 65).

Characteristics	Test group (n = 31)		Control group (n = 34)		P-value
	N	%	N	%	
Gender					
Male	10	32.3	19	55.9	0.056†
Female	21	67.7	15	44.1	
Age (years)					
≤ 14	30	96.8	30	88.2	0.197†
≥ 15	1	3.2	4	11.8	
Mean ± SD	13.90 ± 0.40		14.0 ± 0.58		0.312*
GPA					
< 3.00	10	32.3	18	52.9	0.093†
≥ 3.00	21	67.7	16	46.1	
Marital status of parents					
Married	99	71.0	23	67.6	0.772†
Separated	9	29.0	11	32.4	
Not living with parents	0	0	0	0	
Family relationship					
Good	13	41.9	13	38.2	0.761†
Poor-moderate	18	58.1	22	64.7	
Education level of parents					
Junior high school or lower	20	64.5	23	67.6	0.790†
Senior high school or higher	11	35.5	11	32.4	
Occupation of parents					
Job with daily income	19	61.3	20	58.8	0.839†
Job with regular monthly income	12	38.7	14	41.2	
Family monthly income (Baht/month)					
< 5,000	7	22.6	8	23.5	0.915†
5,001 – 15,000	17	54.8	17	50.0	
≥ 15,001	7	22.6	9	26.5	
Participant's income sufficiency					
Sufficient	24	77.4	26	76.5	0.928†
Insufficient	7	22.6	8	23.5	
Living arrangement					
With father and mother	18	58.1	20	58.8	0.971†
With father or mother	5	16.1	6	17.7	
Others (grandparents, aunt, uncle)	8	25.8	8	23.5	
Leisure activities					
Internet/social media	16	51.6	21	61.8	0.401†
Book reading/rest/house chores	11	35.5	7	20.6	
Sports/exercise	4	12.9	6	17.6	

* independent t test.

† Chi-square test.

Changes of scores of study psychosocial factor variables

Before the intervention, pre-test scores of positive attitudes towards premarital sex, perceived self-efficacy in refusing premarital sex, comfort level to communicate and share about sexual health and behavior with parents, and intention to avoid premarital sex of the two groups were comparable with no statistical difference (Table 2).

Table 2 Scores of study variables at pre-test, post-test and follow-up of participants in the two group (N = 65).

Study variables	Test group (n = 31)		Control group (n = 34)		P-value*
	mean	SD	mean	SD	
Positive attitudes towards premarital sex					
Pre-test	39.19	5.22	38.12	5.20	0.41
Post-test	43.06	4.43	36.88	4.85	
Follow-up	42.55	4.84	38.20	5.21	
F = 13.24X, P-value = < 0.001†					
Perceived self-efficacy in refusing premarital sex					
Pre-test	3.34	1.13	3.02	1.20	0.64
Post-test	4.41	0.55	3.50	0.92	
Follow-up	4.72	0.31	3.60	1.00	
F = 36.95X, P-value = < 0.001†					
Comfort level to communicate and share about sexual health and behavior with parents					
Pre-test	15.54	4.57	13.85	5.07	0.16
Post-test	16.84	4.73	13.94	4.21	
Follow-up	15.58	4.69	15.59	4.66	
F = 3.37X, P-value = 0.041†					
Intention to avoid premarital sex					
Pre-test	12.03	3.38	11.82	2.54	0.78
Post-test	14.19	0.87	10.76	3.58	
Follow-up	13.93	1.09	11.29	3.29	
F = 9.43X, P-value < 0.01†					

* independent t test.

† Repeated measure ANOVA for within-group changes in the test group.

For changes over time of each of the four study factor variables between the two groups, we found scores of positive attitudes towards premarital sex ($F = 13.744$, $p < .001$), perceived self-efficacy in refusing premarital sex ($F = 16.463$, $p < .001$), and intention to avoid premarital sex ($F = 19.441$, $p < .001$) to be significantly higher than those in the control group. However, scores of comfort level to communicate and share about sexual health and behavior with parents of the two groups were comparable ($F = 2.945$, P -value = 0.091) (Table 3).

In terms of within-group changes in the test group, scores of positive attitudes towards premarital sex ($F = 13.24$, P -value < 0.001), perceived self-efficacy in refusing premarital sex ($F = 36.95$, P -value < 0.001), and intention to avoid premarital sex ($F = 9.43$, P -value < 0.01) at post-test and follow-up increased significantly from pre-test. However, scores of comfort level to communicate and share about sexual health and behavior with parents at post-test and follow-up increased with no statistical significance tly from pre-test of the two groups were comparable ($F = 3.37$, P -value = 0.041) (Table 2).

Table 3 Scores of study variables at pre-test, post-test and follow-up of participants in the two group (N = 65).

Variables	Source of variance	SS	df	MS	F
Positive attitudes towards premarital sex	Between group (Group)	727.385	1	727.385	13.744**
	Within group (Time)	105.148	2	52.574	4.940*
	Interaction (Group*Time)	216.902	2	108.451	10.191**
	Error	1340.872	126	10.042	
Perceived self-efficacy in refusing premarital sex	Between group (Group)	25.502	1	25.502	16.463***
	Within group (Time)	28.127	1.722	16.330	29.091***
	Interaction (Group*Time)	8.779	1.722	5.097	9.080***
	Error	60.913	108.512	0.561	
Comfort level to communicate and share about sexual health and behavior with parents	Between group (Group)	163.562	1	163.562	2.945†
	Within group (Time)	17.296	2	8.648	1.532
	Interaction (Group*Time)	32.558	2	16.279	2.884
	Error	711.196	126	5.644	
Intention to avoid premarital sex	Between group (Group)	213.097	1	213.097	19.441**
	Within group (Time)	17.169	1.776	9.666	1.534
	Interaction (Group*Time)	91.384	1.776	51.447	8.164**
	Error	705.221	111.905	6.302	

Note: SS = Sum squares; df = degree of freedom; MS = Mean square.

† = Greenhouse-Geisser correction was used to reduce type I error because the absence of compound symmetry of variance.

* P-value < 0.01, ** P-value < 0.001, † P-value = 0.091.

Discussions and Conclusion

Students participating the program had scores of each of the four study variables including positive attitudes towards premarital sex, perceived self-efficacy in refusing premarital sex, comfort level to communicate and share about sexual health and behavior with parents, and intention to avoid premarital sex at post-test and follow-up significantly higher than those at pre-test as hypothesized. At each time point, each of scores of the four study variables of participants in the test group was significantly higher than that in the control group as hypothesized.

The above findings suggest that the V-shaped media sexual health literacy program could improve scores of positive attitudes towards premarital sex, perceived self-efficacy in refusing premarital sex, comfort level to communicate and share about sexual health and behavior with parents, and intention to avoid premarital sex among junior high school students. Such improvement could be attributable to activities based on various psychosocial components of the program as follows.

Based on the access and understanding (or cognition) components of the program, activities aimed to providing knowledge about sexual health information, literacy on sexual health media, and appropriate knowledge about sexual health. This provision aimed to equip participants to be able to avoid media that could lead to improper sex behavior. Previous studies indicate comparable trends. In a study in Colombia to examine influence of sexual literacy on adolescent pregnancy, it was found that 75% of female adolescents aged 13 – 19

years old with no sexual literacy were more likely to experience school-aged pregnancy.²⁵ pregnancy. Previous studies confirmed the influence of media on risky sexual behavior. For example, media such as pornography media is a critical risk factor for adolescent's risky sexual behavior.²⁶⁻²⁸

Discrepancy on opinions about effects of pornography media between adults and adolescents exists. In England, a study showed that adults viewed pornography media as dangerous while adolescents viewed them as one of various factors that could lead to risky sexual behavior and allow adolescents to express their sexual identity in a way that is close to reality.²⁷ In Australia, adolescents and lesbian, gay, bisexual, transgender and queer/questioning (LGBTQ) persons viewed that pornography media could offer alternative learning platform for sex education not offered by the formal education.²⁶ In our study, adolescent's attitude toward certain questionnaire items indicated that some adolescents agreed with sex in teenagers. For example, a considerable number of participants agreed with the statements "It's common for teenagers to have sex with their loved ones," and "Having sex is what everybody does" (data not shown in Results section). This attitude is not alien but consistent with general societal ones.

Attitude is a personal motivation consisting of understanding (cognition) and feeling (affects) on certain things or matters.²⁹ Since attitude could be changed by societal values and environments, there is need to provide knowledge, train critical thinking skills continuously, develop capacity and enhance positive attitude to prevent agreement with improper sexual values in society and among peers.

In our study, over time the program positively affected perceived self-efficacy in refusing premarital sex and intention to avoid premarital sex. This could be attributable to activities designed to foster implementing knowledge and skills to practical action. Home assignments were continued weekly. Participants were also encouraged to share their opinions with participants with same and opposite sex. With simulated situation and roleplaying, mastery experience was developed, a component of self-efficacy, which could help students enhance their self-efficacy.

According to self-efficacy, Bandura asserted that developing mastery experience is the most effective way to enhance self-efficacy.³⁰ Despite no sexual experience in this group of participating students in our study, simulated situations were relatively realistic to teenager life and could

help participants analyze, criticize, differentiate the advantageous from disadvantageous points, choose proper options, and set safer goals for their own life and family. We could expect that activities could improve the intention to avoid premarital sex over time with more objective effort to apply knowledge until their skills were developed.

In addition to the first two components of the program (i.e., access and cognition), the third component of the program was communication skills. Various activities were designed in for various weekly sessions. Participants were trained to persuade others to understand and accept correct sexual health practice from simulated situations, roleplaying and sharing about sex among adolescents. Activities also included classroom-styled verbal reporting and individual training of communication about sex with their parents as homework. Based on our observation, students could communicate with friends about sex, especially those with same sex. Female students stated they didn't talk with men because they were embarrassed and afraid that they might be perceived as a bad person by male friends. Male students also felt embarrassed and not close enough to talk with female friends. In their activity logs, male students chose not to communicate about sex with their parents because they did not know how to start; while female students reported slightly more communication with their parents, specifically about their physiological changes and dating friends of opposite sex. Based on findings from individual items of the questionnaire, students were uncomfortable to highly uncomfortable to communicate with their parents about premarital sexual experience, and use of condom and contraceptive pills. With rapid changes in their body and emotion, their expressive behaviors draw adolescents together and they understand shared problems than their parents.⁷ In general, once confronting with problems requiring rapid decision, adolescents are more likely to seek consultation from their friends because they feel more comfortable with their friends than their parents.

For the last three components of the program, i.e., decision skill, behavioral modification and dissemination, skills of critical analysis for choosing proper sexual behavior practice based on advantages and disadvantages of all alternatives were emphasized. Participants were trained to be more confident in analyzing such matters. With more understanding and positive attitude toward proper sexual behaviors developed since the early sessions, the intention to avoid premarital sex could be more prominent. They were also

individually trained for self-management for life safe from premarital sex using the “my chosen path” direction card. In the last component of dissemination, participants’ capacity in conveying sexual health information to others. This could be done by roleplaying on information dissemination of the previous five components using the pocket book of being literate to reduce and avoid risky sexual health behavior.

Once all activities were conducted, participants were able to make decision and choose methods to avoid sex. They were able to choose options that were proper rather than satisfying. Most of them chose to talk with many friends, both male and female, that were close with them to compare information given. They also chose to talk with parents or adults that they were close such as older siblings, aunts and uncles. They planned to be safe from premarital sex for the next 2 -3 years, i.e., until they graduated from junior high school, by avoiding getting themselves into situation risky for sex. Apparently participants had capacity and skill to convey sexual health information to others.

Health literacy is the individual’s capacity to access, understand and use information in promoting and maintaining health.¹¹ Literacy could be developed by the development of knowledge and skill.¹³ The V-shaped media sexual health literacy program increased scores of positive attitudes towards premarital sex, perceived self-efficacy in refusing premarital sex, and intention to avoid premarital sex. Our findings are consistent with previous studies. Health media literacy affects media literacy skill, attitude and intention to adopt health behavior in adolescents.¹⁴ Study of Scull et al found that with health literacy students had more self-efficacy in contraception and intention to contraception significantly (P -value < 0.001).¹⁶ The study of Pinkleton et al revealed that media influence adolescent’s decision making about risky sexual behavior and inappropriate sexual expression.³¹ Media literacy training improved capacity and skill in decision making about appropriate sexual behavior.³² Community training course on media literacy affected how adolescents interpret sex-related materials in the media.³¹

For practical implication, the V-shaped media sexual health literacy program could be implemented in regular curriculum because it poses a relatively low burden on students and teachers. For teachers, they can follow up and monitor changes in the four study variables. For future research, we recommend a longer follow up period such as 3 to 6 months to prove long-term sustainable psychosocial

effects of the program. To measure the actual sexual behavior, a more well designed study with subjects older than those we recruited in our study should be conducted. This program could also be applied to improve other risky behaviors such as alcohol consumption, smoking, sexually transmitted diseases, and pregnancy in teenagers. In addition, studies in adolescents in urban or inner city area and adolescents with alternative genders should be conducted.

In conclusion, the V-shaped media sexual health literacy program improved efficiency in delaying risky sexual behavior when compared with regular knowledge provision. The program improved positive attitudes towards premarital sex, perceived self-efficacy in refusing premarital sex, and intention to avoid premarital sex, but not comfort level to communicate and share about sexual health and behavior with parents.

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