

# Adolescent alcohol drinking in Hong Kong: a school-based survey

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## KEY MESSAGES

1. In Hong Kong secondary 1 to 6 students, the prevalence of current drinking (past 30 days) was 21.5% overall (22.2% in boys and 20.8% in girls).
2. The prevalence of binge drinking in the past 30 days was 7.5% overall (8.3% in boys and 6.7% in girls).
3. Among various risk factors of adolescent drinking, parental pro-drinking practices, lack of parental disapproval of adolescent drinking, and adolescent positive expectation of alcohol drinking seem to be modifiable and can be targeted in interventions.

4. Adolescent drinking was associated with depressive symptoms, poor academic performance, and sleep problems.

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## Introduction

Adolescent drinking is an important public health issue,<sup>1</sup> but little is known about the drinking pattern in Hong Kong adolescents. Effective control of underage drinking requires a thorough understanding of its risk factors and effects. We investigated the drinking pattern of Hong Kong secondary school students and identified risk factors associated with alcohol drinking.

## Methods

A total of 23 288 students from 45 randomly selected schools, including 43 local and 2 international schools from 5 districts in Hong Kong, participated in this survey from December 2012 to April 2013. An anonymous questionnaire was completed by students in classrooms. Data on sociodemographic characteristics, alcohol drinking, peer and co-residents' drinking, exposure to pro-drinking and anti-drinking messages, and health outcomes were collected. Standardised sampling and administrative procedures were adopted to ensure good data quality. Descriptive data were weighted by sex, age and grade distribution of students in Hong Kong, based on the Education Bureau Department 2012-13 student enrolment statistics. Chi-square test was applied to compare proportions by sex, age, or grade. Risk factors and health outcomes associated with adolescent drinking were investigated using multilevel logistic regression with adjustment of covariates and school clustering.

## Results

### Prevalence of alcohol drinking

Of the students, 54.1% (95% confidence interval [CI]=53.4%-54.7%) were ever alcohol drinkers, including experimental (tried once or a few times) [37.5%], ex-less-than-weekly (2.6%), ex-weekly (0.3%), and present drinkers (regardless of frequency) [13.6%] (Table 1). Ever drinking prevalence was similar in boys (54.0%) and girls (54.1%). The prevalence of current drinking (past 30 days) was 21.5% (95% CI=21.0%-22.1%) overall and non-significantly higher in boys (22.2%) than girls (20.8%).

Overall 13.6% of students drank monthly, 4.4% drank weekly, and 0.6% drank daily (Table 2). Boys had significantly higher prevalence of alcohol drinking than girls (monthly, 15.4% vs 11.8%; weekly, 5.2% vs 3.5%; daily, 0.7% vs 0.4%).

### Prevalence of harmful use of alcohol and alcohol dependence

Based on the Alcohol Use Disorder Identification Test, hazardous drinking was identified in 3.8% of students (boys 4.0%, girls 3.7%), including 1.1% of students who were at risk of alcohol dependence (boys 1.3%, girls 1.0%). Binge drinking (5+ drinks in a row) in the past 30 days was reported by 7.5% of students overall, 8.3% in boys and 6.7% in girls. Among current drinkers, 32.2% reported binge drinking (boys 34.0%, girls 30.3%).

### Usual alcohol type consumed by adolescent drinkers

Beer was most commonly consumed by current drinkers (43.0%), followed by fruit wine (21.1%), wine (19.6), and others (6.7%) [Table 3].

### Environmental exposure to pro- and anti-alcohol messages

Half (48.1%) the students were exposed to pro-drinking messages in the past 30 days, and 6.2% had frequent exposures of 15-30 days. Frequently reported sources of exposure included television (40.3%), supermarket/convenient store (24.1%), advertising board/poster board (19.1%), printed materials (18.5%), and movies (11.6%). Exposure to anti-drinking messages in the past 30 days was reported by 46.1% of students, including 28.3% who were exposed for 1-4 days, 8.3% for 5-9 days, and 9.6% for ≥10 days.

### Risk factors of current drinking

#### Socio-demographic risk factors

Current drinking was associated with older age (adjusted odds ratio [AOR]=1.24 per year), medium (AOR=1.14) or high (AOR=1.61) perceived family affluence (vs low), private housing (AOR=1.11), (vs public rental housing), separated/divorced (AOR=1.32) or one or both parents died (AOR=1.37) (vs intact family). Students who were born in Mainland China were less likely (AOR=0.87) to be current drinkers (vs born in Hong Kong).

#### Environmental risk factors

Current drinking was associated with co-residing drinkers (AOR=1.19 per drinker increase), parental pro-drinking practices (AOR=1.23 per practice increase), seeing alcohol displays in shops (AOR=1.06 per day increase), drinking among good

TABLE 1. Prevalence of alcohol drinking in secondary 1 to 6 students by sex

Alcohol drinking	All		Boys		Girls	
	No.	% (95% CI)	No.	% (95% CI)	No.	% (95% CI)
Never	9718	45.9 (45.3-46.6)	5104	46.0 (45.0-46.9)	4614	45.8 (44.9-46.9)
Ever	11 890	54.1 (53.4-54.7)	6055	54.0 (53.1-55.0)	5835	54.2 (53.1-55.1)
Experimental	8227	37.5 (36.9-38.2)	3966	35.6 (34.7-36.5)	4262	39.5 (38.6-40.5)
Ex-less-than-weekly	582	2.6 (2.4-2.8)	352	3.1 (2.8-3.4)	230	2.0 (1.8-2.3)
Ex-weekly	73	0.33 (0.25-0.41)	47	0.37 (0.27-0.51)	26	0.24 (0.17-0.38)
Drink presently	3008	13.6 (13.1-14.1)	1691	14.9 (14.3-15.6)	1317	12.4 (11.6-12.9)
Current	4570	21.5 (21.0-22.1)	2441	22.2 (21.4-23.0)	2129	21.1 (20.0-21.6)

TABLE 2. Frequency of alcohol drinking in secondary 1 to 6 students by sex

Alcohol drinking	All		Boys		Girls	
	No.	% (95% CI)	No.	% (95% CI)	No.	% (95% CI)
I do not drink	13 070	61.3 (60.7-62.0)	6756	60.8 (59.9-61.7)	6314	61.9 (60.9-62.8)
Less than monthly	5671	25.0 (24.5-25.6)	2748	23.8 (23.0-24.6)	2923	26.3 (25.5-27.2)
Monthly	2855	13.6 (13.2-14.1)	1645	15.4 (14.7-16.1)	1210	11.8 (11.2-12.4)
1-3 days/month	1988	9.2 (8.8-9.6)	1092	10.1 (9.6-10.7)	896	8.3 (7.7-8.8)
Weekly	867	4.4 (4.1-4.7)	553	5.2 (4.8-5.7)	314	3.5 (3.2-4.9)
1-6 days/week	743	3.8 (3.6-4.1)	470	4.5 (4.1-4.9)	273	3.1 (2.8-4.5)
Daily	124	0.6 (0.5-0.7)	83	0.7 (0.6-0.9)	41	0.4 (0.3-0.6)

TABLE 3. Alcohol type usually consumed by current drinkers in secondary 1 to 6 students

	Alcohol type (No. [%] of participants)*						
	Fruit wine	Beer	Wine	Spirits	Chinese wine	Cocktail	Others
Total	921 (21.1)	1878 (43.0)	767 (19.6)	222 (4.5)	77 (1.5)	107 (3.5)	188 (6.7)
Boys	399 (18.3)	1085 (49.7)	390 (18.3)	129 (4.5)	43 (1.6)	42 (1.9)	110 (5.7)
Girls	522 (24.2)	793 (35.7)	377 (20.9)	93 (4.6)	34 (1.4)	65 (5.3)	78 (7.9)

\* Multiple answers were allowed

friends (AOR=10.58 for most/all vs none), and perceiving half/most/all of secondary students were drinkers (AOR=1.98 vs none/some).

### Personal risk factors

Current drinking was associated with positive expectations of alcohol drinking (AOR=1.08 per score increase), smoking (AOR=6.45), intention to drink when alcohol was offered by good friends (AOR=5.94), and perceiving alcohol displays in shops attractive (AOR=2.00). However, negative expectations of alcohol drinking (AOR=0.86 per score increase), and disapproval of adolescent drinking by father (AOR=0.59) and mother (AOR=0.66) (vs neutral attitudes) were protective against current drinking.

### Problems associated with drinking

A small proportion of adolescents (2.1%) reported behavioural problems caused by alcohol drinking in the past 12 months, including being punished by parents/guardians (1.0%), having sex without condom (0.8%), and having sex with condom (0.5%). Current drinking was associated with depressive symptoms (AOR=1.37), poor academic performance (AOR=1.16), and sleep problems (AOR=1.11).

### Discussion

The prevalence of current alcohol drinking and binge drinking was lower in our adolescents than their Western counterparts, for example, 32.3% of our secondary 6 adolescents were current drinkers compared with 50.7% in the US.<sup>1</sup> Both current and binge drinking were more prevalent in boys than girls, but the difference was significant only for binge drinking. Binge drinking is particularly harmful to health,<sup>2</sup> yet around 7% had binged in the past 30 days. Binge drinking during adolescence is likely to

persist into adulthood. Future alcohol intervention programmes may pay more attention to binge drinking.

Various sociodemographic, environmental, and personal risk factors of adolescent alcohol drinking were identified. Parental influence was evident through a higher socioeconomic status, drinking among family members, parental pro-drinking practices, and lack of disapproval of adolescent drinking. These suggest that parents should be targeted in adolescent alcohol prevention programmes to avoid pro-drinking practices and set clear rules against underage drinking. These programmes can also aim to modify adolescents' expectations of alcohol drinking by emphasising the potential harms such as depressive symptoms, poor academic performance, and sleep problems. The government can also educate the public about the harms of alcohol drinking through mass media campaigns and restrict the display of alcohol in retail stores.

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