Association of alcohol social media marketing with young adult drinking expectancies and behaviours: abridged secondary publication

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KEY MESSAGES

1. Exposure to alcohol social media marketing is associated with all past-month drinking behaviours and future drinking intentions.

2. Those who are male, university educated, and with lower monthly household income are more likely to be exposed to alcohol social media marketing.

3. Greater exposure to alcohol social media marketing is associated with higher positive drinking expectancies score.

4. Beliefs about positive outcomes of drinking mediate the association between exposure to alcohol social media marketing and drinking behaviours.

5. There is low public support for regulating digital alcohol marketing in this age group.

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Introduction

The negative health effects of excessive alcohol consumption are counterbalanced by positive images promulgated by alcohol industry marketing, particularly towards the youth. Exposure to alcohol advertising is associated with the uptake of drinking among the youth and development of brand allegiance.[1]

Social media disseminates user-generated content through posting, sharing, tagging, and liking content to their communities, thereby actively engaging the public to create and circulate content. Youth exposure to social media marketing (SMM) including direct business-to-consumer marketing (eg company Facebook pages) and consumer-to-consumer content (eg content sharing among friends) is associated with increased alcohol uptake. Such exposure highly influences expectancy, which is the perceived positive and negative outcomes of a certain behaviour. Alcohol-related expectancies are strongly associated with consumption levels and problem drinking among youths.[2]

Since 2008 in Hong Kong, elimination of wine and beer duties has resulted in increased promotion of alcohol products.[3] To reduce harmful drinking in young people, evidence-based interventions are needed. This study aims to determine the proportion of Hong Kong young adults who have been exposed to various types of alcohol SMM, the prevalence and types of their engagement in alcohol SMM, and the associations between alcohol SMM exposure and alcohol expectancies and drinking behaviours.

Methods

From June to August 2021, a telephone survey was conducted for 675 Chinese residents of Hong Kong aged 18 to 34 years by trained interviewers. The questionnaire collected respondents' socio-demographic and background data, exposure to traditional marketing and SSM for alcohol, past-month drinking behaviour and future drinking intention, alcohol-related expectancies, and attitudes around regulations.

The level of exposure to alcohol SMM was quantified by summing the past-month exposure to various alcohol SMM. Exposure above the interquartile range were classified as higher exposure. Backward elimination multivariable logistic regression analysis was conducted to identify factors associated with past-month-drinking behaviours and future drinking intentions as well as drinking expectancies scores. The PROCESS macro (version 4.0) was used for mediation influence tests for non-continuous outcome variables.[4]

Results

A total of 334 men and 341 women were included. The sample was representative of the Hong Kong Census population of the same age group,[5] except that our sample had a higher proportion of university-educated individuals (51.9% vs 46.1%) and a lower proportion of employed individuals (69.2% vs 74.8%). The prevalence of lifetime drinker, past-year drinker, past-month binge drinker, and problem drinker (based on the CAGE questionnaire) was 80.1%, 53%,

12.4%, and 3.9%, respectively. More young adults were exposed to traditional marketing than SMM in the past month (71.6% vs 53%, P<0.001).

53% of respondents had been exposed to any alcohol SMM, with direct business-to-consumer SMM more than indirect consumer-to-consumer SMM (40.9% vs 32.1%). Those who were male, aged 25 to 29 years, university educated, and with lower household income were more likely to have been exposed to past-month alcohol SMM (Table 1).

Higher past-month exposure to alcohol SMM was associated with all drinking behaviours and future drinking intentions even after adjusting for confounding factors (Table 2). By contrast, exposure to traditional alcohol marketing was associated with past-month drinking and future intention to drink only. Higher educational attainment was associated with past-month drinking, past-month binge drinking, and future intention to drink. Those who were employed were less likely to binge drink or experience problem drinking, whereas those with a lower monthly household income were more likely to report problem drinking. Age was associated with weekly drinking only. Sex and marital status were not independent predictors for any drinking-related variables.

After adjusting for confounding factors, higher exposure to alcohol SMM was associated with a higher Chinese Drinking Expectancy Questionnaire (CDEQ) positive drinking expectancies score (Table 3). Higher exposure to alcohol SMM was independent predictor for higher scores of the Interpersonal Benefits, Increased Confidence, and Tension Reduction subscales of the CDEQ. CDEQ score of positive drinking expectancies was associated with mediation effects on all drinking behaviours except for future intention to get drunk. Similarly, the Interpersonal Benefits and Tension Reduction subscale scores mediated the effect of high exposure to alcohol SMM on past-month drinking (12.8% and 116.5%, respectively), weekly drinking (19.6% and 17.1%, respectively), binge drinking (8.5% and 8.15%, respectively), problematic drinking (7.0% and 9.5%, respectively), and future intention to drink (4.5% and 3.6%, respectively) but not future intention to get drunk. Increased confidence subscale score

TABLE 1. Association of past-month exposure to alcohol social media marketing (SMM) with sociodemographic factors (n=675)

Variable	All SMM			Direct SMM			Indirect SMM		
	Exposure, %	P value	Adjusted odds ratio (95% confidence interval)	Exposure, %	P value	Adjusted odds ratio (95% confidence interval)	Exposure, %	P value	Adjusted odds ratio (95% confidence interval)
All (n=675)	53.0	-	-	40.9	-	-	32.1	-	-
Sex		0.001			<0.001			0.217	
Female (n=341)	46.6		1.00	33.4		1.00	29.9		-
Male (n=334)	59.6		1.73 (1.25-2.40)†	48.5		1.84 (1.32-2.58)‡	34.4		-
Age, y		0.007			0.004			0.007	
30-34 (n=256)	45.3		1.00	32.8		1.00	25.4		1.00
25-29 (n=200)	57.5		1.57 (1.05-2.36)*	45.0		1.33 (0.88-2.03)	33.5		1.65 (1.07-2.52)*
18-24 (n=219)	58.0		1.31 (0.88-1.95)	46.6		1.29 (0.85-1.94)	38.8		1.82 (1.21-2.74)†
Education level		0.002			<0.001			0.805	
Below university	46.8		1.00	26.5		1.00	32.6		-
University or higher	58.9		2.26 (1.59-3.21)‡	54.3		3.78 (2.64-5.43)‡	31.7		-
Marital status		0.169			0.011			0.854	
Married/other	48.7		1.00	33.2		1.00	31.6		-
Single	54.7		0.95 (0.61-1.46)	43.9		1.11 (0.71-1.74)	32.4		-
Employment		0.677			0.398			0.004	
Non-employed	54.3		-	38.5		-	39.9		1.00
Employed	52.5		-	42.0		-	28.7		0.87 (0.56-1.35)
Monthly household income, HK$		<0.001			0.201			<0.001	
≥40 000	44.4		1.00	39.7		1.00	23.8		1.00
<40 000	62.8		2.81 (1.98-3.98)	44.9		1.89 (1.32-2.70)‡	40.3		2.13 (1.51-2.99)‡

* P<0.05
† P<0.01
‡ P<0.001

TABLE 2. Association of past-month exposure to alcohol social media marketing (SMM) with past drinking behaviour and future drinking intention (n=675)

Variable	Adjusted odds ratio (95% confidence interval)					
	Past month drinking	Weekly drinking	Past-month binge drinking	Problematic drinking (based on the CAGE questionnaire)	Future intention to drink	Future intention to get drunk
Higher levels of past-month exposure to alcohol SMM (vs lower)	1.93 (1.28-2.90)‡	2.63 (1.16-5.95)†	3.84 (2.37-6.23)§	3.49 (1.46-8.39)‡	4.85 (3.09-7.61)§	7.85 (1.68-36.6)‡
Exposure to traditional media marketing (vs none)	2.13 (1.21-3.74)‡	3.35 (0.73-15.4)	-	1.63 (0.49-5.38)	2.21 (1.13-4.32)†	-
Sex						
Female	1.00	-	1.00	-	1.00	-
Male	1.37 (0.92-2.03)	-	1.24 (0.76-2.02)	-	1.31 (0.86-1.99)	-
Age, y						
30-34	1.00	-	1.00	1.00	1.00	-
25-29	2.56 (1.56-4.19)§	-	1.81 (0.97-3.38)*	0.22 (0.05-1.08)*	1.43 (0.82-2.49)	-
18-24	1.29 (0.78-2.18)	-	0.95 (0.48-1.90)	0.82 (0.29-2.25)	0.97 (0.55-1.74)	-
Education level						
Below university	1.00	-	1.00	-	1.00	1.00
University or higher	2.02 (1.33-3.06)‡	-	1.61 (0.95-2.74)*	-	2.15 (1.37-3.38)‡	1.98 (0.48-8.09)
Marital status						
Married/cohabiting	-	-	-	-	1.00	-
Single	-	-	-	-	1.22 (0.73-2.04)	-
Employment						
Non-employed	-	-	1.00	1.00	-	-
Employed	-	-	0.57 (0.35-0.93)†	0.33 (0.14-0.78)†	-	-
Monthly household income, HK$						
≥40 000	-	1.00	-	1.00	-	1.00
<40 000	-	2.14 (0.86-5.29)	-	8.36 (1.91-36.59)‡	-	2.32 (0.60-8.89)

* P<0.10
† P<0.05
‡ P<0.01
§ P<0.001

only mediated the effect of past-month exposure to alcohol SMM on binge drinking (8.15%) and problem drinking (16.4%).

Only 14.2% of respondents supported greater government restriction on alcohol SMM, whereas 85.3% reported no need for change. Among those supported for greater restriction for alcohol SMM, only being a binge drinker (adjusted odds ratio [AOR]=2.25, 95% confidence interval [CI]=1.25-4.04) and having a lower monthly household income (AOR=2.27, 95% CI=1.42-3.62) were independent predictors for supporting greater restriction for alcohol SMM.

Discussion

Higher alcohol SMM exposure was associated with various positive drinking expectancies, past drinking behaviours, and future drinking intentions. Positive drinking expectancies could mediate the effect of alcohol SMM on various drinking behaviours.

Young adults who were male, university-educated, aged 25 to 29 years, with lower household income were more likely to be exposed to alcohol SMM and thereby represent the target groups for public health actions. Higher exposure to alcohol SMM was associated with all drinking behaviours. Mediation analyses performed with each of the CDEQ subscales showed that the Interpersonal Benefits, Increased Confidence, and Tension Reduction subscales mediated the effect of past-month SMM exposure on drinking behaviours. Alcohol SMM often invoke themes of relaxation and collegiality. The findings thereby provide an evidence-based intervention to counterbalance alcohol SMM by public health workers.

TABLE 3. Mediation analysis model of exposure to alcohol social media marketing (SMM) with total Chinese Drinking Expectancy Questionnaire (CDEQ) score as mediator

Drinking outcome	Higher exposure to alcohol SMM on CDEQ score (x on mediator)	Total CDEQ score on drinking outcome (mediator on y)	Higher exposure to alcohol SMM on outcome (x on y)	Indirect effect (m-x on y)	% mediation by total CDEQ expectancies (indirect effect/total effect)
	Estimated regression coefficient (standard error)			Indirect effect (standard error) [95% confidence interval]	
Past month drinking	1.41 (1.06)	0.01 (0.01)	0.99 (0.19)§	0.01 (0.02) [-0.01-0.05]	-
Weekly drinking	1.41 (1.06)	0.04 (0.02)‡	0.89 (0.42)†	0.06 (0.61) [-0.03-0.2]	-
Binge drinking	1.41 (1.06)	0.02 (0.01)†	1.32 (0.25)§	0.03 (0.03) [-0.01-0.11]	-
Problematic drinking	1.41 (1.06)	0.06 (0.02)§	1.29 (0.44)‡	0.09 (0.08) [-0.05-0.27]	-
Future intention to drink	1.41 (1.06)	-0.01 (0.01)	1.95 (0.22)§	-0.01 (0.01) [-0.03-0.03]	-
Future intention to get drunk	1.41 (1.06)	-0.02 (0.02)	2.08 (0.79)‡	-0.03 (0.06) [-0.14-0.11]	-
	Higher exposure to alcohol SMM on CDEQ positive score (x on mediator)	CDEQ positive score on drinking outcome (mediator on y)	Higher exposure to alcohol SMM on outcome (x on y)	Indirect effect (m-x on y)	% mediation by CDEQ positive expectancies (indirect effect/total effect)
Past month drinking	2.47 (0.87)‡	0.04 (0.01)§	0.92 (0.19)§	0.11 (0.05) [0.03-0.22]	10.8%
Weekly drinking	2.47 (0.87)‡	0.07 (0.02)§	0.78 (0.42)*	0.18 (0.09) [0.03-0.39]	18.9%
Binge drinking	2.47 (0.87)‡	0.06 (0.01)§	1.24 (0.25)§	0.14 (0.07) [0.03-0.30]	10.1%
Problematic drinking	2.47 (0.87)‡	0.08 (0.02)§	1.21 (0.44)‡	0.19 (0.10) [0.04-0.43]	13.5%
Future intention to drink	2.47 (0.87)‡	0.03 (0.01)‡	1.90 (0.22)§	0.08 (0.04) [0.01-0.18]	4.05%
Future intention to get drunk	2.47 (0.87)‡	-0.02 (0.03)	2.11 (0.79)‡	-0.06 (0.11) [-0.26-0.20]	-

* P<0.10
† P<0.05
‡ P<0.01
§ P<0.001

Despite the widespread alcohol SMM, most young adults believed that no restriction is needed. SSM is less intrusive, and recipients may not identify SSM as marketing. The lack of support for regulation may reflect scepticism about the effectiveness and feasibility of regulating SMM in Hong Kong. Nonetheless, the greater support among binge drinkers suggests that increasing public awareness of the adverse effects of drinking may help to increase public support for stronger regulations.

The main limitation of this study was the mandatory closure of bars/nightclubs during the COVID-19 pandemic. The drinking behaviours may not have been typical of Hong Kong young adults during the pandemic. We delayed the data collection until venues were allowed to open. In addition, the cross-sectional data cannot ascertain the temporal sequence of associations. Future research should record longitudinal changes in drinking behaviours in relation to alcohol SMM and examine the content of alcohol SMM advertisements and promotional strategies to inform policy makers.

Funding

Disclosure

The results of this research have been previously published in:
1. Chan RHW, Dong D, Kim JH. Drinking expectancies among Chinese young adults: a qualitative study from Hong Kong. Int J Environ Res Public Health 2022;19:11865.

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