ALCOHOL CONSUMPTION PATTERNS AMONG VOCATIONAL SCHOOL STUDENTS IN CENTRAL THAILAND

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Abstract. The objective of this study was to evaluate alcohol consumption patterns among vocational school students in central Thailand. We conducted a cross sectional study among 1,803 vocational students (80.4 % aged < 17 years) in central Thailand using a self-administered questionnaire which consisted of 2 parts: sociodemographic factors and alcohol drinking behavior from December 2007 to February 2008. Descriptive statistics, a chi-square test and multiple logistic regression were used to analyze the data. The results of this study showed 40.9% of male students and 20.9% of female students drank alcoholic beverages. Multiple logistic regression analysis revealed 2 factors were associated with alcohol consumption among male subjects: field of study (OR 1.5, 95% CI 1.1-2.0), and GPA (OR < 2 = 1.8; 95% CI 1.2-2.7; OR > 3 = 0.6; 95% CI 0.4-0.9). The three most popular venues for drinking were at parties (43.1%), at home/in the dormitory (34.9%) and in bars or saloons near the school (20.9%). Fifty-three point two percent of males drinks alcohol 1-2 times per month and time, 47% drank > 2 times per month. Nearly 78% of female students drink alcohol 1-2 times per month and 22% drink alcohol > 2 time per month. Forty point nine percent of male students consumed 1-2 drinks per time and 36% consumed more than 4 drinks per time. Fifty point four percent of females drank 2 drinks per month. One-third of male students said they engaged in binge drinking in a 2-week period and 14% of girls said they binge drank in a 2-week period. Alcohol consumption is a significant problem among Thai vocational school students. Measures for managing this problem are discussed.

Keywords: alcohol consumption patterns, vocational school students, central Thailand

INTRODUCTION

Alcohol consumption is common and binge drinking is becoming more prevalent in developing countries (WHO, 2004). The National Statistical Office of Thailand reported 29.3% of the Thai population aged 15 years and older consumed alcohol in 2007 (National Statistical Office, 2008). Among Thais aged 15-24, 25-59 and > 60 years, 21.9, 34.4 and 15.7% reported using alcohol, respectively (National Statistical Office, 2008). Alcohol consumption was reported by 33.4% of Thai vocational students (53.2% males, 7% females) (National Statistical Office, 2008). Alcohol consump-

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tion increased among all Thai adolescents between 1996 and 2006 (Bureau of Policy and Strategy, 2008). We conducted this study to better understand alcohol use and abuse among Thai vocational students to identify risk factors for alcohol use and abuse in this group and to plan preventive strategies.

MATERIALS AND METHODS

Study population and data collection techniques

A cross sectional study was conducted between December 2007 and February 2008 among vocational school students during their second year of study (equivalent to 11th grade) in central Thailand. A two-stage stratified sampling technique was used to select 1,803 students from 10 provinces in central Thailand. These provinces were randomly selected from 3 educational areas, not including Bangkok or its adjacent provinces. In each province, a mechanic-based and commerce-based vocational school were randomly selected from a list of schools obtained from the Provincial Education Office. At each school, 3 second year classes were selected by the teachers (approximately 200 subjects from each province). An anonymous self-administered questionnaire, which consisted of 2 parts, (socio-demographic factors and alcohol drinking behavior during the previous year) was completed during a regular class period with the help of well-trained research assistants. Alcohol intake was defined as drinking at least one standard drink of an alcoholic beverage during the stated time. A standard drink was defined as one can (330 cc) of beer, one glass (100 cc) of wine, or one small shot glass (30 cc) of whisky or spirits. Details of the study were explained and an informed consent form was obtained from all participants. The study was approved by the Ethics Committee for Research in Human Subjects of Mahidol University (Ref. No. Mu 2007-243).

Statistical analysis

For statistical evaluation, SPSS 17.0 statistical software (SPSS, Chicago, IL) was used. Results were obtained separately for male and female students and given as percentages, crude odds ratios, 95% confidence intervals (CI) of the odds ratio (OR) and *p*-values. Univariate analysis was performed using a chi-square test to differentiate between drinkers and non-drinkers for categorical variables. Multiple logistic regression was conducted by entering all variables assessed in relation to alcohol consumption to estimate the adjusted OR and the 95% CI of the OR, as measures of association. Statistical significance was considered at a p-value <0.05.

RESULTS

Univariate determinations of factors of interest associated with alcohol consumption are given in Table 1 and listed separately for male and female students. Alcohol consumption was common among males, involving nearly 40.6% of male students aged ≤17 years. Forty-two point two percent of male students and 23.2% of female students aged >17 years were alcohol drinkers. Having a mechanic-based study among males was a risk factor for alcohol consumption with an OR of 1.5 (95%CI 1.1-2.0). A lower grade point average (GPA) was significantly associated with alcohol consumption. A GPA ≤2.0 was associated with an OR of 1.9 (95% CI 1.3-2.8). A GPA >3.0 was associated with lower risk for alcohol consumption (OR 0.6; 95 % CI 0.5-0.9). Other significant factors included residence (OR private dormitory/rented house 1.8;

Table 1
Factors associated with alcohol consumption among study subjects.

Variables	Males					Females				
	No.drinkers /total	% drinkers	OR_c	95% CI	*p*-value	No. drinkers /total	% drinkers	OR_c	95% CI	*p*-value
Age group (yrs) (males = 920, females = 883)										
≤17[c]	293/721	40.6	1			149/728	20.5	1		
>17	84/199	42.2	1.1	0.8-1.5	0.690[a]	36/155	23.2	1.2	0.8-1.8	0.443[a]
Field of study (males = 920, females = 883)										
Commerce-based[c]	98/284	34.5	1			115/551	20.9	1		
Mechanic-based	279/636	43.9	1.5	1.1-2.0	0.008[a]	70/332	21.1	1.0	0.7-1.4	0.940[a]
Religion (males = 919, females = 882)										
Buddhist[c]	367/897	40.9	1			182/853	21.3	1		
Islam	6/15	40.0	0.9	0.3-2.9	0.943[a]	0/18	0			
Others	4/7	57.1	1.9	0.4-10.9	0.454[b]	3/11	27.3	1.4	0.3-5.8	0.710[b]
Residence (males = 917, females = 880)										
House/Apartment[c]	310/791	39.2	1			152/705	21.6	1		
School dormitory	0/4	0				3/28	10.7	0.4	0.1-1.5	0.168[a]
Private dormitory /Rented house	66/122	54.1	1.8	1.2-2.7	0.002[a]	30/147	20.4	0.9	0.6-1.5	0.757[a]
Cohabitants (males = 920, females = 883)										
Parent[c]	282/728	38.7	1			143/667	21.4	1		
Relative	52/111	46.8	1.4	0.9-2.1	0.103[a]	18/107	16.8	0.7	0.4-1.3	0.275[a]
Friend	33/60	55.0	1.9	1.1-3.4	0.013[a]	20/90	22.2	1.1	0.6-1.8	0.865[a]
Alone	10/21	47.6	1.4	0.6-3.7	0.411[a]	4/19	21.1	0.9	0.3-3.2	1.000[b]
Grade point average (males = 920, females = 883)										
>3.0	87/279	31.2	0.6	0.5-0.9	0.005[a]	72/378	19.0	0.9	0.6-1.3	0.661[a]
2.1-3.0[c]	201/485	41.4	1			75/369	20.3	1		
≤2.0	89/156	57.1	1.9	1.3-2.8	<0.001[a]	38/136	27.9	1.5	0.9-2.5	0.069[a]
Job for earning money (males = 906, females = 871)										
No[c]	250/597	41.9	1			116/585	19.8	1		
Yes	120/309	38.8	0.9	0.7-1.2	0.377[a]	66/286	23.1	1.2	0.9-1.7	0.268[a]
Family members with alcohol/drug problems (males = 784, females = 807)										
No[c]	193/465	41.5	1			96/427	22.5	1		
Yes	147/319	46.1	1.2	0.9-1.6	0.204[a]	77/380	20.3	0.9	0.6-1.3	0.443[a]

[a] Pearson's chi-square test; [b] Fisher's exact test; [c] reference gr; OR_c, crude odds ratio, CI, confidence interval

Table 2
Multiple logistic regression analysis of factors associated with alcohol consumption among study subjects.

Variables	OR_c	OR_{adj} [a]	95 % CI	*p*-value
Males				
Field of study				
Commerce-based	1	1		
Mechanic-based	1.5	1.5	1.1-2.0	0.021
Residence				
House/Apartment of family	1	1		
Private dormitory/Rented house	1.8	1.6	0.9-2.6	0.09
Cohabitants				
Parent	1			
Friend	1.9	1.5	0.8-2.8	0.202
Grade point average				
>3.0	0.6	0.6	0.4-0.9	0.005
2.1-3.0	1	1		
<2.0	1.9	1.8	1.2-2.7	0.007

[a]Field of study, residence, cohabitants and GPA were all entered into the model.
OR_c, crude odds ratio; OR_{adj}, adjusted odds ratio

95%CI 1.2-2.7), and cohabitants (OR friend 1.9; 95%CI 1.1-3.4). These factors were only significant for male students.

Table 2 shows the results of multivariate analysis of the independent factors found to have a significant relationship with alcohol consumption on univariate analysis for male students. Among males only mechanic-based studies (OR 1.5; 95% CI 1.1-2.0) and GPA (OR < 2.0 =1.8; 95% CI 1.2-2.7; OR > 3.0 = 0.6; 95% CI 0.4-0.9) were significantly associated with alcohol consumption.

Fifty-three point two percent of male students consumed alcohol 1-2 times per month and 18.7 % consumed alcohol 3-5 times per month. Seventy-seven point six percent of female students consumed alcohol 1-2 times per month and 11.2% consumed alcohol 3-5 times per month. Forty point nine percent of male students consumed 1-2 standard drinks per time. Fifty point four percent of female students consumed 1-2 standard drinks per time. One third of male students reported binge drinking during the previous 2 weeks. Nearly 14% of female students reported binge drinking during the previous 2 weeks. Nearly 30% of male students reported being intoxicated during the previous month. One tenth of female students reported being intoxicated during the previous month (Figs 1-4). Drinking patterns, such as lifetime drinking, drinking during the previous year, current drinking, binge drinking during the previous month and drinking until intoxication during the previous month were classified by gender and indicated a higher proportion in males than in females. The percentages of drinking were higher among older students. The top three venues for drinking were parties (43.1%), in the home/dormitory (34.9%) and in bars or saloons near school (20.9%) (Tables 3-4).

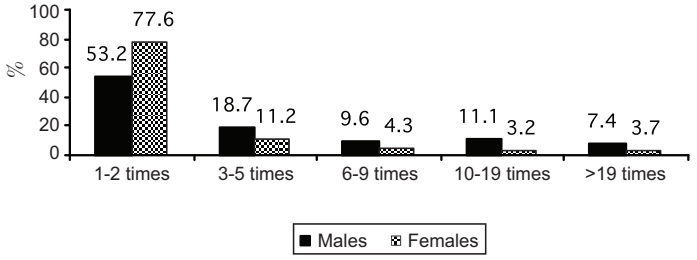

Fig 1–Frequency of alcohol consumption during the previous month.

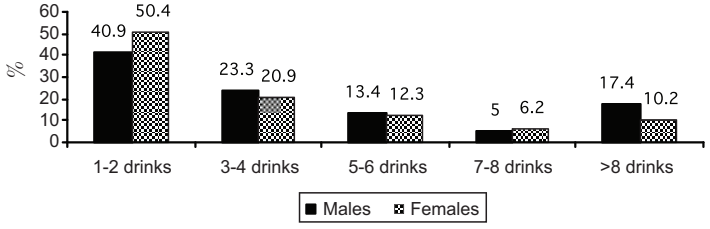

Fig 2–Quantity of alcohol consumed each time during the previous month.

Fig 3–Quantity of alcohol consumed per time when binge drinking during a 2 week period.

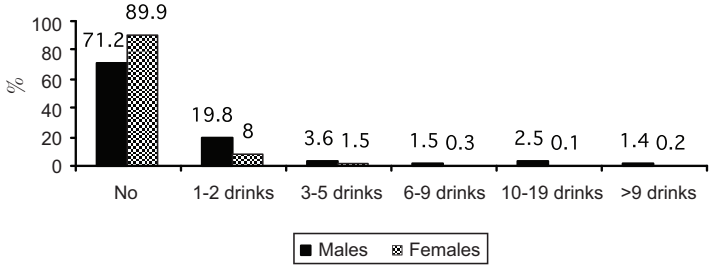

Fig 4–Quantity of alcohol consumed until intoxication during the previous month.

DISCUSSION

Of the 1,803 students polled, 562 (31.2%) were classified as alcohol drinkers. This percentage is close to 33.4% reported by the National Statistical Office (2008). Although the proportion of alcohol drinking among females in this study was significantly lower than male students (21% *vs* 41%), it is still high compared to ordinary female high school students at this age (Chaveepojnkamjorn and Pichainarong, 2009). Gender differences in alcoholic beverage use have been reported from other countries as well (Allison *et al*, 1999; Young *et al*, 2002; Takakura and Wake, 2003; Latimer *et al*, 2004; Chen *et al*, 2004; Poulin *et al*, 2005; Ramisetty-Mikler *et al*, 2006; Chaveepojnkamjorn and Pichainarong, 2007; Miller *et al*, 2007; Ozer and Fernald, 2008). A higher GPA and commerce-based studies were both associated with lower risk of alcohol consumption. The greater risk of alcohol consumption among those with a mechanic-based field of study is based on factors yet to be determined and may be rooted in cultural, educational or the socio-economic family background of the students, which were not explored here. Academic performance being inversely related to alcohol drinking habits has been reported elsewhere (Ritchey

Table 3
Prevalence of alcohol consumption by age of study subjects (%).

Drinking patterns	Age (yrs)				
	≤16	17	18	≥19	Total
Males					
Lifetime drinking	49.7	45.9	45.1	52.2	46.8
Drinking in the previous year	44.6	39.3	40.5	47.8	41.0
Current drinking (in the previous month)	34.5	29.9	31.4	43.5	31.7
Binge drinking in the previous month	11.9	14.9	17.7	32.6	15.7
Drinking until intoxication in the previous month	23.7	29.4	28.8	41.3	28.8
Females					
Lifetime drinking	27.5	25.2	26.1	27.5	25.9
Drinking in the previous year	20.7	20.4	21.7	27.5	21.0
Current drinking (in the previous month)	16.1	14.2	18.3	17.5	15.3
Binge drinking in the previous month	4.2	5.9	8.7	15.0	6.3
Drinking until intoxication in the previous month	9.3	8.6	13.9	22.5	10.1

Table 4
Drinking places of study subjects (%).

Drinking places	Males	Females	Total
Parties	36.7	53.3	43.1
House/dormitory	39.0	28.3	34.9
Bass near the school	22.6	18.1	20.9
Garden/field	1.7	0.3	1.1

et al, 2001; Paschall and Freisthler, 2003; Almodovar *et al*, 2006; Chaveepojnkamjorn and Pichainarong, 2007, 2011; Miller *et al*, 2007).

There were several limitations of this study. First, this was a cross sectional study; therefore, a temporal relationship between drinking and socio-demographic factors could not be established. A longitudinal study would be needed. Second, all data came from self-reports, which may have led to incorrect estimations of drinking (Wechsler *et al*, 2002; White *et al*, 2005).

Our findings indicate prevention of underage drinking is needed. More studies are needed to explore the cultural and socio-economic backgrounds of alcohol consumption among adolescents. Preventive measures should focus on students from disadvantaged socio-economic backgrounds. Positive peer pressure to avoid alcohol and organization of athletic activities may help, but it is unclear whether these activities alone address the root of alcohol drinking. Enforcement of under age drinking laws, increasing the penalties for drunk driving and reducing alcohol accessibility should be vigorously pursued. Alcohol abstention should be taught at home and in school. Laws regarding alcohol abuse should be strengthened and strictly enforced. Penalties, including the loss of driving privileges and expensive fines, should be imposed and enforced. More frequent police monitoring of driving habits utilizing roadside stops should be increased. Only when society is willing

to take these steps and put the full force of the law behind them, might we then see a decrease in alcohol related traffic fatalities and their catastrophic consequences.

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