



School-related Factors of Thai Adolescents Alcohol and Cigarette Use

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ABSTRACT

In Thailand, the early initiations of alcohol and cigarettes use were found to be concentrated in urbanized students. This study investigated school-related factors leading to initiations of alcohol and cigarette use among 8th grade students in Bangkok.

268 Cross-sectional surveys were conducted on the convenience samples of 803 eighth graders in three public schools in Bangkok, Thailand. The demographic data, academic performance, absenteeism, student-school relationship, alcohol/cigarette use, and intention to use were assessed. Data was analyzed using Chi-square, Pearson correlation, and T-test. Thirty-three percent of 8th graders reported lifetime use of alcohol compared to nine percent for use of cigarettes. Males

were more engaged in cigarettes and alcohol use. Findings provide supports for an inverse relationship between academic achievement, student-school bonding, and alcohol/cigarette use (lifetime, past 30 days, last 7 days) including the likelihood of use in the next two years. Direct relationship was found between absenteeism, alcohol/cigarette expectancies, alcohol/cigarette use, and intention to use. This study shows that school factors such as falling school bonding, school attendance, academic achievement, and expectancies can be red flags signaling early alcohol and cigarettes use.

Keywords: secondary school, absenteeism, drug prevention, alcohol use, cigarette use



Introduction

Alcohol and cigarettes represent the substances adolescents often use as a gateway to other risk taking behaviors. Thai adolescents at younger ages initiated use of alcohol and cigarettes in the past decade¹⁻⁴ with median ages of 13-14.¹ The concentration of alcohol and cigarette use was found in urban adolescents¹. The three most popular alcoholic beverages used by Thai adolescents were beer, wine coolers, and hard liquor.³ Surveys conducted in current adult drinkers found that 47.9% started drinking alcohol at age 15 and among these 2.8% even started as young as age 11.⁵ Adolescents were 30% of the Thai drinking population, and males were 8 times higher than females to use it.⁴ For tobacco, the prevalence was 10% among adolescents aged 13 to 15, with 6.7% indicated that they may use cigarettes in the next year.⁴ Male adolescent smokers was 17.9%, whereas female adolescent smokers was 3.9%.⁴ Among this population, 20% started smoking before the age of 10.

Adverse consequences of early consumption of alcohol and smoking cigarettes have become adolescent health issues. A direct positive relationship between frequency and quantity of alcohol intake and high blood pressure was found among heavy drinker adolescents and adolescents aged 13-18.⁶ Longitudinal studies revealed that adolescents

who started drinking at an early age were diagnosed at age 20 as alcohol dependent and alcohol abusers.⁷⁻⁸ Adolescents who smoke regularly were addicted to nicotine, and continued to smoke throughout adulthood.⁹ The short-term effects on the health of youth smokers include lower level of lung function and physical performance, more frequent shortness of breath, and higher resting heart rates than teens who don't smoke.¹⁰ Smoking at early age was found to increase illnesses and risk of heart disease, lung cancer, and stroke.⁹ In addition, maintaining healthy lifestyles from early age with no or moderate smoking/drinking was found to lower risks of cardiovascular disease in middle age.¹¹

Previous studies provide support for influence of personal and social environment factors on adolescents' substance use. Although longitudinal studies focused on adolescent alcohol initiation found little evidence to support the effect of gender difference,¹² male adolescents were more associated with alcohol use^{1,3} and cigarette smoking^{2,4} at cross-section. Research conducted in Western countries indicated that a positive relationship with school is an important protective factor against drinking and smoking¹³⁻¹⁴ and the likelihood of starting to drink alcohol in the near future.¹⁵ On the other hand, close friends and older siblings who smoke, have heavy alcoholic consumption, positive belief about



tobacco, and low self-esteem were risk factors of smoking.¹⁶ A review of literature in Thailand revealed numerous reports about behavior and patterns of adolescents drinking and smoking in general but the studies were less specific to school factors. No study has been conducted that leads to understanding a early adolescent's rejection of school and its impact on initiating use of alcohol and cigarettes.

This study investigated the association between school factors (students' relationship to school, academic achievement, and absenteeism), socioeconomic status (SES) including family income, parental married status, alcohol and cigarette use expectancy, substance use including lifetime use, current use, recent use, and likelihood of using alcohol and cigarettes in the next 2 years among eighth grade students who lived in Bangkok, Thailand.

Methods

Procedure

This cross-sectional survey was conducted on a convenience sample of 803 Thai eighth grade students. Data was collected in November and December 2009. Precautions were taken in each school to protect the anonymity and confidentiality of individual students and their surveys. Students were asked to complete the self-report on cigarette

and alcohol use, and the demographic-academic data surveys in their classroom. All questionnaires were included in this analysis (100% response rate). Approval for the study was obtained from the Children and Youth Institutional Review Board of the University at Buffalo, the State University of New York. In Thailand, parents allow school principals to make decisions for students to participate in studies conducted at schools. In addition to the informed consent given by school principals, assent was obtained from each student.

Participants

Participants were eighth grade students from three urban public schools located in Bangkok, Thailand. Researchers asked school administrators to select 200-300 eighth grade students from each school, for a total of 803. Eighth grade class size in Thai school is usually around 50 students. A convenience sample of 203 students was selected from school one, and samples of 300 students each were selected from schools two and three. Based on Cohen,¹⁷ the sample size of at least 783 was required to provide 80% power for detecting a significant difference of small correlation ($r = .10$, $p < .05$). This age group was chosen because the findings from the Thai Youth Risk Behavior Survey indicated the median ages of 13-14 when



youth first initiate alcohol and cigarette use¹. In general, students in Thai public schools are similar in socioeconomic status, that is, they are primarily students from low- and middle-income families. Each school also features a similar classroom arrangement (tracking system), in which high, moderate, and low academic achieving students are grouped together and each group is placed in different classes.

Measures

Three questionnaires were used for data collection of 1) personal characteristics, including academic performance, 2) student-school relationship, and 3) alcohol-cigarette expectancy, use, and intention to use.

1. The Personal Characteristics data questionnaire. The self-reported survey comprises 11 items measuring age, gender, GPA, school absent, parents' marital status, and family income.

2. The student-school relationship questionnaire. The 16-item Thai-Student Identification Assessment Measure (T-SIAM) was used to assess student-school relationship. Identification denotes a form of attachment or the ties that have formed between an individual and an institution such as school. It describes the extent to which a student has bonded with school and has incorporated it as a significant part of his or her self-concept and

lifestyle.¹⁸ Students were asked to read short statements measuring academic engagement, belonging, discipline and fairness, liking school, extent of student voice in affairs, and teacher support, and to rate their agreement on four-point Likert's scale (1 = strongly agree, 2 = agree, 3 = disagree, and 4 = strongly disagree). The total score range is 40-160. A higher score on the scale would reflect a positive relationship to school. The original questionnaire was developed in Tennessee¹⁸ and translated to Thai in 2009¹⁸ according to Brislin's model. The reliability testing demonstrated good psychometric properties. Internal consistency reliability (Cronbach's alpha) were .78-.84^{14, 18, 19-20} and .74 in this study. Confirmations of factor structure with eighth graders to high school students found significant negative correlations with substance abuse.^{14,18, 20-21} The instrument took an average of 15 minutes to complete.

3. The 12-item Alcohol and Cigarette questionnaire assessed lifetime use (2 items), use in the last month (2 items), use in the last week (2 items), intention to use in the next 2 years (2 items), and positive/negative expectancies (4 items) toward alcohol and cigarettes. Response options for alcohol/cigarette use was 1 = "yes" or 0 = "no". Respondents indicated their level of intention to drink in the next two years on three options 0 = "definitely won't try", 1 = "might try",

and 2 = “will smoke/drink a lot”. Likewise, respondents indicated their agreement on four options 1-4 (strongly disagree-strongly agree) towards positive expectancy “Do you agree that smoking/drinking is cool and fun?” and negative expectancy “Do you think that smoking cigarettes would mess up your plans when you are older?” This self-reported questionnaire was developed based on review literature related to early adolescent drug and substance use and took an average of 5 minutes to complete.

Data Analysis

Data were analyzed using Predictive Analytics Software, version 18. Data were assessed for missing values. The response rate was 99%. The Pearson’s correlation coefficient was used to test and describe the relationships between lifetime use, recent use, current use, intention to use in the next two years, and expectancies toward alcohol and cigarette use. Descriptive statistics were calculated to describe the characteristics including parent’s marital status and family income of students in this study. School bonding scores were obtained by summing all items so that higher scores indicated a more positive relationship to school. A T-test statistic was used to compare the mean score differences of school factors (school bonding score, GPA, and absenteeism) between male and female genders.

Results

The average age of eighth grade participants in this study was 13.5 (SD = 0.5), and 58.6% were males. The majority of participants (56.8%) had GPA 3.0 to 4.0 and 32.2% had GPA between 2.0 to 3.0. The average GPA was 3.0 (SD=.74). Male students were found to have higher scores than female students on average GPA (3.21, SD = 0.68 VS 2.87, SD = 0.78), and number of days absent from school (3.0, SD = 2.36 VS 2.6, SD = 2.20). Regarding parental education, 55.2% of fathers and 53.6% of mothers had high school or less than high school education, 44.8% of fathers and 46.4% of mothers had a four-year college or a graduate degree. The majority of students were from an upper middle income (64.5%) group and their parents were married (76.3%).

Alcohol/Cigarette expectancies. Female students were found to have significantly higher scores of expectancies toward cigarette and alcohol than their male counterparts (Table 1). The majority of students disagreed to strongly disagreed with the positive effect and agreed to strongly agreed with negative effect of cigarette and alcohol use. Total mean score expectancies of smoking and drinking was 2.57 (SD = 0.98) and 3.09 (SD = 1.2) for both genders. Female students were found to have significantly higher expectancies score on cigarettes use than male students (M = 2.67, SD = 1.07 vs. M = 2.49, SD = 0.90, $p < .05$).



The alcohol expectancies score of female was also higher than male students but did not reach significant difference.

Students’ relationship with school. Male students were found to have higher school bonding scores than female students ($t = 2.23$, $p < .05$). The score range was 29-62, and the

mean school bonding score for both genders was 46.81 with a SD of 4.86 (male = 47.14, SD = 4.93 vs. female = 46.36, SD = 4.79).

The effect size measure showed that the difference between the gender groups was small ($d = 0.296$).

Table 1 Mean Scores Comparisons of GPA, Cigarette/alcohol Expectancies and School Bonding by Genders (N=800).

Variable	Mean (SD)	T-test
Academic performance (GPA)		
Male	3.21 (.68)	6.07 **
Female	2.87 (.78)	
School absences (day)		
Male	3.01 (2.36)	2.51 **
Female	2.60 (2.20)	
Cigarette use expectancies		
Male	2.49 (.90)	-2.51 **
Female	2.67 (1.07)	
Alcohol use expectancies		
Male	3.01 (1.26)	- .04
Female	3.09 (1.16)	
Student-school relationship		
Male	47.14 (4.93)	2.23 *
Female	46.36 (4.79)	

* $p < .05$, ** $p < .01$

Alcohol and cigarette use. Eighth grade students in this study who reported ever smoking cigarette was 9%, smoked in the past month was 2.1%, smoked in the past week was 1.7%, and 9.5% might smoke

cigarettes in the next 2 years. Students who reported ever drinking alcohol at least once was 32.7%, drank in the past month was 10.7%, drank in the past week was 4.0%, and 33% might drink in the next 2 years.

Table 2 shows numbers of students reported drinking, smoking, and their agreement toward alcohol and cigarette use expectancies by genders. Male students were reported to be more engaged in drinking and smoking than female students.

Table 2 Alcohol and Cigarettes Use, Intention to Use, and Expectancies by Gender.

Variable	Cigarette Use <i>n</i> (%)			Alcohol Use <i>n</i> (%)		
	Female	Male	Total	Female	Male	Total
Lifetime use	N = 798			N = 800		
Yes	49 (6.1)	23 (2.9)	72 (9.0)	114 (14.2)	148 (18.5)	262 (32.7)
No	281 (35.2)	445 (55.8)	726 (91.0)	217 (27.2)	321 (40.1)	538 (67.3)
Use in past 30 days	N = 800			N = 800		
Yes	14 (1.7)	3 (.4)	17 (2.1)	40 (5.0)	291 (36.4)	331 (41.4)
No	316 (39.8)	466 (58.1)	783 (97.9)	46 (5.7)	423 (52.9)	469 (58.6)
Use in past 7 days	N = 800			N = 800		
Yes	12 (1.5)	2 (.2)	14 (1.7)	17 (2.1)	15 (1.9)	32 (4.0)
No	318 (39.9)	467 (58.4)	786 (98.3)	314 (39.2)	454 (56.8)	768 (96.0)
Will use in the next 2 years	N = 800			N = 802		
Will try a lot	9 (1.1)	5 (.6)	14 (1.7)	16 (2.3)	30 (3.7)	48 (6.0)
Might try	42 (5.2)	20 (2.6)	62 (7.8)	104 (13.0)	161 (20.0)	265 (33.0)
Won't try	279 (35.0)	444 (55.5)	724 (90.5)	211 (26.3)	278 (34.7)	489 (61.0)
Mess up your plans	N = 799			N = 800		
Strongly agree	266 (33.3)	393 (49.2)	659 (82.5)	219 (27.3)	303 (37.9)	522 (65.2)
Agree	46 (5.8)	53 (6.6)	99 (12.4)	76 (9.4)	139 (17.4)	215 (26.8)
Disagree	6 (.75)	6 (.75)	12 (1.5)	18 (2.3)	10 (1.2)	28 (3.5)
Strongly disagree	12 (1.5)	17 (2.1)	29 (3.6)	18 (2.2)	17 (2.2)	35 (4.4)

**Table 2** Alcohol and Cigarettes Use, Intention to Use, and Expectancies by Gender (cont.).

Variable	Cigarette Use <i>n</i> (%)			Alcohol Use <i>n</i> (%)		
	Female	Male	Total	Female	Male	Total
Cool and fun	N = 800			N = 800		
Strongly agree	8 (1.0)	4 (.5)	12 (1.5)	9 (1.1)	8 (1.0)	17 (2.1)
Agree	19 (2.4)	7 (.9)	26 (3.2)	29 (3.6)	46 (5.8)	75 (9.4)
Disagree	67 (8.4)	90 (11.4)	158 (19.8)	110 (13.7)	184 (23.0)	294 (36.7)
Strongly disagree	236 (29.5)	368 (46.0)	604 (75.5)	183 (22.9)	231 (28.9)	414 (51.8)

Alcohol and cigarette use and intention to use had negative relationships with academic achievement (GPA) and student-school relationship. Its positive associations with school absence and outcomes expectancies were supported as shown in Table 3. Among these variables, the strongest correlations were found between expectancies and likelihood of use of cigarettes ($r = 0.36$) and alcohol use ($r = 0.47$) in the next 2 years. Outcomes expectancy was significantly positive related with lifetime use (0.24 vs. 0.39), use in the past 30 days (0.15 vs. 0.27), and use in the past 7 days (0.09 vs. 0.23) of cigarettes and alcohol, respectively.

The weakest associations were found between absenteeism and the uses in the

past 7 days of cigarette ($r = 0.05$) and alcohol ($r = 0.07$). Absenteeism was significantly positive related with lifetime use (0.08 vs. 0.20), use in the past 30 days (0.06 vs. 0.07), and likelihood of use in the next 2 years (0.11 vs. 0.10) of cigarettes and alcohol, respectively. GPA was significant negative related with lifetime use (-0.21 vs. -0.22), use in the past 7 days (-0.08 vs. -0.11), and likelihood of use in the next 2 years (-0.21 vs. -0.21) of cigarettes and alcohol, respectively. Student-school bonding was significantly negative related with cigarettes and alcohol lifetime use (-0.12 vs. -0.12), use in the past 30 days (-0.12 vs. -0.12), use in the past 7 days (-0.07 vs. -0.08), and likelihood of use in the next 2 years (-0.15 vs. -0.18).



Table 3 Correlations Among GPA, School Relationship, Absenteeism, Expectancies by Alcohol And Cigarette Use.

Variables	Cigarettes				Alcohol			
	Life time	30 days	7 days	next 2 yrs	Life time	30 days	7 days	next 2 yrs
GPA	-0.21**	-0.05	-0.08*	-0.21**	-0.22**	0.15**	-0.11**	-0.21**
School relat.	-0.12**	-0.12**	-0.07*	-0.15**	-0.13**	-0.12**	-0.08*	-0.18**
Absenteeism	0.08*	0.06**	0.05*	0.11**	0.20**	0.11**	0.07*	0.10**
Expectancies	0.24**	0.15**	0.09*	0.36**	0.39**	0.27**	0.23**	0.47**

* $p < .05$, ** $p < .01$

Discussion

Improving adolescent health and well-being is a complex responsibility that requires new approaches and working with a variety of partners. School bonding is an internationally recognized concept that is receiving increased attention among educators and healthcare professionals. This study is the first that explored the association between the students-school relationship or school bonding and other school factors with alcohol/cigarette use and future use intentions in Thailand. Findings provides evidence that students with a low school bonding score were more likely to report lifetime use, current use, and future use of cigarette and alcohol in the next 2 years. There were significant associations between academic performance, school attendance, outcome expectancies and cigarettes - alcohol use, and intention to use. The negative relationship between

GPA and substance use found in this study was similar to previous findings.^{13,21} Poor school performance was the risk factor of smoking and drinking among adolescents who lived in Bangkok.¹ Previous studies¹⁶ revealed a positive relationship between expectancies on cigarettes and alcohol use, absenteeism and substance use as found in this study. Studies conducted in Western countries provide supports for the significant relationship between school bonding and the social adjustment and development of adolescents. School bonding was found to protect adolescents from serious behavior and health problems. Students who are well-adjusted, engaged, and feel connected to the school to which they belong are less likely to be involved in drinking¹³ and smoking.²²

Policy makers and administrators need to understand that health and education are closely intertwined and that school health



programs need to be developed to provide a seamless support for health as well as education. The primary mission of schools is to educate students, at the same time schools have a powerful role in shaping the health and well-being of young adolescents. School personnel are expected to guide emotional, relational, and behavioral development of adolescents in school settings. This study provides evidence-based suggestions for helping schools target high-risk students. By doing so, preventive actions can be taken to avoid problematic behavior.

Conclusions

The findings from this study support the importance of relationships with school, academic achievement, school attendance, substance use expectancy with alcohol and cigarette use among early adolescents. Adolescence is a unique period of the life cycle that marks the development of attitudes and health practices. Alcohol and cigarette use expectations and the urge to engage in experimentation with alcohol and cigarettes in this age group can lead to other risky behaviors. Screening and assessing students that have a tendency to engage in alcohol and cigarette use is essential, and thus can be

the red flag signaling students prone to use alcohol and cigarettes. In addition, school-based interventions that teach correct knowledge and expectations of substance, improve academic achievement, lower school absent will in turn decrease risky behaviors.

Implications for practice

A recommendation from this study focuses on comprehensive school health programs which include health, physical education. In addition, students' relationships with school should be assessed regularly. This information can facilitate development of effective interventions that improve certain school aspects and sense of school membership. Studies in the United States revealed that student-school bonding could be advanced by developing social skills, social competence, and encouraging appropriate parenting practices.²⁰ Interventions that significantly delay early initiation of smoking and drinking have important implications on adolescents' health.

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ปัจจัยที่เกี่ยวข้องของด้านโรงเรียนกับการดื่มแอลกอฮอล์และสูบบุหรี่ของวัยรุ่นไทย

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บทคัดย่อ

วัยรุ่นไทยส่วนใหญ่โดยเฉพาะในสถานศึกษาที่ตั้งอยู่ในเมืองมักเริ่มใช้แอลกอฮอล์และบุหรี่ขณะเรียนชั้นมัธยมศึกษาปีที่ 2 การวิจัยนี้เพื่อสำรวจปัจจัยด้านโรงเรียนที่เกี่ยวข้องกับการเริ่มใช้แอลกอฮอล์และสูบบุหรี่ของนักเรียนมัธยมศึกษาปีที่ 2 จำนวน 803 คน จาก 3 โรงเรียนในจังหวัดกรุงเทพมหานคร ด้วยแบบสอบถามข้อมูลส่วนบุคคล เกรดเฉลี่ย การขาดเรียน ความรู้สึกที่มีต่อโรงเรียน ความคาดหวังจากผลของแอลกอฮอล์และบุหรี่ พฤติกรรมการใช้และความตั้งใจที่จะใช้แอลกอฮอล์และบุหรี่ในระยะ 2 ปี ทำการวิเคราะห์ค่าสหสัมพันธ์ของเพียร์สัน T-test และ Chi-square ผลการศึกษาพบว่านักเรียนร้อยละ 33 เคยดื่มแอลกอฮอล์ ร้อยละ 9 เคยสูบบุหรี่ นักเรียนชายมีการใช้แอลกอฮอล์และบุหรี่และตั้งใจที่จะใช้ในอนาคตมากกว่านักเรียนหญิง เกรดเฉลี่ย

ความรู้สึกรู้สึกผูกพันกับโรงเรียน มีความสัมพันธ์ทางลบกับ พฤติกรรมการใช้ (เคยใช้ ระยะ 30 วัน ระยะ 7 วัน) และความตั้งใจที่จะใช้แอลกอฮอล์และบุหรี่ในระยะ 2 ปี นอกจากนี้พบว่า การขาดเรียน ความคาดหวังจากผลของแอลกอฮอล์และบุหรี่ มีความสัมพันธ์ทางบวกกับพฤติกรรมการใช้ และความตั้งใจที่จะใช้แอลกอฮอล์และบุหรี่ในระยะ 2 ปี ปัจจัยด้าน ความผูกพันกับโรงเรียน การขาดเรียน ผลการเรียน และความคาดหวังในผลลัพธ์ของแอลกอฮอล์และบุหรี่ มีความสำคัญกับพฤติกรรมการใช้และความตั้งใจที่จะใช้แอลกอฮอล์และบุหรี่ของวัยรุ่นไทย

คำสำคัญ: โรงเรียนระดับมัธยมศึกษา การขาดเรียน การป้องกันสารเสพติด การดื่มแอลกอฮอล์ การสูบบุหรี่