Original Article

Effects of a Mobile Application "Teenagers Don't Drink" on Preventing Alcohol Consumption among Thai Adolescents: A Quasi-experimental Study

Somporn Sitthisongkram[1], PhD, MNS, RN; Amavasee Ampansirirat[2], DrPH, MNS, RN; Pornpun Manasatchakun[2], PhD, MNS, RN; Patthanit Jongkae[3], MNS, RN; Sumitporn Chomchan[1], MNS, RN; Prapaisri Kabmala[4], MNS, RN; Yaowaluck Maka[4], MNS, RN

[1]Mental Health and Psychiatric Nursing, Boromarajonani College of Nursing Chiang Mai, Faculty of Nursing, Praboromarajchanok Institute, Thailand;
[2]Community Health Nursing, Boromarajonani College of Nursing Chiang Mai, Faculty of Nursing, Praboromarajchanok Institute, Thailand;
[3]Pediatric Nursing, Boromarajonani College of Nursing Chiang Mai, Faculty of Nursing, Praboromarajchanok Institute, Thailand;
[4]Maternal and Newborn Nursing and Midwifery, Boromarajonani College of Nursing Chiang Mai, Faculty of Nursing, Praboromarajchanok Institute, Thailand

Corresponding Author:
Pornpun Manasatchakun, PhD, MNS, RN; Community Health Nursing, Boromarajonani College of Nursing Chiang Mai, Faculty of Nursing, Praboromarajchanok Institute, Postal address: 201 M.4, Donkeaw Sub-district, Mea Rim City, Chiang Mai Province, Postal code: 50180, Thailand
Tel: +66 53 121121; **Fax:** +66 53 121125; **Email:** pornpun.manasatchakun@gmail.com, pornpun@bcnc.ac.th

Received: 2 January 2026 **Revised:** 10 June 2026 **Accepted:** 13 June 2026
Online Published: 22 June 2026

Abstract

Background: Adolescence drinking behavior is steadily increasing while the mean age of first- time drinkers has decreased. The aims of this study were to examine the potential effect of the "Teenagers Don't Drink" application on preventing alcohol use among Thai adolescents.

Methods: This quasi-experimental design with cluster-level allocation was conducted among adolescents aged 10-14 years in Chiang Mai, Thailand, between March and May 2022. A total of 50 adolescents were recruited based on the calculated sample size; 25 participants who met the inclusion criteria were selected by simple random sampling for each group. The intervention group received the mobile application "Teenagers don't drink". The control group received an adolescence drinking prevention manual. The data was gathered using Alcohol Use Disorders Identification Test (AUDIT), Alcohol Knowledge, Attitude towards Drinking, Drinking Refusal Self-efficacy, Parental control and support regarding alcohol consumption, and Intention to not Drink Alcohol Questionnaires before and one month after the intervention. Data were analyzed using descriptive statistics, Wilcoxon Matched Signed Rank Test, Paired T-test, Mann-Whitney U Test, and Independent t-test with STATA version 15. A significance level of less than 0.05 was considered.

Results: Between groups score comparisons showed a statistically significant differences in terms of knowledge about alcoholic beverages ($P=0.003$), attitude towards drinking ($P<0.001$), drinking refusal self-efficacy ($P=0.003$), parental control and support regarding alcohol consumption ($P=0.003$), and intention to not drink alcohol ($P<0.001$) after the intervention.

Conclusion: The "Teenagers Don't Drink" application may improve adolescents' comprehension of alcoholic beverages, pertinent laws and regulations, and life skills associated with alcohol use prevention. The program seems capable of aiding initiatives to avoid or diminish alcohol intake among adolescents in communal environments.

Keywords: Adolescent; Alcohol Drinking; Mobile Application; Primary Prevention

Please cite this article as: Sitthisongkram S, Ampansirirat A, Manasatchakun P, Jongkae P, Chomchan S, Kabmala P, Maka Y. Effects of a Mobile Application "Teenagers Don't Drink" on Preventing Alcohol Consumption among Thai Adolescents: A Quasi-experimental Study. IJCBNM. 2026;14(3):188-203. doi: 10.30476/ijcbnm.2026.107393.2831.

Introduction

Thailand's adolescent drinking rate is rapidly increasing.[1] Alcohol drinking increases the risk of criminality for this age group more than any other one. Because alcohol consumption can impair judgment and self-control, it is strongly linked to behavioral issues in youth.[2] Furthermore, teenagers have yet to fully develop their emotional and self-control abilities. As a result, under-age alcohol consumption promotes conflict, violence, and warfare. In addition, teenagers can become delinquent, and criminal activities increase. Moreover, drinking negatively affects young people's social connections.[3] This can be the origin of lessoning sexual prohibitions and can expedite early sexual encounters. As a result, sexually transmitted diseases and adolescent pregnancy can significantly increase.[4]

Alcohol consumption figures show that the implications for teenagers are more severe. As a result, various studies on how to prevent and reduce alcohol consumption for this targeted group have been conducted. A literature review reveals that alcohol prevention programs can be divided into three categories: parents-based intervention, school-based intervention, and community-based intervention.[5] Parents-based intervention emphasizes the importance of parental influence for teenage alcohol use as well as parents' attitudes towards drinking alcohol. Findings of a study also revealed that a program to prevent teenage alcohol consumption targeting parents can reduce drinking behavior among children.[6] It can be inferred that parents have a significant role in keeping youth from drinking alcohol.[7, 8] Meanwhile, alcohol prevention initiatives in schools should focus on the youth themselves. The emphasis will be on social skills, attitudes, and knowledge related to alcohol prevention. Previous studies found that teenagers with knowledge of alcohol had a negative attitude toward drinking, while youth with high social skills drank less alcohol than those without these specific traits.[9, 10] Community-based alcohol prevention initiatives have found that social, environmental, and legal factors governing alcohol consumption significantly influence the drinking behavior of young people.[11] Although regulations pertaining to alcohol sales can limit its availability to teenagers, they have been ineffective in curtailing the consumption of alcohol among young individuals. This was due to the group's ability to acquire alcohol from various sources.[12] In order to successfully reduce alcohol consumption in youth, all essential sectors for youth organizations need to be included.[13] Therefore, an integrated approach that combines the involvement of families, schools, and community contexts may be needed to support alcohol use prevention among adolescents.

This study aimed to examine effect of using a mobile application called the "Teenagers Don't Drink" including adolescents, families, schools, and community environments involvement on preventing alcohol use among adolescents.

Materials and Methods

This quasi-experimental study with cluster-level allocation was performed for adolescents aged 10 to 14 years in Chiang Mai, Thailand, from March to May 2022. Two qualifying regions in Mae Rim district, Chiang Mai, were designated as clusters and allocated to either the intervention or control group. Cluster-level allocation was utilized to reduce contamination among individuals in the same vicinity. Participants from each designated location were enrolled in the study.

The sample size was calculated using an independent t-test utilizing G*Power,[14] establishing a power of 80%, a significance level of 0.05, and an effect size of 0.80. The effect size was based on a prior study with a similar focus on alcohol knowledge.[15] The sample size was calculated using the following formula:

$$N = \frac{2\left(z_{1-\alpha/2} - z_{1-\beta}\right)^2}{d^2}$$

The minimal sample size was determined to be 42 participants. To reduce the risk of participant attrition, the researcher explored the option of increasing the sample size by 20%, leading to a total of 50 participants, evenly distributed into two groups of 25: a control group and an intervention group. The inclusion criteria for participants included individuals aged 10 to 14 years, residing in the region, enrolled in the local school, living with parents, possessing a mobile phone (applicable only to the intervention group), and not having mental health issues such as severe depression, severe stress or bipolar affective disorder. The exclusion criteria were withdrawing from the research project, including relocation to different workplaces or moving residences outside the area, or missing one or more intervention sessions. Participants who fulfilled the inclusion criteria were allocated to two intervention and control groups. The areas of the study were selected randomly, with area A designated as the intervention group and area B as the control group. The distance between the two sub-districts was approximately 18 kilometers. The two settlements did not share contiguous boundaries.

The first author met the group of participants to explain the purpose and the data collection procedure, and to request their cooperation in participating. The intervention group utilized the application "Teenagers Don't Drink" for a duration of four weeks, while the control group was provided with a guidebook which aimed at preventing the consumption of alcoholic beverages. Participants in the intervention group were guided on the installation and utilization of the "Teenagers Don't Drink" mobile application. They were encouraged to autonomously engage with the application's educational modules, videos, and interactive activities throughout the intervention period. Twenty-five parents (either mother or father), two educators, and two monks were mandated to install the application and complete the pertinent educational modules corresponding to their respective responsibilities. We aimed to improve the adolescents' engagement with applications and to reinforce alcohol prevention messages within family, school, and community settings. The topics of training sessions in the application are shown in Table 1. The research team facilitated communication with participants through school and community coordinators to improve engagement and address technical challenges. Data collection was conducted at two times: initially before the intervention and again one month after the intervention, employing the same set of questionnaires for both groups.

The "Teenagers Don't Drink" application was created by researchers and had customized activities for adolescents, parents, educators, and community officials, including monks. The application highlights the collaborative roles of families, schools, and community environments in fostering awareness of collective responsibility to deter adolescent alcohol drinking. Information regarding alcohol was presented via an audiovisual clip depicting the adverse effects of alcohol consumption. The application's content validity was assessed by three expert panels, including a nurse specialist in substance use and addiction nursing, a nursing faculty specializing in mental health and psychiatric nursing, and a nurse specialist in community psychiatric nursing, resulting in a content validity index (CVI) of 1.00.

A handbook was created to educate on teenage alcohol use prevention, covering alcoholic beverages, alcohol-related legislation, adolescent life skills, the four sublime states of mind, and self-esteem. The handbook was created as a self-directed learning tool and utilized by the control group. The handbook's content validity was assessed by three expert panels, including a nurse specialist in substance use and addiction nursing, a nursing faculty specializing in mental health and psychiatric nursing, and a nurse specialist in community psychiatric nursing, resulting in a CVI of 1.00.

Table 1: Topics of training sessions in the intervention group

Week/Day	Activities for adolescents
Week 1	
Monday	Introduction for the mobile application "Teenagers Don't Drink" Session 1: Knowledge about alcoholic beverages (50 min): Start with doing a pretest about the session content, learning about alcoholic beverages via e-learning, learning about consequences from alcohol consumption via YouTube, and doing posttest.
Wednesday	Session 2: Alcohol-related legislation (40min): Start with doing pretest about the session content, learning about alcohol-related legislation via e-learning, and doing posttest.
Friday	Session 3: Adolescent (50min): Start with doing pretest about the session content, learning about adolescent development and factors related to alcohol consumption in adolescents via e-learning, and doing posttest.
Week 2	
Monday	Session 4: Decision-making skills (40 min): Learning about decision-making skills via animation and e-learning and writing reflective thinking about decision-making skills in daily life/monitoring and giving feedback by teacher.
Thursday	Session 5: Emotional control skills (30 min): Learning about emotional control skills via animation and e-learning and writing reflective thinking about emotional control skills in daily life/ monitoring and giving feedback by teacher.
Week 3	
Monday	Session 6: Refusal skills (30 min): Learning about refusal skills via animation and e-learning and writing reflective thinking about refusal skills in daily life/monitoring and giving feedback by the teacher.
Thursday	Session 7: Stress management skills (30 min): Learning about stress management skills via animation and e-learning. and writing reflective thinking about stress management skills in daily life/monitoring, and giving feedback by the teacher.
Week 4	
Monday	Session 8: Four sublime states of mind (Buddhism) (30 min): Learning about loving-kindness and compassion via animation and writing reflective thinking about loving-kindness and compassion/ monitoring.
Wednesday	Session 9: Four sublime states of mind (Buddhism) (30 min): Learning about sympathetic joy and equanimity via animation and writing reflective thinking about Sympathetic Joy and Equanimity.
Friday	Session 10: Self-esteem (40 min): Learning about Self – esteem via e-learning and writing reflective thinking about self-esteem/monitoring and giving feedback by the teacher.
Week/Day	**Activities for parents**
Week 1	Introduction for the mobile application "Teenagers Don't Drink" and learning in Session 1-3 (In the same day with adolescents)
Week 2	
Monday	Session 4: Decision-making skills (40 min): Learning about decision-making skills via animation and e-learning, writing reflective thinking, and how to interact with adolescents who are having problems with decision-making.
Wednesday	Session 5: Emotional control skills (30 min): Learning about emotional control skills via animation and e-learning and writing reflective thinking, and how to interact with adolescents who are having problems with emotional control.
Friday	Session 6: Refusal skills (30 min): Learning about refusal skills via animation and e-learning and writing reflective thinking and how to interact with adolescents who are having problems with refusal skills.
Week 3	
Monday	Session 7: Stress management skills (30 min): Learning about stress management skills via animation and e-learning and writing reflective thinking, and how to interact with adolescents who are having problems with stress management.
Thursday	Session 8: Family as role modeling (30 min): Learning about how to model alcohol/drug usage for kids via e-learning and reflecting on the significance of role modeling for adolescents.

Week 4	
Monday	Session 9: Family as a protective barrier against alcohol consumption (30 min): Learning about promoting family well-being and reflecting on the significance of promoting family well-being for adolescents.
Thursday	Session 10: Family Role (30 min): Learning about how to communicate with kids to avoid alcohol consumption and communication skills and reflecting on the significance of communication skills for adolescents.
	Parents were monitored and given feedback on all activities by health care providers and researchers in the community.
Week/Day	**Activities for teachers**
Week 1	Introduction to the mobile application "Teenagers Don't Drink" and learning in Session 1-3 (In the same day with adolescents)
Week 2	
Monday	Session 4: Teachers' role in preventing students' alcohol use (40min): Learning about the role of teachers in preventing student alcohol use via e-learning and writing reflective thinking on how to prevent or delay the onset of alcohol use among students.
Thursday	Session 5: Teachers' role on screening for drug and/or alcohol use in students (40min): Learning about how to screen for drug and/or alcohol use in students and writing reflective thinking on how to screen for drug and/or alcohol use in students.
Week 3	
Monday	Session 6: Counseling skills (40min): Learning about counseling students who have issues with drug or alcohol use and writing reflective thinking on how to counsel students who have issues with drug or alcohol use.
Thursday	Session 7: Monitoring and surveillance of students at risk or engaging in alcohol consumption (40min): Learning about monitoring and surveillance of students at risk or engaging in alcohol consumption and writing reflective thinking on how to monitor and surveil students at risk or engaging in alcohol consumption.
Week 4	
Monday	Session 8: Positive reinforcement and student self-esteem (40min): Learning about positive reinforcement and its effects on a student's self-esteem and writing reflective thinking on positive reinforcement and student self-esteem in class.
	Teachers: Responding and giving feedback for all adolescents' sessions.
Week/Day	**Activities for monks**
Week 1	Introduction for Mobile application "Teenagers Don't Drink" and learning in Session 1-3 (In the same day with adolescents).
Week 2	
Monday	Session 4: Decision-making skills (40 min): Learning about decision-making skills via animation and e-learning and writing reflective thinking on how to deal with adolescents with decision-making problems.
Thursday	Session 5: Emotional control skills (30 min): Learning about emotional control skills via animation and e-learning and writing reflective thinking on how to deal with adolescents with emotional control problems.
Week 3	
Monday	Session 6: Refusal skills (30 min): Learning about refusal skills via animation and e-learning, and writing reflective thinking on how to deal with adolescents with refusal skills.
Thursday	Session 7: Alcohol- free in the temple (30 min): Learning about alcohol- free in the temple and writing reflective thinking on how to make the temple alcohol-free.
Week 4	
Monday	Session 8: Sermon: Alcohol drinking prevention in community (30 min): Learning about alcohol drinking prevention in the community and writing reflective thinking on how to sermonize people on preventing alcohol consumption.
Wednesday	Session 9: Communication skills (30 min): Learning about communication strategies for Buddhists to avoid drinking and writing reflective thinking on how to communicate with Buddhists to avoid drinking.
	Monks: Responding and giving feedback for adolescents' session 8-9 and parents' session 8-10

Data collection in this study was conducted using a demographic questionnaire, Alcohol Use Disorders Identification Test (AUDIT), the alcohol knowledge test, attitude towards alcohol questionnaire, drinking refusal self-efficacy questionnaire revised for adolescent participants (DRSEQ-RA), parental control and support regarding alcohol consumption questionnaire, and intention not to drink alcohol test.

Demographic and basic information were collected such as sex, age, religion, education, grade point average (GPA), and people who live with while studying, number of family members, monthly allowance, parent's occupation, family income, family members' alcohol use and friends drinking, alcohol drinking behavior consisting of five questions about lifetime drinking, current drinking, amount and frequency of drinking, person who drinks with, and the type of alcoholic beverages consumed.

The AUDIT was developed by the World Health Organization in 1989 and translated into Thai by the Department of Mental Health, Thailand, in 2004.[16, 17] The assessment comprises 10 questions regarding quantity, frequency, and issues associated with alcohol intake. It evaluates three domains: alcohol intake (items 1–3), dependency symptoms (items 4–6), and alcohol-related repercussions (items 7–10). The responses are multiple-choice on a 5-point scale, with scores varying from 0 to 4 points. The total score can range from 0 to 40. It is divided into four groups: "Low-Risk Drinker" (0-7), "Hazardous Drinker" (8-15), "Harmful Use" (16-19), and "Alcohol Dependence" (20-40).[16] Regarding construct validity, factor-analytic studies consistently reveal a two- or three-factor structure corresponding to the conceptual domains of consumption, dependence, and related problems.[18, 19] The test has a robust association with the diagnostic criteria of the DSM-IV and ICD-10, with correlation coefficients between 0.70 and 0.90.[18, 19] The test demonstrates a sensitivity of 95% and a specificity of 80% for detecting hazardous alcohol consumption.[16] The AUDIT shows high internal consistency when it comes to reliability, with Cronbach's α ranging from 0.80 to 0.94 in studies from around the world.[18, 19] The test-retest reliability of the AUDIT ranges from 0.87 to 0.95 across international studies.[19] This study assessed the reliability of the questionnaire using test-retest, yielding a correlation of 0.93.

The Alcohol Knowledge Test was developed by the research team based on the test created in a study related to the development of a community participative program for Alcohol drinking prevention.[20] There were 12 multiple-choice questions, each with four possible choices regarding the penalties, effects, and legal measures related to drinking beverages. Each correct answer was scored as 1 point, while each incorrect answer was scored as 0 points. The maximum score represented 12 points. The scores were classified as "High" (exceeding 9 points), "Moderate" (ranging from 8 to 9 points), and "Low" (below 8 points). The CVI and reliability of the test were 0.97and 0.70, respectively.

The Attitude towards alcohol questionnaire was developed by Pimathai et al. in 2020.[21] It consists of three components: knowledge and understanding, feelings, and behavior. The scale is scored using a Likert scale with 20 items divided into four levels: strongly agree, agree, disagree, and strongly disagree, with total scores ranging from 20 to 80 points. The scores were categorized as "Less accepting" (less than 38 points) and "More accepting" (more than 38 points). The CVI and the reliability of this questionnaire were 0.93 and 0.90, respectively.[21] In this study, the questionnaire was reliable with Cronbach's alpha coefficient of 0.84.

The DRSEQ-RA was developed by Young et al. in 2007, adapted and translated into Thai in 2010.[22, 23] There were 14 questions, which used a Likert scale, divided into four levels: extremely confident (4), quite confident (3), not quite sure (2), not sure at all (1). The overall score ranges from 14 to 56, categorized as

"High Refusal Self-Efficacy" (45-56) and "Low Refusal Sel-Efficacy" (14-44). Content validity was approved by five experts, and the reliability of this questionnaire was 0.93.[23] For this study, the questionnaire's reliability was validated by a Cronbach's alpha coefficient of 0.95.

Parental control and support regarding alcohol consumption questionnaire was developed by Thepnoo in 1997.[24] It consists of 20 questions about parental behavior or words that demonstrated control or support of alcohol consumption for teenagers. The answers used a 5-level rating scale: most often (5), often (4), moderately (3), rarely (2), least (1). This scoring is reversed in certain items, including 4, 7, 8, 9, 12, 13, 14, 15, 17, and 20. The overall score ranges from 20 to 100 points, with a lower score indicating stronger control over alcohol usage among teenagers. The CVI and the reliability of this questionnaire were 0.86 and 0.76, respectively.[24] In this study, the questionnaire's reliability was validated by a Cronbach's alpha coefficient of 0.86.

Intention not to drink alcohol test was created by Kantawong et al. in 2014.[25] It is also used to assess the intentions not to drink alcoholic beverages among teenagers. This 14-question questionnaire is about situations that lead to drinking alcoholic beverages. It is scored using a rating scale with 5 levels of rating criteria: definitely not drinking (5), not drinking (4), not sure (3), drinking (2), and definitely drinking (1). The overall score ranged from 14 to 70 points; a higher score indicates a greater intention to abstain from alcohol consumption. The CVI and the reliability of this questionnaire were 0.99 and 0.80, respectively.[25] In the present study, Cronbach's alpha coefficient for this questionnaire was reassessed and found to be 0.96.

Descriptive statistics were employed to encapsulate the characteristics of the participants and the variables of the study. Chi-Square and Fisher Exact tests were used to compare baseline characteristics between the intervention and control groups. The paired t-test and independent t-test were utilized for continuous variables that followed a normal distribution, whereas the Wilcoxon matched-pairs signed-rank test and Mann–Whitney U test were employed for the data that did not conform to a normal distribution. All analyses were conducted utilizing STATA version 15. A P-value less than 0.05 was deemed statistically significant.

The study protocol received approval from the Ethical Review Board of Boromarajonani College of Nursing, Chiang Mai (ERB No. BCNCT11/2565). The decision to accept or decline participation does not affect or compromise the sample. All participants provided written informed consent before their participation. For individuals below 18 years of age, signed informed consent was obtained from parents or legal guardians. Participants were allowed to withdraw from the research project at any time. This activity, along with the request for approval to engage in the research, would not affect them in any way.

The participants' responses to questions or any information collected would be kept confidential and would not be used outside of this research project.

Results

Six participants withdrew from the study due to travel outside the area (one from the intervention group and three from the control group), while two participants encountered Internet issues (from the intervention group), resulting in a final participant of 44 individuals, with 22 in the intervention group and 22 in the control group. The mean age of the participants in the intervention and control groups was 12.00±1.23 and 12.86±0.94, respectively, with a statistically significant difference between the two groups (P=0.01). The demographic features of the intervention and control groups for sex, education, living arrangements, monthly allowance, parental occupation, familial alcohol drinking, and friends' drinking were not significantly different (P>0.05). However, religion, GPA, and household income showed statistically significant differences between the intervention and control groups (P<0.05) (Table 2).

Table 2: Demographic and baseline characteristics of the participants

Variables	Intervention Group (N=22)	Control Group (N=22)	P value
Sex	**N (%)**	**N (%)**	
Male	9(40.91)	11(50.00)	0.55*
Female	13(59.09)	11(50.00)	
Education			
Grade 4-6	12(54.54)	9(40.91)	0.14**
Grade 7-8	10(45.45)	13(59.09)	
Religion			
Budish	22(100)	14(63.64)	0.004**
Cristian	0(0)	7(31.82)	
Islam	0(0)	1(4.54)	
GPA[a]			
1.01 – 2.00	0(0)	2(9.09)	0.01**
2.01 – 3.00	6(27.27)	12(54.55)	
3.01 – 4.00	16(72.73)	8(36.36)	
People who live with while studying			
Father and Mother	13(59.09)	15(68.18)	0.87**
Father or Mother	4(18.18)	3(13.63)	
Alone	1(4.55)	1(4.55)	
Relatives	1(4.55)	2(9.09)	
Friends	0(0)	0(0)	
Others	3(13.63)	1(4.55)	
Monthly allowance (Baht)			
Less than 500	2(9.09)	1(4.55)	0.21**
501 – 1,000	8(36.36)	8(36.36)	
1,001 – 1,500	5(22.73)	8(36.36)	
1,501 – 2,000	5(22.73)	1(4.55)	
2,001 – 2,500	2(9.09)	1(4.55)	
More than 2,500	0(0)	3(13.63)	
Parental occupation			
Famer	3(13.63)	4(18.18)	0.47**
Merchant	3(13.63)	2(9.09)	
Company employee	1(4.55)	2(9.09)	
Laborer	14(63.64)	11(50.00)	
Government official	1(4.55)	0(0)	
other	0(0)	3(13.64)	
Household income /month (Baht)[b]			
Less than or equal 5,000	0(0)	7(31.82)	0.007**
5,001 – 10,000	11(50.00)	9(40.91)	
10,001 – 15,000	8(36.36)	3(13.63)	
15,001 – 20,000	3(13.64)	1(4.55)	
20,001 – 25,000	0(0)	2(9.09)	
More than 25,000	0(0)	0(0)	
Family members drinking			
No	8(36.36)	5(22.73)	0.32*
Yes	14(63.64)	17(77.27)	
Friends drinking			
No	16(72.73)	12(54.55)	0.21*
Yes	6(27.27)	10(45.45)	

[a]GPA: Grade Point Average; [b]1 US Dollar = 33 Thai Baht; *Chi-squared test; ** Fisher's exact test

There was no statistically significant difference between the intervention and control groups in terms of drinking behavior (Table 3).

The median of the AUDIT, and the intention to abstain from alcoholic beverages, the average score of knowledge regarding alcoholic beverages, attitudes towards alcohol consumption, and perceived self-efficacy in refusing alcohol in the control group did not reveal a statistically significant difference between before and after receiving an adolescent drinking prevention manual (P>0.05). The comparison in the mean score of parental control of alcohol use showed a statistically significant difference (P=0.005). The score of all variables except the average of AUDIT score and parental control of alcohol use in the intervention group after utilizing the application "Teenagers Don't Drink" showed a statistically significant difference compared to the score before its use (P<0.05) (Table 4).

The comparison of the two groups revealed no significant differences in the average scores regarding knowledge of alcoholic beverages, attitudes towards alcohol consumption, perceived self-efficacy in refusing alcohol, parental control and promotion of alcohol use, and the median of the intention to abstain from alcoholic beverages before the application intervention (P>0.05). Before the intervention, the AUDIT scores exhibited a statistically significant difference between the two groups (P=0.03). Upon receipt of the application, comparison between the two groups showed a statistically significant difference in terms of the knowledge of alcoholic beverages, attitudes towards alcohol consumption, perceived self-efficacy in refusing alcohol, parental control and promotion of alcohol use, and the intention to abstain from alcoholic beverages (P<0.05) except the AUDIT score (P=0.69) (Table 4).

Table 3: Comparison of drinking behavior between the intervention and control groups

Variables	Intervention Group N=22	Control Group N=22	P value
	N (%)	N (%)	
Lifetime drinking			
No	16(72.73)	10(45.45)	0.06*
Yes	6(27.27)	12(54.55)	
Current Drinking			
No	16(72.73)	10(45.45)	0.30**
Last year	5(22.73)	7(31.82)	
Last month	1(4.54)	3(13.64)	
Last week	0(0)	2(9.09)	
Amount of drinking/each time			
Not Drinking	16(72.73)	10(45.45)	0.11**
Less than 1 Standard drink	5(22.73)	5(22.73)	
1 – 4 Standard drink	1(4.55)	6(27.27)	
More than 5 Standard drink	0(0)	1(4.55)	
Who Do you drink with			
Not Drinking	16(72.73)	10(45.45)	0.23**
Friends	5(22.73)	8(36.37)	
Family members	1(4.55)	2(9.09)	
Others	0(0)	2(9.09)	
Type of alcoholic beverage			
Not Drinking	16(72.72)	10(45.45)	0.17**
Spirit	1(4.55)	0(0)	
Beer	3(13.63)	7(31.82)	
Wine	1(4.55)	1(4.55)	
Other	1(4.55)	4(18.18)	

*Chi-squared test; ** Fisher's exact test

Table 4: Comparison of the study outcome scores between the intervention and control groups before and after the intervention

Variables	Group	Before intervention		After intervention		P value
		Mean±SD	Median (Q_3-Q_1)	Mean±SD	Median (Q_3-Q_1)	
Alcohol use disorders identification	Intervention	0.73±0.51	0 (0-0)	0.23±0.13	0 (0-0)	0.31*
	Control	3.36±1.13	0 (0-5)	2.73±1.16	0 (0-3)	0.48**
P value			0.03***		0.69****	
Knowledge about alcoholic beverages	Intervention	5.73±0.50	6 (4-8)	7.36±0.43	7 (6-9)	0.001*
	Control	5.45±0.44	6 (5-7)	5.09±0.37	5 (4-6)	0.48*
P value		0.68*****		0.003*****		
Attitudes towards drinking	Intervention	38.09±1.46	40 (33-42)	34±1.44	33.5 (29-39)	0.02*
	Control	41.18±1.31	41.5 (37-45)	42.55±1.49	43 (38-48)	0.30*
P value		0.12*****		<0.001*****		
Drinking refusal self-efficacy	Intervention	43.55±2.35	43.5 (36-56)	48.77±1.95	53.5 (42-56)	0.02*
	Control	37.00±2.39	36 (28-46)	39.45±2.19	38.5 (32-47)	0.30*
P value		0.06*****		0.003*****		
Parental control and support regarding alcohol consumption	Intervention	66.36±3.00	67 (54-78)	66.27±2.82	64.5 (58-80)	0.95*
	Control	70.45±1.95	71 (61-76)	77.41±2.08	78 (74-80)	0.005*
P value		0.26*****		0.003*****		
Intention to not drink alcohol	Intervention	61.68±1.95	64.5 (55-70)	65.73±1.56	70 (63-70)	0.03**
	Control	57.91±2.28	59 (48-68)	55.50±2.34	57.5 (48-63)	0.25**
P value			0.08***		<0.001***	

*Paired simple t-test; **Wilcoxon Matched Signed Rank Test; ***Mann-Whitney U Test; ****ANCOVA, *****Independent t-test

Discussion

The study revealed that using the "Teenagers Don't Drink" application has the potential to influence several aspects of alcohol consumption behavior including scores of knowledge about alcoholic beverages, attitudes towards drinking, self-efficacy in refusing drinks, and intentions to abstain from drinking.

The mean AUDIT score for the intervention group decreased after the use of the "Teenage Don't Drink" application in comparison to the pre-intervention score in the intervention group. However, the study yielded no statistically significant results. This may be attributed to the participant group, which consisted of early adolescents aged 10 to 14 years old who rarely displayed alcohol consumption issues. Results showed that the intervention group refrained from alcohol consumption. The questions concerning alcohol consumption and its effects were part of the AUDIT. The monitoring of alcohol consumption habits took place one month after the application usage, which may be insufficient for evaluating the application's effect on the AUDIT score. This is consistent with prior research suggesting that employing a mobile application to reduce alcohol consumption did not produce statistically significant differences between the groups using the application and those who did not.[26, 27] However, the average AUDIT scores after using the application were lower than those recorded previously. This illustrated how the "Teenage Don't Drink" application, designed to prevent alcohol consumption among adolescents, may reduce alcohol-related behaviors.

The average alcohol knowledge score of the intervention group increased significantly after using the application, with a statistical difference. Before and after administering the alcohol prevention handbook to the control group, there was no significant difference in the average alcohol knowledge score.

A statistically significant difference was observed between the average alcohol knowledge scores of the intervention and control groups following the use of the application. The findings demonstrated that the "Teenage Don't Drink" application enhanced the intervention group's understanding of alcohol and alcohol use. This is consistent with previous research indicating that teenagers' engagement with mobile applications strengthens their knowledge of alcoholic beverages.[26,27] The elevated alcohol knowledge scores in the participants using the "Teenagers Don't Drink" application may stem from the application's incorporation of multimedia and interactive pedagogical techniques. The application disseminated alcohol-related information through videos that illustrate the adverse effects of alcohol intake, potentially improving understanding and memory of the information. Conversely, the handbook supplied to the control group predominantly consisted of text-based material, potentially resulting in diminished opportunities for active interaction. Additionally, knowledge is readily available and can be studied at any time or in any location. This resulted in a deeper level of awareness of alcohol and alcohol use compared to the control group that received only the handbook. The transition to online education during the COVID-19 epidemic has enhanced the adolescents' proficiency with digital platforms. The use of a mobile application for alcohol use prevention may serve as a practical and contextually appropriate method for providing health education to teenagers.

The intervention group's attitudes towards alcohol consumption after using the application scored lower than previously, with a statistically significant difference. The intervention group had a lower mean score for attitudes towards alcohol consumption compared to the control group, and this difference was statistically significant. The "Teenagers Don't Drink" application significantly influenced the intervention group's attitude score about alcohol usage. This may be attributed to the methodology employed by the initiative "Teenagers Don't Drink," which taught the dangers of alcohol intake through both on-line and video training. The impact of alcohol intake throughout adolescence may increase awareness of the potential problems associated with alcohol consumption potentially influencing the users of the "Teenagers Don't Drink" application. Attitude towards any action includes an individual's emotions, thoughts, and beliefs derived from their experiences and education concerning that behavior. That behavior may be either favorable or unfavorable. An individual is more inclined to partake in such behavior if he/she possesses a favorable disposition towards it. A person is more inclined to refrain from an action if he/she harbors a greater unfavorable sentiment towards that action.[28]

The mean score of the intervention group regarding self-efficacy in refusing alcohol after utilizing the application was higher than the score obtained prior to its use, indicating a statistically significant difference. There was a statistically significant difference between the intervention group's mean self-efficacy scores in refusing alcohol intake and those of the control group, who only received the handbook on preventing alcohol consumption in adolescents. The use of the "Teenagers Don't Drink" application effectively increased the adolescents' self-efficacy scores in resisting alcohol, while the control group showed no significant change in their self-efficacy scores before or after using the alcohol prevention manual for adolescents. This impact may arise from the instructional framework of the "Teenagers Don't Drink" program, which utilized animation to demonstrate the application of life skills including refusal techniques. The settings employed as examples reflected genuine situations that may occur in the daily lives of adolescents, and the attributes of the animations were analogous to those of the intervention group. Consequently, adolescents demonstrated enthusiasm and dedication in acquiring

knowledge. Moreover, there were online courses that emphasized the fundamental aspects of various strategies youngsters should utilize to reject alcohol which may enhance their comprehension and improve their awareness. They were offered the chance to evaluate themselves, contemplate the use of these skills in their daily lives, and formulate strategies for implementation. These efforts resulted in an improved average score of self-efficacy regarding alcohol abstinence. Moreover, parents assumed a pivotal role. The parents of the intervention group acquired and understood an array of life skills via the application. They subsequently were able to impart their newly acquired knowledge and then apply it to their offspring. The results boded well for parent-child discussions regarding various competencies, including refusal skills. These skills may enhance the adolescents' self-confidence and support their ability to refrain from alcohol use in various situations.[29]

Prior to the intervention, the intervention group's mean score on parental alcohol control and support was higher than post-application; however, the difference was not statistically significant. It is worth noting that the intervention period coincided with the Songkran Festival, a high-risk period for alcohol use in Thai culture. During this period the control group showed a significant increase in scores, indicating a decline in drinking control, while the intervention group managed to maintain its level of control. The results revealed that the "Teenagers Don't Drink" application may have exerted a protective influence on the decline of parental drinking control practices during high-risk festive periods. The mean score of the intervention group was significantly lower than that of the control group which received the handbook. This indicates that the implementation of the "Teenagers Don't Drink" application to mitigate adolescent alcohol consumption enhanced parental oversight about the drinking behavior of the intervention group. This may have resulted from the "Teenagers Don't Drink" application promoting support from individuals close to teenagers in helping them minimize alcohol consumption. This emphasizes the significance of parental control by communication about alcohol drinking with their children and the necessity of serving as a role model.[6, 8, 30] The application provides alcohol information, including insights into child development and effective communication strategies during this developmental phase. Informed parents are more inclined to engage in discussions with their children and influence their child's alcohol consumption. A greater understanding of the detrimental effects of alcohol by the parents fosters an enhanced parent-child relationship during the adolescence period.[29] This aligns with previous studies indicating that increased parental control correlates with reduced adolescent drinking.[8, 31]

The findings of the study indicated that the use of the "Teenagers Don't Drink" application increased the intervention group's intention to abstain from alcohol consumption. The intervention group refrained from consuming alcohol because they used the "Teenagers Don't Drink" application. Engaging in this activity was the key determinant of an individual's optimal behavior. An individual's behavior aligns with their decision not to drink. It is believed that two primary factors, their attitude toward the activity and the impact of those in their social circle, greatly influenced this attitude-behavioral relationship.[28] The study findings indicated that the intervention group exhibited negative attitudes towards alcohol consumption and their parents exerted significant control over their teenagers' alcohol use. As a result, the intervention group exhibited elevated levels of intention to abstain from alcohol consumption.

The mobile application "Teenagers Don't Drink" incorporated the engagement of adolescents, families, schools, and community contexts, which may elucidate its potential efficacy, as alcohol prevention messages were reinforced across various social environments rather than being

conveyed exclusively at the individual level. The intervention focused on how parents can influence the youth drinking behaviors and attitudes towards alcohol. These behaviors resulted in positive outcomes. School interventions aimed to improve the adolescents' attitudes, knowledge, and social skills related to alcohol consumption, along with implementing prevention strategies. Adolescents possessing robust social and life skills exhibited a lower propensity for alcohol consumption compared to their peers lacking these skills.[9, 10] Furthermore, teenagers who were informed about alcohol use demonstrated negative attitudes towards drinking. Interventions within the community emphasize religious, social, and environmental aspects. The social, environmental, and legal factors influencing alcohol use affect youth drinking behavior.[30] The findings from the Communities That Care in Australia indicated that organizing diverse activities effectively reduced adolescent alcohol consumption by encouraging delays in drinking. Consequently, collaborative interventions emerged as a crucial element contributing to the success of adolescent alcohol prevention efforts.[32] The collaboration of sub-district hospitals with community entities such as temples, schools, and relevant organizations exemplified extensive social support networks. The process began by drawing lessons from the community and progressed to evaluating a program designed to prevent adolescent alcohol consumption. Acknowledgment of the issue's importance and the necessity for prevention and resolution fostered collaboration in the operation, promotion, and support of effective initiatives.

The study's strength was enhanced by the involvement of all community members in the mobile application "Teenagers Don't Drink," which increased their self-awareness regarding their role in preventing alcohol consumption among adolescents. The study limitations included the inability of all mobile phones to download the program. While downloading was possible, it required a significant amount of time. Furthermore, mobile phone memory and technology varied by model. In addition, some mobile phone networks exhibited insufficient Internet coverage. The one-month follow-up period may be insufficient to identify persistent or long-term behavioral modifications. The restricted sample size from a particular geographic region may limit the generalizability of the findings to other adolescent populations. Finally, some baseline demographic disparities between the intervention and comparison groups (e.g., age and religion) were identified, reflecting a common methodological challenge in cluster-based sampling that could have influenced the results.

Conclusion

The findings of the present study indicated the positive effect of using the "Teenagers Don't Drink" application in promoting alcohol use prevention among adolescents by involving families, educational institutions, and community stakeholders. The application seems to improve the adolescents' understanding of alcohol-related hazards, pertinent legislation, and specific life skills that may support informed decision-making and resilience against alcohol consumption. Nonetheless, these findings should be approached with caution, considering the limitations of the study. Further research is necessary to evaluate the application's impact with larger and more diverse populations, extended follow-up durations to determine the durability of behavioral changes, and more rigorous methodologies such as randomized controlled trials. Additional research into methods for enhancing baseline equivalence between study groups and evaluating the intervention across diverse settings may further reinforce the overall evidence.

Acknowledgments

We would like to thank to the participants, their families, and their communities.

Authors' Contribution

SS, PM, and AA formulated the conceptual framework and methodology. AA, SJ, and PJ contributed to the literature review. SS, SJ, and PJ developed the program/intervention. SS, PK, and YM conducted data collection, processing, and interpretation. SS and PM authored the initial draft of the manuscript. All authors conducted a comprehensive review and revision of the manuscript and endorsed the final version for publication. The corresponding author affirms that all individuals listed fulfill the authorship criteria and that no eligible contributors have been omitted.

Funding Source

This research received funding from the Center for Alcohol Studies, Thailand (Grant number: 61-02029-0061)

Conflict of Interest

None declared.

Declaration on the use of AI

The authors declare that no artificial intelligence tools were used in the preparation of this manuscript.

References

1 National Statistical Office. Statistical Yearbook Thailand 2025, Summary of smoking and drinking behaviors among Thai People. Bangkok, Thailand: National Statistical Office; 2025. [In Thai]
2 Lees B, Meredith LR, Kirkland AE, et al. Effect of alcohol use on the adolescent brain and behavior. Pharmacology Biochemistry and Behavior. 2020;192:172906.
3 Assanangkornchai S, Li J, McNeil E, et al. Clusters of alcohol and drug use and other health-risk behaviors among Thai secondary school students: A latent class analysis. BMC Public Health. 2018;18:1272.
4 Llamosas-Falcón L, Hasan OS, Shuper PA, et al. A systematic review on the impact of alcohol use on sexually transmitted infections. International Journal of Alcohol and Drug Research. 2023;11:3-12.
5 Sanchez-Puertas R, Vaca-Gallegos S, Lopez-Nunez C, et al. Prevention of alcohol consumption programs for children and youth: A narrative and critical review of recent publications. Frontiers in Psychology. 2022;13:821867.
6 Hurley E, Dietrich T, Rundle-Thiele S. A systematic review of parent based programs to prevent or reduce alcohol consumption in adolescents. BMC Public Health. 2019;19:1451.
7 Ladis BA, Macgowan M, Thomlison B, et al. Parent-focused preventive interventions for youth substance use and problem behaviors: A systematic review. Research on Social Work Practice. 2019;29:420-42.
8 Fisher S, Hsu WW, Zapolski TC, et al. The role of parents in early adolescent substance use: A longitudinal investigation. The Journal of Early Adolescence. 2025;45:746-68.
9 Alarcó-Rosales R, Sánchez-SanSegundo M, Ferrer-Cascales R, et al. Effects of a school-based intervention for preventing substance use among adolescents at risk of academic failure: A pilot study of the reasoning and rehabilitation V2 program. Healthcare. 2021;9:1488.
10 Tomokawa S, Miyake K, Akiyama T, et al. Effective school-based preventive interventions for alcohol use in Africa: a systematic review. African Health Sciences. 2020;20:1397-406.
11 De Carlos Oliveira M, Mendes-Sousa M, Soares-Santos LE, et al. Community-Based Environmental Interventions to Prevent Alcohol Use in Adolescents: A Systematic Review. Drug and Alcohol Review. 2025;44:2041-56.
12 Duch M, Gervilla E, Juan M, et al. Effectiveness of a community-based intervention to increase supermarket

vendors' compliance with age restrictions for alcohol sales in Spain: pilot study. International Journal of Environmental Research and Public Health. 2020;17:5991.
13 Jansen SC, Haveman-Nies A, Bos-Oude Groeniger I, et al. Effectiveness of a Dutch community-based alcohol intervention: Changes in alcohol use of adolescents after 1 and 5 years. Drug and Alcohol Dependence. 2016;159:125-32.
14 Faul F, Erdfelder E, Lang AG, et al. G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behavior Research Methods. 2007;39:175-91.
15 Bailey KA, Baker AL, Webster RA, et al. Pilot randomized controlled trial of a brief alcohol intervention group for adolescents. Drug and Alcohol Review. 2004;23:157-66.
16 Babor TF, Higgins-Biddle JC, Saunders JB, et al. AUDIT: The Alcohol Use Disorders Identification Test: Guidelines for use in primary care. 2nd ed. Geneva: World Health Organization, Department of Mental Health and Substance Dependence; 2001.
17 Silpakit P, Kittirattanapaiboon P. AUDIT: Alcohol problem assessment from: Guidelines for Primary Healthcare Facilities. 2nd ed. Thailand: Department of Mental Health, Ministry of Public Health; 2026. [Cited 15 July 2026]. Available from: https://dmh-elibrary.org/items/show/1209?utm_source=chatgpt.com
18 Reinert DF, Allen JP. The alcohol use disorders identification test (AUDIT): a review of recent research. Alcoholism, Clinical and Experimental Research. 2002;26:272-9.
19 Reinert DF, Allen JP. The alcohol use disorders identification test: an update of research findings. Alcoholism, Clinical and experimental research. 2007;31:185-99.
20 Srirattayawong T, Lirtmunlikaporn S, Unahalekhaka A. Development of a Community Participative Program for Alcohol Drinking Prevention Among Secondary School Students. Nursing Journal. 2012;39:46-63. [In Thai]
21 Pimathai C, Homsin P, Srisuriyawet R. Factors Related to Hazardous Drinking Among Male Vocational Students in Sisaket Province. Thai Red Cross Nursing Journal. 2021;14:170-84. [In Thai]
22 Young RM, Hasking PA, Oei TP, et al. Validation of the drinking refusal self-efficacy questionnaire--revised in an adolescent sample (DRSEQ-RA). Addictive Behaviors. 2007;32:862-8.
23 Hamchayad A, Homsin P, Srisuriyawate R. Factors related to alcohol drinking among female undergraduate students in Chanthaburi province. Journal of Public Health Nursing. 2010;24:21-38. [In Thai]
24 Thepnoo J. Factors Affecting Alcohol Beverage Intake Among High School Students, Phatthalung Province. [Thesis]. Thailand: Mahidol University; 1997. [In Thai]
25 Kantawong E, Lirmunlikaporn S, Unahalekhaka A. Development of Alcohol Drinking Prevention among Secondary School Students Using School Participation. Nursing Journal. 2015;42:135-46. [In Thai]
26 Hides L, Quinn C, Cockshaw W, et al. Efficacy and outcomes of a mobile app targeting alcohol use in young people. Addictive Behaviors. 2018;77:89-95.
27 Kapitány-Fövény M, Vagdalt E, Ruttkay Z, et al. Potential of an Interactive Drug Prevention Mobile Phone App (Once Upon a High): Questionnaire Study Among Students. JMIR Serious Games. 2018;6:e19.
28 Ajzen I. The theory of planned behavior: frequently asked questions. Hum Behav Emerg Technol. 2020;2:314-24.
29 Gázquez Linares JJ, Barragán Martín AB, Molero Jurado MD, et al. Perception of parental attitudes and self-efficacy in refusing alcohol drinking and smoking by Spanish adolescents: A cross-sectional study. International Journal

of Environmental Research and Public Health. 2023;20:808.
30 Sadeghi S, Sabzi Khoshnami M, Imani A, et al. Preventing adolescent substance use disorder: a systematic review of community-based practices and social work implications. Journal of Substance Use. 2025;30:361–72.
31 McCann M, Perra O, McLaughlin A, et al. Assessing elements of a family approach to reduce adolescent drinking frequency: Parent–adolescent relationship, knowledge management and keeping secrets. Addiction. 2016;111:843-53.
32 Toumbourou JW, Rowland B, Williams J, et al. Community intervention to prevent adolescent health behavior problems: Evaluation of communities that care in Australia. Health Psychology. 2019;38:536-44.