Effects of School-Based Participation Program to Prevent Multiple Risk Behaviors in Thai Male Adolescents

Pimrat Thammaraksa, Arpaporn Powwattana, Sunee Lagampan, Paranee Vatanasomboon, Sarah Anne Stoddard*

Abstract: The onset of multiple risk behaviors, such as smoking, alcohol consumption and unprotected sexual intercourse, cluster in adolescence. Previously, many studies on adolescent risk factors have highlighted only a single risk behavior without considering the importance of the mutual relationships among them. Adolescents who engage in any one risk behavior are likely to engage in others. This quasi-experimental study aimed to examine the effects of a School-based Participation Program to prevent multiple risk behaviors in male students. Two secondary schools in suburban areas of Bangkok were randomly selected for this study, one designated the experimental and the other the comparison school. The sample included 64 male students (32 from each school). Additionally, 17 parents participated in the study. Data were collected by a self-administered questionnaire that included the following instruments: Demographic data, Knowledge of Risk Behaviors Prevention, Attitude towards Multiple Risk Behaviors, Self-efficacy to Avoid Multiple Risk Behaviors, Emotional Intelligence, and Time Management, Parental Monitoring and Multiple Risk Behaviors. The independent t-test and repeated one-way analysis of variance were used to analyze the data.

Results revealed that most of the experimental and comparison groups smoked cigarettes. The experimental group had significantly higher mean scores of knowledge, attitude, self-efficacy, emotional intelligence, time management, and parental monitoring at baseline, immediately following, and nine weeks after intervention, all better than those in the comparison group across all time points of measurements. Compared to the comparison group, the experimental group did better regarding not having multiple risk behaviors across time. Nurses could apply this program to train adolescents to prevent multiple risk behaviors and the involvement of parents could strengthen the sustainability of risk behavior prevention in adolescents. However, the program requires further research with different populations.

Pacific Rim Int J Nurs Res 2019; 23(3) 228-242

Keywords: Adolescents, Male Students, Multiple Risk Behaviors, Participation, School-Based program

Received 16 September 2018; Accepted 4 February 2019

Pimrat Thammaraksa, *RN, DrPH Candidate, Department of Public Health Nursing, Faculty of Public Health, Mahidol University, Thailand.* ***E-mail:*** *pimrat.t@bcn.ac.th*

Correspondences to: Arpaporn Powwattana*, RN, PhD, Associate Professor, Faculty of Public Health, Mahidol University, Thailand.* ***E-mail:*** *Arpaporn.pow@mahidol.ac.th*

Sunee Lagampan*, RN, EdD, Associate Professor, Faculty of Public Health, Mahidol University, Thailand.* ***E-mail:*** *Sunee.lag@mahidol.ac.th*

Paranee Vatanasomboon*, PhD, Assistant Professor, Faculty of Public Health, Mahidol University, Thailand.* ***E-mail:*** *Paranee.vat@mahidol.ac.th*

Sarah Anne Stoddard*, RN, PhD, Assistant Professor, School of Nursing, University of Michigan, USA.* ***E-mail:*** *sastodda@med.umich.edu*

Introduction

According to recent research,[1-2] the prevalence of multiple risk behaviors (MRB), or the co-occurrence of practices such as smoking, alcohol use, and risky sexual behaviors, has increased among Thai male

adolescents. About 7.8% of adolescent›s smoke[3]and 13.6% drink alcohol on a regular basis.[4] Also, the prevalence of sexual risk behavior among adolescents has increased. Births among Thai adolescents 15 to 19 years old is higher than the average for Asia and the Pacific, although the number of such births decreased from 53.4 in 2011to 44.8 per 1000 population in 2015.[5] Adolescents engaging in these risky behaviors may have subsequent adverse outcomes such as accidents, sexually transmitted infections (STIs), unwanted pregnancy, and school dropout.[6]Although these behaviors have been taken into account for risk behavior prevention among adolescents, previous studies mostly focused on single risk behavior and at the individual level.[7]A systematic review of effective interventions for reducing multiple health risk behaviors in adolescents indicated that school-based and integrated prevention programs are feasible and effective.[8] In addition, parental and community involvement were positively associated with effective changes in adolescents' health behaviors.[9] However, most of the studies were conducted in the United States. None focused on MRB of adolescents in Thailand. Therefore, we believed that development of an intervention program was needed in the Thai context, aimed at preventing multiple risk behaviors during adolescence by integrating actions to reduce risk behaviors and involving the participation of all parties (male students, parents, and teachers).

Literature Review

Bronfenbrenner's ecological model was used to frame the contextual factors associated with MRB in adolescents.[10] This model managed by different systems, that is microsystems, mesosystems, exosystems and exo or macrosystems, where different levels are affected differently within each system level.[11] The first and the most basic level is related to the roles, activity patterns and relationships of the individual, named as the microsystem or interactional level. This microsystem level involves activity patterns, roles and interpersonal relations faced in that environment such as knowledge, with primary psychological variables including attitude, self-efficacy, and emotional intelligence. The mesosystem involves interactions among settings with relevant variables including parental monitoring and time management. Parents and schools are key influencing factors and the core sources for adolescents' social support.

From an ecological perspective, adolescent development and engagement in risk behaviors are influenced by factors through multiple levels including the individual, family, school, and environmental level.[10] From a resilience perspective, these factors are related to a higher likelihood of engaging and increasing risky behaviors, whereas other factors such as individual assets and contextual resources which are protective, operate to enhance healthy development and may reduce the adverse effects addressed by risk factors. A study by Wongtongkam et al. found three cultural factors influencing Thai male adolescents' behaviors: 1) individual factors including knowledge of risk behaviors prevention, attitude toward multiple risk behaviors, self-efficacy to avoid various risk behaviors, emotional intelligence, and time management; 2) family factors including parental monitoring and family relationship; and 3) environmental factors including friend motivation and school atmosphere.[12] These protective factors are necessary to prevent multiple lifestyle behaviors. A preventive intervention program should address the risks posed at the individual level, as well as contextual risk factors. Cooperation from several sectors is required to attempt to jointly prevent multiple risk behaviors of adolescents, and this includes individual, family, and community levels. This cooperation is consistent with a participatory approach, that is a process by which people are enabled to become actively and genuinely involved in defining the issues of concern to them, in decision-making about factors that affect their lives, in formulating and implementing

the activities, in planning, developing and delivering services and in taking action to achieve change.[13] The advantages of this approach include taking into account the needs and lifestyle of key participants, the context of the problem, and culturally appropriate factors related to the problems of risk-taking. This approach could fill the gap in earlier studies by promoting the involvement of all parties.

Common to many behavioral theories is the idea that behavior is influenced by an individual's learning ability and the values and beliefs that transfer from a source of information to target groups. The hierarchical nature of the interaction between male adolescents, parents, and teachers allow reliable communication about sexual issues in ways they have. Our program was based on the Self-Efficacy Theory of Bandura[14] and specific social and cultural relevance.

Additionally, previous studies examining the effectiveness of prevention interventions for adolescent risk behaviors have some limitations. First, most studies only focus on intervening in one risk behavior.[7] Adolescents who already engage in one risky behavior are at risk for engaging in multiple risk behaviors. For example, adolescents who smoke cigarettes and drink alcohol are more likely to participate in risky sexual behavior.[15] Furthermore, previous studies suggest that these risk behaviors tend to co-occur during adolescence.[16] Accordingly, increasing the risk of adverse outcomes is associated with each additional risk factor, resulting in the MRB pattern. Second, most intervention studies have not included adolescents' perspectives. Therefore, development of an intervention program must aim at preventing multiple risk behaviors during adolescence by integrating actions to reduce behaviors and involve the participation of key parties.

Study Aim

This quasi-experimental study aimed to examine the effects of the SBPP to prevent multiple risk behaviors in male students in Thai secondary schools. The following hypotheses were set: The mean scores of knowledge, attitude, self-efficacy, emotional intelligence, parental monitoring in the experimental group would be significantly higher whereas the number of multiple risk behaviors would be significantly lower than those in the comparison group immediately after and one month after attending the program.

Methods

Design

This study used a two-group, pre- and post-test, quasi-experimental design.

Sample and Setting

Two out of ten secondary schools located on suburban areas of Bangkok were randomly selected. They had high tentative risks behavior as per school reports. were randomly selected. After that, simple random sampling was executed to designate one as the intervention school and the other as the comparison school. The participants in each school were eligible for the study based on the following criteria: 1) aged 13-15 years; 2) had engaged in cigarette smoking because it is a gateway for misconduct behaviors, and popular in Thai adolescents, and 3) were willing to participate in the study by providing their consent and their parents/guardians› approval. Of the 32 parents, 17 agreed to participate in the program. Fifteen parents declined to take part in the study; the main reason given was not enough time to join due to their regular jobs.

Since a small effect size was anticipated, the sample size was raised using a power of 80% and 0.20 SD differences in outcomes between the intervention and comparison groups with 95% confidence interval.[17] Twenty-five persons were in each group. The sample size was increased by 10% (3 persons) to cover attrition. A total of 63 male students (32 in the intervention and 31 in the

comparison group) participated. Each participant in the intervention school identified the parent that they felt closest to and that parent was invited to participate in the program.

Ethical Considerations

The Institutional Review Board of Faculty of Public Health, Mahidol University approved this research (COA. No. MUPH 2016-079). Consents and agreements were obtained from parents and their children, with permission from school authorities. The potential participants were informed about study objectives, program processes, confidentiality, risks, benefits, and their rights. They were able to ask questions and withdraw from the study at any time.

Intervention

The primary investigator (PI) developed the SBPP from 11 focus groups, seven in-depth interviews, and a literature review. The SBPP was reviewed and validated by three experts: a child and adolescent nursing instructor, a pediatric nursing instructor, and a physician from Queen Sirikit National Institute of Child Health. Activities took place July-October 2017 and the SBPP was composed of eight sessions, one-hour long, over nine weeks. The sessions focused on knowledge related to life skills to prevent multiple risk behaviors, condom use, contraceptive pills, and the consequence of various risk behaviors, attitudes towards MRB, time and stress management, and self-discipline skills for adolescents' risk behavior modification based on self-efficacy theory. Two sessions for both the participants and their parents/guardians focused on child rearing, parental monitoring, and family communication. Such activities can help parents sustainably develop their parenting skills which might in turn resulting in children's multiple risk behavior prevention. The SBPP and activities are described in Table 1. The comparison group received the one-hour education program and booklet after finishing the follow-up period.

Table 1 Details of program to prevent multiple risk behaviors

Week/Sessions	Learning objectives	Procedure

Week 1: Jigsaw of Knowledge about Risk Behavior Prevention	Provide information on risk behaviors prevention	**Male students:**
		• Learn about risk behaviors prevention by jigsaw process (50 mins.)
		  • Increase understanding on life skill, contraception, and consequence of risk behaviors
		  • Practice how to use a condom
		• Game Quiz (10 min)

Week 1: Attitude Change	Changing attitudes towards multiple risk behaviors	**Male students:** • Identify feelings towards multiple risk behaviors (smoking, alcohol drinking, and sexual risk behavior) (10 min) • Increase awareness and attitudes regarding risk behaviors by explaining about the risk behaviors situation of Thai male adolescents (15 min) • Change feelings using a case study clips of those affected by various risk behaviors (10 min) • Discuss and analyze the impact on those affected by various risk behaviors in case study (25 min)

Table 1 Details of program to prevent multiple risk behaviors (cont.)

Week/Sessions	Learning objectives	Procedure
Week 2: Family Matter "Just Say No" Is Only One Way to Go	Increase self-confidence to avoid multiple risk behaviors	**Male students:** • Identify ways to negotiation, how to avoid the risk behaviors when their friend's persuasion (10 min) • Skill practice for negotiation, practiced repeatedly in hypothetical situation and actual classroom along with recording about self-confidence for reflection (40 min) • Discuss about some of the tactics for dealing with peer pressure (10 min)
Week 2: Relieving Stress Techniques	Provide the information about cause of stress Choose strategies for dealing with stressful situations	**Male students:** • Lecture: Increase understanding of stress. Five 5 topics: What is the stress?; Level of stress; Causes of stress in adolescents; Dealing with stress; and Relieving stress techniques (20 min) • Identify ways to release stress • Skill practice to choose the way for dealing with the stress situation by use the scenarios
Week 3: Building the Bridge	Describe the cause of conflict between male adolescents and parents/guardians Demonstrate how to communicate to try to reduce conflict	**Male students:** • Increase understanding the difference of ages and experience between adults and adolescents (10 min) • Group work to identify the cause of conflict between adults and adolescents (30 min) • Discuss the ways how to communicate and reduce the conflict between adults and adolescents (20 min)
Week 3: Life Schedule	To improve time management skills to own benefit	**Male students:** • Increase understanding of the importance of time management (5 min) • Group discussion to exchange experiences about their leisure time (10 min) • Provide the information about Effective Time Management Principles (15 min) • Skill training about scheduling life and time management to own benefit in one week (30 min)
Week 3: Family Matter "The Rules of the House"	Set family rules and regulations about multiple risk behaviors such as smoking, alcohol drinking, and sexual risk behavior	**Male students:** • Define their roles to prevent multiple risk behaviors (15 min) • Brainstorm to identify the family regulation and discuss this between students and parents/guardians groups (25 min) **Parents/guardians:** • Define parent roles to prevent multiple risk behaviors (15 min) • Brainstorm to identify family regulation (25 min)

Table 1 Details of program to prevent multiple risk behaviors (cont.)

Week/Sessions	Learning objectives	Procedure
		Both male students and parents/guardians: • Discuss family regulations between students and parents/guardians group (20 min)
Week 3: Family Rules About Alcohol and Tobacco	Set clear family rules and regulations for male student about smoking/ alcohol drinking behavior	**Male students:** • Discuss about each rule, and listen to parents' questions and concerns (10 min) • Brainstorm to decide on rewards for following the rules and the consequences for breaking these (20 min) **Parents/guardians:** • Discuss about each rules, and listen to student's questions and concerns (10 min) • Brainstorm to decide on rewards for following the rules and consequences for breaking them (20 min) **Both male students and parents/guardians:** • Parents/guardians discuss with students about rewards for following rules and consequences for breaking them (30 min)

Instruments

The instruments used in this study are available in the public domain. The original measures are in English, and were back-translated by two researchers who were competent in both Thai and English. No major semantic differences are found between the sources and the back translations. After that all of the instruments were piloted for face validity in a group of six male adolescents to check understandability and cultural appropriateness in Thai. The eight parts of self-reported questionnaire was used for data collection in both experimental and comparison groups. The content validity index and reliability in both the pilot and actual study of each instrument are shown in Table 2.

Table 2 Validity and reliability of the measures in this study

Measures	Content Validity Index (CVI)	Reliability	
		Pilot study	Actual study
1. Knowledge of risk behaviors prevention	.80	.69[a]	.72[a]
2. Attitude towards multiple risk behaviors	.80	.61[b]	.68[b]
3. Self-efficacy to avoid multiple risk behaviors	.80	.79[b]	.82[b]
4. Emotional intelligence	.80	.68[b]	.70[b]
5. Time management	.80	.68[b]	.72[b]
6. Parental monitoring	.80	.70[b]	.72[b]
7. Multiple risk behaviors	.80	.70[b]	.74[b]

[a] KR-20

[b]= Cronbach's Alpha

The Demographic questionnaire includes age, study level, grade, living arrangement, money allowance, parental marital status, and family relationship.

Knowledge of Risk Behaviors Prevention. This is a standardized questionnaire developed by the Health Education Division, Ministry of Public Health.[18] Questions refer to risk behavior prevention including life skills to prevent multiple risk behaviors, contraception, and consequence of various risk behaviors. An item example is "Which skill is the most important for MRB prevention?" Knowledge is assessed using 15 true/false items (1 = correct, 0 = false). A higher score indicates a higher level of knowledge

Attitude towards Multiple Risk Behaviors. This includes questions from a standardized survey of the Health Sponsorship Council,[19] 15 items regarding a student's feelings towards various risk behaviors. An item example is "Smoking, drinking alcohol, and having sex reflect my adulthood." Participants are asked to rate on a 4-point rating scale from 1 (strongly disagree) to 4 (strongly agree). The range of scores is 15-60, with higher scores indicating a higher negative attitude towards multiple risk behaviors

Self-efficacy to Avoid Multiple Risk Behaviors. This measure has 15 items from a standardized self-efficacy instrument developed by Schwarzer.[20] It consists of 15 items regarding male adolescents' confidence to say no to a friend's persuasion. They have to indicate their ability on a 5-point Likert scale from 1 (no confidence) to 4 (highly confident). An item example is "You would be able to say NO to drinking alcohol when your friends motivate you to drinking a party". Total scores range from 15-60, with higher scores indicating better perceived self-efficacy to avoid multiple risk behaviors.

Emotional Intelligence. This measure includes questions from the standard Emotional Quotient (EQ) instrument developed by the Department of Mental Health, Ministry of Public Health.[21] It consists of 12 items regarding emotional intelligence and rating is done on a 4-point scale from 1 (Not true) to 4 (Very true). An item example is "I tried to examine root causes of my emotional problems rather than making things up". The range of scores is 12-48, with higher scores indicating better emotional control.

Time Management. This has standardized assessment questions and was developed by Bond & Feather.[22] It has 15 items regarding male students› ability to organize, plan, and manage their free time using a 4-point scale from 1 (Yes, Always) to 4 (No, Never). An item example is "Do you ever feel that the things you have to do during the day just don›t seem to matter? The range of scores is 15-60, with higher scores indicating better time management.

Parental Monitoring. This measure was developed by Small & Kerns[23], and Hayes, Hudson & Matthews[24] consisting of 15 items with 4 using a factorial scale and 11 rated items on a 3-point scale from 1 (Practically never) to 3 (Almost all the time). An item example is "How often do your parent(s) know where you are after school?" The scores range from 15-45, with higher scores indicate better parental monitoring.

Multiple Risk Behaviors. This measure was derived from the CDC Youth Risk Behavior Survey[11] consisting of 23 items with a factorial scale. The items assess male students› risk behaviors (for example, smoking, alcohol drinking, and sexual behavior). An item example is "Have you ever had sexual intercourse?" Lower scores indicated fewer risk behaviors.

Data Collection

The experimental and comparison groups answered questionnaires including knowledge, attitude, self-efficacy, emotional intelligence, time management, and parental monitoring at the beginning, immediately after the program (week 3), and during the follow-up period (week 9). Furthermore, at the beginning and during the follow-up period (week 9), the participants answered questions about multiple risk behaviors.

Data Analysis

All analyses were conducted using the statistical software package (SPSS program version 18) and presented by percentage, mean, standard deviation,

independent t-test, and repeated measures analyses of variance with post-hoc Bonferroni. Significance tests used a probability of $\alpha = .05$.

Results

Participants in both student groups were early adolescents from 13-15 years old.

The average age of the experimental and comparison group were 13.9 and 14.7 years, respectively. Although the comparison group was slightly older than those in the experimental group, the age did not significantly differ. The majority of both groups were studying in grade 8 (62.5% and 61.3% respectively). Most participants in both groups lived with both father and mother (87.5% and 83.8% respectively). Approximately (50.0%) of the experimental group had a daily expense of more than 100 baht ($US3), whereas 71.0% of the comparison group had 51 to 100 baht (around $US1.5-$3) per day. Sociodemographic characteristics between the experimental and comparison groups did not differ (Table 3).

Table 3 Comparison of Demographics and Male Student Characteristics in Intervention and Comparison Groups (n = 63)

Characteristics	Intervention group (n = 32)	Comparison group (n = 31)	*p*-value
	n (%)	n (%)	
Age (years)			
13	10 (31.3)	0 (0.0)	
14	13 (40.6)	10 (32.3)	
15	9 (28.1)	21 (67.7)	
Mean ± S.D.	13.97 ± 0.78	14.68 ± 0.47	.071[a]
Educational level			
8	20 (62.5)	19 (61.3)	
9	12 (37.5)	12 (38.7)	.921[b]
People who reside with student			
Both father and mother	28 (87.5)	26 (83.8)	
Only father or only mother	3 (9.4)	2 (6.5)	
Cousins/other relatives	1 (3.1)	3 (9.7)	.533[b]
Parental status			
Living together	27 (84.4)	24 (77.4)	
Separated or divorced	4 (12.5)	2 (6.5)	
One or both have died	1 (3.1)	5 (16.1)	.174[b]
Daily expenses (Baht/USD)			
0 - 50 (< $1.5)	3 (9.4)	2 (6.5)	
51 - 100 ($1.5-$3.0)	13 (40.6)	22 (71.0)	
> 100 (>$3.0)	16 (50.0)	7 (22.5)	
Min- Max	50 - 200	50 - 150	
Mean ± S.D.	113.44 ± 32.98	100.65 ± 24.07	.083[a]

[a] = t-test; [b] = c^2

Results of hypothesis testing

Perceived self-efficacy to avoid multiple risk behaviors, emotional intelligence, time management, and parental monitoring between the two groups were not different at baseline (p>.05).There were two studied variables significantly different at baseline (p<.05) including knowledge of and attitude towards risk behaviors prevention. The pretest score of these two variables were taken into account by two-factor design repeated measure analysis.

Knowledge and attitude towards risk behavior prevention, self-efficacy, emotional intelligence, time management, and parental monitoring

There was statistically significance difference in participants' knowledge and attitude towards risk behavior prevention, self-efficacy, emotional intelligence, time management, and parental monitoring across three time periods between the two groups (Table 4). In addition, there was a statistically significant effect of time on participants' knowledge and attitude towards risk behavior prevention, self-efficacy, emotional intelligence, time management, and parental monitoring within subjects, and the interaction effect between time points and the groups in within-subjects, $p < .01$ (Table 4).

In addition, there were statistically significant differences in participants' knowledge and attitude towards risk behavior prevention, self-efficacy, emotional intelligence, time management, and parental monitoring scores measured immediately after and one month after attending the program between the experimental and comparison groups, $p < .01$ (Table 5). Furthermore, we also found that the mean differences of participants' knowledge and attitude towards risk behavior prevention, self-efficacy, emotional intelligence, time management, and parental monitoring between both groups measured at one month were larger than that immediately after program (Table 5).

Table 4 Two-Factor Design Repeated Measures Analysis for Studies Variables

Source	SS	*df*	MS	F	*p*-value
Knowledge on risk behaviors prevention					
Between subjects					
Group	29.28	1	29.28	5.25	.025
Error	339.67	61	5.568		
Within subjects					
Time	348.59	1.77	196.40	108.40	<.001
Time*group	108.95	1.77	61.38	33.88	<.001
Error (Time)	196.15	108.26	1.81		
Attitude towards multiple risk behaviors					
Between subjects					
Group	1188.58	1	1188.58	64.78	<.001
Error	1119.22	61	18.34		
Within subjects					
Time	1455.99	1.35	1073.14	86.06	<.001
Time*group	1369.81	1.35	1009.62	80.97	<.001
Error (Time)	1031.96	82.76	12.46		
Knowledge on risk behaviors prevention					
Between subjects					
Group	29.28	1	29.28	5.25	.025
Error	339.67	61	5.568		

Table 4 Two-Factor Design Repeated Measures Analysis for Studied Variables (Cont.)

Source	SS	*df*	MS	F	*p*-value
Within subjects					
Time	348.59	1.77	196.40	108.40	<.001
Time*group	108.95	1.77	61.38	33.88	<.001
Error (Time)	196.15	108.26	1.81		
Attitude towards multiple risk behaviors					
Between subjects					
Group	1188.58	1	1188.58	64.78	<.001
Error	1119.22	61	18.34		
Within subjects					
Time	1455.99	1.35	1073.14	86.06	<.001
Time*group	1369.81	1.35	1009.62	80.97	<.001
Error (Time)	1031.96	82.76	12.46		
Self-efficacy to avoid multiple risk behaviors					
Between subjects					
Group	1129.15	1	1129.15	76.76	<.001
Error	897.32	61	14.71		
Within subjects					
Time	1611.48	2	805.74	121.29	<.001
Time*group	598.40	2	299.20	45.04	<.001
Error (Time)	810.42	122	6.64		
Emotional intelligence					
Between subjects					
Group	479.03	1	479.03	36.73	<.001
Error	795.53	61	13.04		
Within subjects					
Time	145.37	1.34	108.09	11.94	<.001
Time*group	372.59	1.34	277.03	30.60	<.001
Error (Time)	742.61	82.04	9.05		
Time management					
Between subjects					
Group	607.23	1	607.23	33.46	<.001
Error	1106.90	61	18.14		
Within subjects					
Time	161.44	2	80.72	27.46	<.001
Time*group	136.96	2	68.48	23.30	<.001
Error (Time)	358.52	122	2.939		

Table 5 Multiple comparisons of mean differences of studied variables across three time points of measurements between the experimental and comparison groups

Groups Variables	Intervention group (n = 32)		Comparison group (n = 31)		Mean difference	*p*-value (two-tailed)
	$\bar{X}$	SD	$\bar{X}$	SD		
Knowledge on risk behaviors prevention						
Before	5.94	2.27	7.29	1.75	-1.35	.011
After	10.28	1.67	8.58	1.62	1.70	<.001
Follow-up	10.56	1.58	8.55	1.15	2.01	<.001
Attitude towards multiple risk behaviors						
Before	31.56	5.06	34.16	4.18	-2.60	.030
After	42.06	2.62	33.32	2.46	8.74	<.001
Follow-up	43.88	2.72	34.97	2.61	8.91	<.001
Self-efficacy to avoid multiple risk behaviors						
Before	26.25	2.97	26.39	2.66	-0.14	.848
After	33.78	3.69	26.61	3.12	7.17	<.001
Follow-up	37.28	3.08	29.65	2.64	7.63	<.001
Emotional intelligence						
Before	22.41	4.69	23.19	3.87	-0.78	.472
After	27.03	1.87	21.87	1.92	5.16	<.001
Follow-up	27.41	1.82	22.23	1.62	5.18	<.001
Time management						
Before	27.91	4.99	27.71	4.57	0.20	.871
After	31.13	2.57	26.65	2.67	4.48	<.001
Follow-up	33.53	2.11	27.45	2.29	6.08	<.001
Parental monitoring						
Before	16.63	2.31	16.55	2.11	0.08	.891
After	19.69	1.82	16.06	1.71	3.63	<.001
Follow-up	20.72	1.80	16.97	1.58	3.75	<.001

Multiple risk behaviors

Findings showed that before the experiment, all participants of both groups had experienced cigarette smoking. Immediately after completing the program and in follow-up period, the experimental group reported only one risk behavior as smoking, and therefore did not engage in multiple risk behaviors. Furthermore, intervention group participants tried to quit using all tobacco products more than the comparison group (28.1% and 3.2%, respectively). On the other hand, one participant in the comparison group reported engaging in two risk behaviors, smoking and alcohol drinking.

Discussion

Our findings indicated that the School-based Participation Program had beneficial effects on knowledge and attitude towards multiple risk behaviors, emotional intelligence, time management, and parental monitoring. This program improved understanding, feeling, and skills to prevent MRB through cooperative learning and the consequence of responsible action through instructional tasks. Attending group participation influenced negative feelings toward MRB from existing experiences via video clips from real situations of those who had engaged in various types of risk behaviors. Participants in the intervention group became critically informed of risk behavior situations arising from their friends› lived experiences and hypothetical situations. This course increased their fears and raised their awareness of the consequence of multiple risk behaviors. Repeatedly practices in a hypothetical situation and actual classroom could enhance confidence to become competent in negotiation skill and have more self-reliance to avoid risk behaviors.[25] Thus, when participants face with stressful life events, they could cope without performing risk behaviors. Scheduling their daily life and time management techniques helped them manage their free time and encouraged collaboration between participants and their parents to think about the family rules, as well as to commit with all participants to follow the rules. This result was in accordance with the study of Wongtongkam et al.[26] Family is the basic unit of Thai society; parent rearing shapes attitudes, habits, and personality through the interaction between family members. Our findings are also consistent with a previous study[27] in risk behaviors prevention in adolescents. We recommend that parental involvement should be included to raise program effectiveness. This activity in our study assisted parents in controlling and monitoring their children's behaviours. In turn participants perceived higher levels of parental monitoring. In addition, we also found this was consistent with results from a meta-analysis of Meader et al.[28] regarding multiple risk behavior prevention. Interventions comprising education (e.g. providing information about behaviors associated with health risks) and skills training (e.g. teaching skills that equip adolescents to engage in less risky behavior) and targeting multiple risk behaviors concurrently are associated with reducing smoking behavior. However, there is one difference between our study and that of Meader et al.[28], the reduction of multiple risk behaviors. Although on average smoking was reduced, it appeared changes in smoking were negatively associated with changes in other behaviors.[28] This suggested that it may not be optimal to target smoking simultaneously with other risk behaviors. In our study, after attending SBPP, the participants tried to quit smoking and did not report engaging in other risky behaviors. This might due to summarizing essential messages from the activity and group discussion could enhance their knowledge and ability to prevent multiple risk behaviors. In addition, the participants› needs (male students, parents, and teachers) were considered in formulating the SBPP to promote their understanding, confidence, and ability to prevent MRB. A culturally prepared and systematic approach for intervention development[29] makes the SBPP different from previous programs which then results in strengthening adolescents' MRB preventive behaviors.

This program goes beyond the limit number of multiple risk behaviors prevention in the formal curriculum for secondary school students. The implementation of the MRB prevention program in the secondary schools is of special concern. We found that participants and their parents showed interest for programs that help prevent multiple risk behaviors. Additionally, male student-family-school bonding can be advanced by developing social skills, improving school climate, and encouraging authoritative parenting practices. This is concordance with the study of Mirzazadeh et al.[30] which found that male students are motivated by an authoritative teaching style that is demanding, supportive and fair. In Thailand, there

is an urgent need to implement programs like SBPP because most adolescents spend time in the school. The SBPP could prevent male students from engaging in MRB. This program could be utilized with other male students who seek to strengthen their proficiency to improve knowledge related to MRB prevention, develop negative attitude towards MRB, self-efficacy to avoid MRB, emotional intelligence, time management, and parental monitoring.

Limitations

Although this study was conducted based on the factors related to risk-taking behaviors of Thai male students with their parents' involvement at one secondary school in urban areas, it might not be generalizable to other male students because of different school contexts. Only 17 parents could participate in this program because of time conflicts and this may have effected results regarding adolescent learning behaviors about risk. In addition, following up participants for only one month follow up might not result in the sustaining of newly learnt behaviors to avoid risk taking.

Conclusions and Implications for Nursing Practice

The findings of this study revealed the effectiveness of MRB prevention intervention for male students in the secondary school. Multiple risk behaviors prevention for male students is improved by the participants' needs which include male students, and parents, as well as focusing on school-based intervention. Three significant concerns are vital for nursing implications. Firstly, the SBPP can be implemented with the secondary school students in other schools. In addition, parental involvement should be promoted in order to sustain the adolescents' preventive behaviors. Program content should be flexible for emerging disruptive changes related to social needs. Secondly, the activities in the program start at a basic level and move forward to more sophisticated skills. Therefore, the effects of this intervention, if maintained over time, may lead to strengthening risk behavior prevention skills. Risk avoidance behaviors need to be followed up at longer time periods in order to maintain the program effectiveness. Finally, further research should be conducted in other schools to test program efficacy.

Acknowledgment

The authors would like to thank all participants in the study. The study was partially supported from National Research Council of Thailand and partially supported for publication from Faculty of Public Health, Mahidol University, Bangkok, Thailand.

References

1. Thiraphattarapun V, Powwattana A, Auemaneekul N. Association Between Multiple Risk Behaviors and Life Assets of High School and Vocational Students. Journal of Public Health Nursing. 2017; 31(3): 1-17.[in Thai].
2. Duangkaew K, Powwattana A, Auemaneekul N. Factors Related To Multiple Risk Behaviors among Vocational Students in Bangkok. Journal of Public Health Nursing. 2017; 31(special edition): 75-95.[in Thai].
3. Tobacco Control Research and Knowledge Management Center. Report on Statistics on Smoking Consumption in Thailand 2018. C2018 [cited 2018 May 1]. Available from http://www.trc.or.th/th/images/upload/files/data/tobaccoinfo/situation/2561/situation_2018.pdf.
4. National Statistical Office. Report on Statistics on Alcohol Consumption in Thailand 2017. C2018 [cited 2018 Febuary 14]. Available from http://www.nso.go.th/sites/2014/Pages/News/2561/N30-08-61-2.aspx
5. Bureau of Reproductive health, Department of Health, Ministry of Public Health. Statistics on Adolescent Births, Thailand 2015. C2016 [cited 2018 December 21]. Available from http://rh.anamai.moph.go.th/ewt_dl_link.php?nid=147
6. Phuhongtong M, Homchampa P, Sirithanawuttichai T. Sexual risk behaviors among early adolescents currently studying at primary schools in Thailand. Suranaree J. Sci. Technol. 2018; 25(1):115-24. [in Thai].
7. Caroline A, Jackson EA. An overview of prevention of multiple risk behaviors in adolescence and young adulthood. J Public Health. 2015;34(1):31-40.
8. Hale DR, Fitzgerald-Yau N, Viner RM. (2014). A systematic review of effective interventions for reducing multiple health risk Behaviors in adolescence. Am J Public Health. 2014; 104(5):19-41.

9. Busch V, De Leeuw JR, De Harder A, Schrijvers AJ. Changing multiple adolescent health behaviors through school-based interventions: a review of the literature. J Sch Health. 2013; 83(7):514-23. https://doi.org/10.1111/josh.12060.
10. Bronfenbrenner U. Ecology of human development: Experiments by nature and design. Cambridge, MA: Harvard University Press; 1979.
11. Centers for Disease Control and Prevention. 2017 State and local youth risk behavior survey. 2017 [cited 2017 March 1]. Available from https://www.cdc.gov/healthyyouth/data/yrbs/pdf/2017/2017_yrbs_standard_hs_questionnaire.pdf
12. Wongtongkam N, Ward PR, Day A, Winefield AH. The influence of protective and risk factors in individual, peer and school domains on Thai adolescents› alcohol and illicit drug use: A survey. AddictBehav. 2014; 39(10):1447-51.https://doi.org/ 10.1016/j.addbeh.2014.05.026
13. WHO Regional Office for Europe. Community participation in local health and sustainable development: approaches and techniques, European sustainable development and health Series No. 4, EUR/ICP/POLC06 03 05D. Copenhagen: WHO Regional Office for Europe; 2002.
14. Bandura A. Self – efficacy: The exercise of control. New York: W.H. Freeman and company; 1997.
15. Connell CM, Gilreath TD, Hansen NB. A multiprocess latent class analysis of the co-occurrence of substance use and sexual risk behavior among adolescents. J Stud Alcohol. 2015; 70(6):943-51. https://doi.org/10.15288/jsad.2009.70.943
16. Srivastava A. A study on risk taking behaviour among adolescents and their attachment with parents and peers. The international Journal of Indian Psychology. 2016; 3(4):2349-3429: 61-70.
17. Polit DF, Hungler BP. Nursing research principles and methods. (6th ed.). Philadelphia: J.B.Lippincott Company; 1999.
18. Health Education Division, Ministry of Public Health. Health literacy scale for unwanted pregnancy prevention of Thai female adolescent. C2016 [cited 2017 March 1]. Available fromhttp://www.hed.go.th/linkhed/file/24.
19. Health Sponsorship Council. Some possible survey questions. C2016 [cited 2016 March 10]. Available from http://www.smokefree schools.org.nz/sites/all/files.
20. Schwarzer R, Jerusalem M. Generalized self-efficacy scale. In J. Weinman S. Wright M. Johnston. Measures in health psychology: A user's portfolio. Causal and control beliefs (pp. 35-37). Windsor, UK: NFER-NELSON; 1995.
21. Department of Mental Health, Ministry of Public Health. Emotional quotient (EQ) for adolescent who age between 12 to 17 years old. Nonthaburi: Department of Mental Health; 2000. [in Thai].
22. Bond MJ, Feather NT. Some correlates of structure and purpose in the use of time. J Pers Soc Psychol. 1988; 55:321-29.
23. Small SA, Kerns D. Unwanted sexual activity among peers during early and middle adolescence: incidence and risk factors. J Marriage Fam. 1993; 55(4):941-52.
24. Hayes L, Hudson A, Matthews J. A process model of parental monitoring. Presented at the 3rd International conference on child and adolescent mental health, Brisbane, Australia; 2002.
25. Mitchell CM, Kaufman CE, Whitesell NR, Beals J, Keane EM. Self-efficacy about sexual risk/protective behaviors: intervention impact trajectories among American Indian youth. J Res Adolesc. 2017; 27(3):697-704. https://doi.org/10.1111/jora.12308
26. Wongtongkam N, Ward PR, Day A, Winefield AH. Exploring family and community involvement to protect Thai youths from alcohol and illegal drug abuse. J Addict Dis. 2015; 34(1):112-21. https://doi.org/10.1080/10550887.2014.975616
27. Allen ML, Garcia-Huidobro D, Porta C, Curran D, Patel R, Miller J, et al. Effective parenting interventions to reduce youth substance use: a systematic review. Pediatrics. 2016; 138(2):1-19.
28. Meader N, King K, Wright K, Graham HM, Petticrew M, Power C, et al. Multiple risk behavior interventions: Meta-analyses of RCTs. Am J Prev Med. 2017; 53(1):19-30.
29. Hoekstra BA, Young VL, Eley CV, Hawking MK, McNulty CA. School nurses' perspectives on the role of the school nurse in health education and health promotion in England: a qualitative study. BMC Nursing. 2016; 15(1):1-9. https://doi.org/10.1186/s12912-016-0194-y
30. Mirzazadeh A, Biggs MA, Viitanen A, Horvath H, Wang LY, Dunville R, et al. Do school-based programs prevent HIV and other sexually transmitted infections in adolescents? a systematic review and meta-analysis. Prev Sci. 2018; 19(4):490-506. https://doi.org/10.1007/s11121-017-0830-0

ผลของโปรแกรมการมีส่วนร่วมของโรงเรียนในการป้องกันพหุพฤติกรรมเสี่ยงในนักเรียนวัยรุ่นชาย

พิมพ์รัตน์ ธรรมรักษา อาภาพร เผ่าวัฒนา สุนีย์ ละกำปั่น ภารณี วัฒนสมบูรณ์ Sarah Anne Stoddard*

บทคัดย่อ: พหุพฤติกรรมเสี่ยง คือ การสูบบุหรี่ ดื่มสุรา และการมีเพศสัมพันธ์ไม่ปลอดภัย เป็นปัญหาที่สำคัญและเกิดขึ้นในช่วงวัยรุ่น การศึกษาที่ผ่านมาส่วนใหญ่เน้นที่การแก้ไขปัญหาเพียงพฤติกรรมใดพฤติกรรมหนึ่ง ขาดการให้ความสำคัญกับพหุพฤติกรรมการวิจัยกึ่งทดลองนี้มีวัตถุประสงค์เพื่อประเมินประสิทธิผลของโปรแกรมการการมีส่วนร่วมโดยใช้โรงเรียนเป็นฐานเพื่อป้องกันพหุพฤติกรรมเสี่ยงในนักเรียนชาย ผู้วิจัยทำการสุ่มเลือกโรงเรียนมัธยมศึกษาที่ตั้งอยู่ในเขตชานเมืองกรุงเทพมหานคร จำนวน 2 โรงเรียน และกำหนดให้โรงเรียนแห่งหนึ่งเป็นกลุ่มทดลอง และโรงเรียนที่เหลือเป็นกลุ่มเปรียบเทียบ จากนั้นผู้วิจัยทำการคัดเลือกนักเรียนชายเข้าร่วมการศึกษากลุ่มละ 32 คน รวมทั้งสิ้น 64 คน โปรแกรมการมีส่วนร่วมโดยใช้โรงเรียนเป็นฐานใช้ระยะเวลาทั้งสิ้น 9 สัปดาห์ ประกอบด้วย 12 หน่วยการเรียนรู้ ในระยะ 3 สัปดาห์แรกนักเรียนชายเข้าร่วม จำนวน 10 หน่วยการเรียนรู้ และผู้ปกครองที่นักเรียนสนิทใกล้ชิดเข้าร่วมจำนวน 4 หน่วยการเรียนรู้ และมีสองหน่วยการเรียนรู้ที่มีทั้งนักเรียนชายและผู้ปกครองเข้าร่วมกิจกรรมพร้อมกัน ทำการเก็บรวบรวมข้อมูลด้วยแบบสอบถามชนิดตอบด้วยตนเอง วิเคราะห์ข้อมูลด้วยสถิติค่าทีและการวิเคราะห์ความแปรปรวนแบบทางเดียวเมื่อมีการวัดซ้ำ

ภายหลังการทดลอง พบว่า กลุ่มตัวอย่างส่วนใหญ่สูบบุหรี่ กลุ่มทดลองมีคะแนนเฉลี่ยความรู้ ทัศนคติ การรับรู้ความสามารถของตนเอง ความฉลาดทางอารมณ์ การบริหารจัดการเวลา และการควบคุมกำกับของพ่อแม่ ดีขึ้นกว่าก่อนการทดลอง และดีกว่ากลุ่มเปรียบเทียบอย่างมีนัยสำคัญทางสถิติ นอกจากนี้นักเรียนชายกลุ่มทดลองยังสามารถป้องกันตนเองจากการมีพหุพฤติกรรมเสี่ยงได้ด้วย ผลการศึกษาแสดงให้เห็นว่าโปรแกรมการมีส่วนร่วมโดยใช้โรงเรียนเป็นฐานสามารถป้องกันพหุพฤติกรรมเสี่ยงในนักเรียนชายได้นอกจากนั้นแล้วการมีส่วนร่วมของครอบครัวยังช่วยเพิ่มความคงอยู่ของการป้องกันการมีพหุพฤติกรรมเสี่ยงในวัยรุ่นชาย

Pacific Rim Int J Nurs Res 2019; 23(3) 228-242

คำสำคัญ: นักเรียนชาย พหุพฤติกรรมเสี่ยง การมีส่วนร่วม โปรแกรมที่ใช้โรงเรียนเป็นฐาน

พิมพ์รัตน์ ธรรมรักษา *นักศึกษาปริญญาเอก หลักสูตรสาธารณสุขศาสตรดุษฎีบัณฑิต ภาควิชาการพยาบาลสาธารณสุข คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล* ***E-mail:*** *pimrat.t@bcn.ac.th*

ติดต่อที่: อาภาพร เผ่าวัฒนา* *รองศาสตราจารย์ ภาควิชาการพยาบาลสาธารณสุข คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล* ***E-mail:*** *Arpaporn.pow@mahidol.ac.th*

สุนีย์ ละกำปั่น *รองศาสตราจารย์ ภาควิชาการพยาบาลสาธารณสุข คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล* ***E-mail:*** *Sunee.lag@mahidol.ac.th*

ภารณี วัฒนสมบูรณ์ *ผู้ช่วยศาสตราจารย์ ภาควิชาการพยาบาลสาธารณสุข คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล* ***E-mail:*** *Paranee.vat@mahidol.ac.th*

Sarah Anne Stoddard*, Assistant Professor, School of Nursing, University of Michigan, USA.* ***E-mail:*** *sastodda@med.umich.edu*