

## Alcohol marketing and consumption in Thailand: Results from the International Alcohol Control Policy Study 2012–2013

Nongnuch Jindarattanaporn<sup>1</sup>, Surarak Chaiyasong<sup>1,2</sup>, Vuthiphan Vongmongkol<sup>1</sup>, and Chutima Akaleephan<sup>1</sup>

<sup>1</sup> International Health Policy Program (IHPP), Ministry of Public Health, Nonthaburi, Thailand

<sup>2</sup> Social Pharmacy Research Unit & Alcohol and Health Promotion Research Unit, Faculty of Pharmacy, Maharakham University, Maha Sarakham, Thailand

### Abstract:

**Background:** Alcohol marketing is a facilitator of alcohol consumption and related harm. The objectives of this study were to examine associations between alcohol consumption and exposure to and liking of alcohol marketing activities in Thailand.

**Methods:** Data were obtained from the Thailand International Alcohol Control Policy study in 2012–2013 with 5,808 respondents aged between 15 and 65 years. Exposure to a variety of marketing techniques and scaled measures of exposure and liking of alcohol advertisements from 0–10 (with 6–10 classified as high) are presented as weighted percentages with confidence intervals. Logistic regression models were applied to determine factors associated with liking alcohol advertisements (scoring six or more) and being a current drinker, regular drinker or heavy episodic drinker.

**Results:** Of all respondents, 75% were exposed to alcohol advertising on television followed by sports sponsorship (69%) and point of sale advertising (66%). Youth reported higher levels of exposure than adults to alcohol advertising via all activities/channels, particularly online media (except radio). Respondents with high exposure to alcohol advertising were more likely to like alcohol advertising (adjusted odds ratio (AOR) = 7.32, 95% confidence interval (CI) [4.91, 10.92]), compared to respondents who were never exposed to alcohol advertising. The odds ratios of drinking currently (AOR = 2.28, 95% CI [1.82, 2.85]), regular drinking (2.10, CI [1.57, 2.81]) and heavy episodic drinking (2.57, [1.94, 3.41]) were significantly higher among those who reported liking of alcohol advertising compared with those who did not.

**Conclusion:** Exposure to alcohol advertising was associated with liking alcohol advertising and increased likelihood of heavy episodic drinking. Thailand should place greater restrictions on alcohol advertising and marketing activities.

### Introduction

Worldwide, the consumption of alcohol results in 3.3 million deaths annually (World Health Organization [WHO], 2022). Alcohol plays a significant causal role in 200 different types of disease (WHO, 2022). It also causes harms to the well-being and health of people around the drinker (WHO, 2014). Total alcohol per capita consumption in the world's population over 15 years of age rose from 5.5 litres of pure alcohol in 2005 to 6.4 litres in 2010, and was still at a level of 6.4 litres in 2016. Worldwide, more than a quarter (26.5%) of all 15–19 year olds were current drinkers in 2018 (WHO, 2018). In 2017 Thailand had the highest alcohol per capita consumption compared to other countries in WHO's South-East Asian region, and exceeded the global average of 6.4 litres of pure alcohol per year with average consumption of 7.1 litres among those aged 15 years and over (Treerutkuarkul, 2017). The prevalence of alcohol

consumption among those aged 15–19 years rose from 11.6% in 2014 to 13.6% in 2016 (National Statistical Office, 2017).

Alcohol marketing is a facilitator of alcohol consumption and positively associated with an increase in alcohol-attributable harms (Stautz et al., 2017). One factor that affects alcohol consumption, particularly among teenagers, is alcohol advertising (Anderson, 2009; Smith & Foxcroft, 2009; WHO, 2018). International evidence indicates that alcohol advertising and marketing influences the attitudes of young people towards drinking, their liking of advertisements, and their decision to initiate drinking (Chang, 2014; Chen, 2005; Mart, 2011; Morgenstern, 2014; Smith & Foxcroft 2009), the amount of alcohol they consume (Grenard, 2013; Tanski, 2015), and their decision to increase their alcohol consumption (Jones & Magee, 2011). However, most of these studies linking alcohol advertising to increased consumption focus on television

**Correspondence:** Surarak Chaiyasong, [surarak.c@msu.ac.th](mailto:surarak.c@msu.ac.th), Faculty of Pharmacy, Maharakham University, 41/20 Khamriang, Kantharawichai, Maha Sarakham 44150 Thailand. Tel: +66 043 754360, +66 091 9355369; Fax: +66 043 754360

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advertising in children's programs or during peak viewing times (Grenard, 2013; Tanski, 2015).

Marketing communication is defined as methods such as advertising, sales promotion, public relations, direct marketing, and personal selling, by which firms directly or indirectly try to inform, persuade and remind customers about products and brands they are selling (Kotler et al., 2010). For many years the alcohol industry has used alcohol advertising and marketing as a tool to promote their products. The alcohol industry in Thailand spends approximately 1,000 million baht (US\$ 32 million) on average each year on alcohol advertising (AC Nielsen Thailand, 2012). Additionally, alcohol companies attempt to sell their products through sports advertising, or by marketing their brand or logo via websites and online social networks, both directly and indirectly (Institute of Alcohol Studies, 2017; WHO, 2019), aimed particularly at adolescents (Vantamay, 2012). A narrative review study indicates that there are associations between exposure to alcohol marketing and alcohol use among young people (Lobstein et al., 2017). Previous studies in Thailand showed that 91.1% of Thai youths are exposed to alcohol advertising on television (Loysmu, 2012) and 78.2% of Thai youths are exposed to marketing communication such as brand logos (Kaewkaew, 2012). Furthermore, two recent studies in Thailand found that alcohol advertising exposure was associated with alcohol consumption among Thai students and adults (Boontem & Saengow, 2021; Buakate et al., 2022). However, the first did not specify the type of media used to advertise alcohol or the specific activities employed in alcohol marketing (Boontem & Saengow, 2021) and the second was not representative of the Thai population (Buakate et al., 2022).

Thailand has many regulations regarding alcohol advertising and marketing, e.g., the 2008 Alcohol Control Act (B.E. 2551), Food Act (B.E. 2522), and Consumer Protection Act (B.E. 2522). These regulations require that any alcohol advertisement can only reveal information without displaying pictures of alcohol products or packages. However, logos of the products or of the companies are allowed. In addition, any kind of marketing promotion, such as special prices, gift vouchers, prize contests, sales or money pay back are prohibited (Alcohol Control Act [B.E. 2551], 2008). Furthermore, advertisement of alcohol products via television or radio is only allowed to be broadcast from 10 p.m. to 5 a.m., with the condition that a clear warning message be broadcast (radio) or wording be displayed (television) for at least two seconds with the advertisement (Alcoholic Beverage Control Committee, 2010). In 2007 the government agreed to place an additional restriction on alcohol advertisements, stating that billboards could not be placed within 500 meters of educational institutions (Thaikla, 2007). These regulations have been implemented and enforced nationwide (Alcoholic Beverage Control Act [B.E. 2551], 2008; Boontem & Saengow, 2021; Kaewpramkusol et al., 2019).

Thailand has substantially restricted alcohol advertising and marketing through regulatory and legal measures. This reduction in exposure to alcohol marketing has been associated with (subsequent or simultaneous) decreased

support for alcohol marketing in Thailand. However, there are a limited number of studies on alcohol marketing and its association with alcohol consumption in Thailand (Jaichuen et al., 2015; Jaichuen et al., 2018). To assess the impact of national alcohol control policies, the International Alcohol Control Policy Study (the IAC Study) was established. The IAC Study Thailand was conducted in 2012/2013 to survey data on alcohol consumption, perception and support for alcohol control policies. It focused on the accessibility, affordability and acceptability of alcohol in Thailand, and included exposure to, and liking of, alcohol marketing (Casswell et al., 2012; Chaiyasong et al., 2015; Huckle et al., 2018). Based on the IAC study overall, we conducted a study of alcohol marketing and consumption in Thailand. The objectives of this study were to describe the prevalence of exposure to alcohol advertising and marketing activities, and examine associations between alcohol consumption and exposure to and liking of alcohol advertising and marketing activities in Thailand. This Thai study will be one of the first of such studies and provide an example for other emerging market and low- and middle-income countries (LMICs).

## Methods

This cross-sectional study was conducted using survey data from the Study of Alcohol Control Policies 2012–2013 in Thailand under the program of the International Alcohol Control Policy (IAC) Study (Casswell, 2012). The IAC Thailand project was reviewed and approved by the Research Ethics Board of the Institute for Development of Human Research Protection (IHRP), Thailand on April 18, 2012. The analysis of this study was supported and approved by Mahasarakham University in 2022.

### Design and Sample

The IAC Study was a collaborative study from multiple countries on alcohol use and related policy behaviours. For the Thailand arm, a national survey with a multi-stage stratified cluster sampling method was conducted among adult population aged between 15 and 65 years from nine provinces (including Bangkok) representing every region across the country. The survey sampling design and methodology has been described elsewhere (Chaiyasong, 2015). A total of 5,808 participants agreed to be interviewed with a response rate of 92.8%.

### Measurements

The questionnaire originated in English and was translated into Thai and adjusted to ensure it was relevant to and understood in the Thai context. Face-to-face interviews with all respondents were conducted to collect data using android tablets. Data were collected between September 2012 and May 2013. The variables included in this study are described as follows.

#### *Exposure to Alcohol Marketing*

Exposure to alcohol advertising and marketing activities was measured with two questions. The first question was: "In the last six months, have you seen any alcohol products advertised in any of the following media: television, radio,

outdoor media (billboards, posters), point of sale, print media (newspapers, magazines), websites, online social networks, sponsorship of television programmes or movies, sponsorship of sports teams/events or broadcasting, sponsorship of concerts/music events or festivals, on clothing or alcohol-branded merchandise, promotion or special price offers, celebrity promotion of alcohol brands and donations to charity (for instance, the alcohol industry, like others, pays in cash and/or kind to be seen to have corporate social responsibility (CSR) and thereby funds students or the poor in remote areas)?" Responses were dichotomized as either "yes" or "no". The second question was: "In the last six months, how often have you seen alcohol advertisements?" Response options were grouped into three categories: low (0–2), moderate (3–5) and high (6–10).

### Liking of Alcohol Marketing

A single question was used to assess liking of alcohol marketing: "How do you feel about alcohol advertisements?" Responses were measured on a Likert scale ranging from zero to ten where zero was "I dislike it a lot" and ten was "I like it a lot". We grouped these responses into three categories based on the distribution of the data: low (0–2), moderate (3–5) and high (6–10).

### Alcohol Consumption

Current drinking was defined for people who consumed alcohol in the last six months, based on the question: "Have you drunk any alcoholic beverages in the last six months?" with responses being either "yes" or "no".

### Regular Drinking

The IAC survey used a within-location beverage-specific framework to collect alcohol consumption data. Respondents were asked, "In the last six months, how often did you drink alcohol?" Frequency of alcohol consumption was categorized into regular (daily or one to six times per week) and occasional (between one to twenty-five times in the last six months).

### Heavy Episodic Drinking

All respondents who reported currently drinking were asked for their typical number of drinks per occasion for each drinking location in the last six months. One drink was defined as 10 grams of pure alcohol. Reported drinking of five or more drinks per occasion was defined as undertaking heavy episodic drinking.

### Demographic Characteristics

Demographic characteristics included gender, age, residential area (urban or rural), region of residence (Bangkok, North, South, North-East, Central), education and income.

### Data Analysis

Frequencies and percentages were used to describe the characteristics of the sample, their exposure to and liking of alcohol marketing, current drinking, regular drinking, and heavy episodic drinking. Weighted analysis, considering a complex survey design, was performed to estimate the

prevalence of exposure to alcohol marketing in the Thai population. Separate logistic regression models were used to determine factors associated with liking alcohol advertising and marketing (liking score of six or more vs score of less than six), and current drinking, regular drinking or heavy episodic drinking. Records with missing data were excluded case-wise when tabulating frequencies and modelling outcomes. Stata version 15 was used for all analyses. Variables with a *p*-value less than 0.05 were considered statistically significant.

## Results

Of the total respondents, most of them were female (51.8%), aged 25–44 years (51.9%), had completed primary school (37.4%), were earning less than 10,000 Thai baht (US\$ 285) per month (68.3%), living in rural areas (68.6%) and from the North-Eastern region (33.4%). As shown in Table 1, slightly more than half (54.6%) were current drinkers and about one-fourth were regular drinkers as well as heavy episodic drinkers

**Table 1**

### Demographic characteristics and alcohol consumption of the respondents

Variable	n	Weighted %
<b>Demographics</b>		
Gender		
Male	2,198	48.2
Female	3,610	51.8
Age (year)		
15–24	656	22.9
25–44	2,082	51.9
45–65	1,658	25.3
Education		
Primary school	2,580	37.4
Secondary school	1,692	32.5
High school	627	14.9
College or higher	888	15.1
Income (THB/month)		
≤5,000	2,092	39.2
5,001–10,000	1,712	29.1
10,001–15,000	699	11.4
15,0001–20,000	447	7.8
>20,000	858	12.6
Residential area		
Urban	2,359	31.4
Rural	3,449	68.6
Regional area		
Bangkok	1,003	10.4
Central	1,207	24.2
North	1,203	18.3
Northeast	1,199	33.4
South	1,196	13.6
<b>Alcohol consumption</b>		
Current drinking		
Yes	2,649	54.6
No	3,159	45.5
Regular drinking		
Yes	924	21.5
No	4,884	78.5
Heavy episodic drinking		
Yes	1,012	24.7
No	4,796	75.3

Table 2

*Prevalence of exposure to various alcohol marketing activities, high exposure, and high liking among the Thai population*

Characteristics	Prevalence of exposure to alcohol marketing activities, weighted %													High exposure, weighted %	High liking, weighted %	
	Mass media ad		Outdoor ad	Printed media	Person ad	Online media			Sponsorship			Clothing	Point of sale			Promotion
	TV	Radio	Billboard	Magazine	Famous people	Website	Social media	Charity	Sport	Music	TV show					
<b>All</b>	<b>75.1</b>	<b>19.2</b>	<b>61.8</b>	<b>38.0</b>	<b>44.0</b>	<b>20.0</b>	<b>15.6</b>	<b>51.5</b>	<b>68.9</b>	<b>59.6</b>	<b>52.1</b>	<b>64.0</b>	<b>66.4</b>	<b>29.2</b>	<b>38.0</b>	<b>12.5</b>
Gender																
Male	72.0	18.2	61.0	35.7	41.0	19.9	16.7	45.5	70.7	59.3	48.2	67.4	66.7	27.2	36.7	14.2
Female	78.0	20.0	62.6	40.1	46.8	20.0	14.5	57.2	67.2	59.8	55.8	60.8	66.0	31.2	39.2	10.9
Age (year)																
15–24	85.7	17.8	69.9	41.5	51.9	43.9	40.5	53.1	70.2	68.9	59.8	73.8	83.0	33.4	48.5	13.6
25–44	77.3	19.2	65.0	39.5	45.6	19.9	14.4	54.1	74.1	65.1	53.2	68.8	67.6	29.7	39.4	14.7
45–65	69.1	20.7	57.4	35.8	40.3	9.2	4.5	50.9	64.9	53.5	49.7	58.4	60.5	28.4	32.0	11.4
Education																
Primary school	68.5	21.6	52.7	29.7	33.7	3.1	2.3	43.2	59.2	45.2	44.8	52.7	55.8	21.7	28.2	10.0
Secondary school	80.3	18.6	68.1	43.2	48.8	25.1	19.3	54.9	73.8	65.3	55.8	71.3	73.8	30.9	42.3	12.9
High school	80.1	17.7	62.4	37.7	49.0	30.3	26.7	52.3	71.7	66.0	53.3	71.7	72.3	36.9	43.7	11.0
College or higher	74.9	15.6	70.0	46.9	54.4	37.0	26.7	64.0	79.3	76.5	61.1	68.4	71.1	36.6	46.7	19.3
Income (THB/month)																
≤5,000	76.7	20.2	61.6	36.7	41.1	19.3	16.4	46.2	64.6	53.2	52.5	59.8	68.0	27.1	36.9	10.9
5,001–10,000	73.0	19.9	62.2	35.8	45.5	18.2	14.8	54.0	68.3	60.9	52.3	64.5	66.7	29.2	37.8	12.1
10,001–15,000	76.5	17.6	65.0	42.7	46.2	25.0	18.9	54.5	74.4	69.4	54.3	69.9	64.2	31.6	39.5	12.7
15,001–20,000	75.6	16.2	57.0	42.4	48.6	28.8	15.1	58.3	75.4	64.1	47.4	68.7	60.0	33.8	38.2	21.7
>20,000	73.2	17.1	61.7	39.8	44.6	15.9	11.8	55.4	74.4	65.0	51.3	67.6	66.3	31.0	40.1	12.5
Residential area																
Urban	74.5	16.2	64.1	42.7	48.5	24.9	20.4	59.5	77.0	69.7	56.6	68.1	68.3	34.7	36.2	11.3
Rural	75.3	20.5	60.8	35.8	41.9	17.7	13.3	47.9	65.1	55.0	50.1	62.1	65.4	26.8	41.8	15.1
Region of residence																
Bangkok	74.9	17.0	58.0	41.3	46.9	24.3	19.2	55.8	76.2	62.1	51.5	66.9	59.3	28.7	38.3	14.8
Central	74.8	17.8	58.9	39.7	44.0	20.3	17.8	52.9	72.6	64.1	55.4	65.2	60.7	28.6	36.0	12.6
North	70.2	19.1	63.1	38.3	41.6	21.5	17.6	51.4	69.3	61.3	49.5	68.1	65.6	31.5	32.9	13.4
Northeast	77.5	20.6	67.4	36.0	43.2	17.1	11.6	49.0	63.9	53.4	50.6	60.8	73.0	29.0	41.4	12.2
South	76.3	19.7	54.7	36.7	46.9	20.7	15.5	52.0	68.3	62.5	54.1	62.0	66.4	28.3	39.7	10.1

Note: ad=alcohol advertisement

Table 2 shows a summary of the prevalence of exposure to various alcohol marketing activities among the respondents. Approximately 75% of respondents were exposed to alcohol advertising from television, followed by sports sponsorship (69%), and point of sale (66%). More men than women reported being exposed to alcohol advertising via online social networks, sports sponsorship and alcohol-branded merchandise. Young people reported higher levels than adults of exposure to alcohol advertising via all activities/channels, especially online media (except radio). Prevalence of exposure to online media was substantially higher in the two highest education groups compared to the lowest education group. In addition, 38% were exposed to alcohol marketing activities and 12.5% reported liking alcohol advertisement at a high level.

**Table 3**

***Multivariable model of factors associated with liking alcohol marketing from the IAC Thailand in 2012–2013***

Factors	Liking alcohol marketing			
	Adjusted Odds	Lower limit	Upper limit	p-value
Level of exposure to alcohol marketing				
<b>Low or no exposure</b>	1.00			
<b>Moderate</b>	<b>3.26</b>	<b>2.16</b>	<b>4.92</b>	<b>&lt;0.001</b>
<b>High</b>	<b>7.32</b>	<b>4.91</b>	<b>10.92</b>	<b>&lt;0.001</b>
Gender				
Male	1.04	0.85	1.27	0.679
Age (year)				
25–44	1.05	0.78	1.41	0.761
45–65	0.82	0.58	1.14	0.231
Education				
Secondary school	0.99	0.77	1.29	0.960
High school	0.90	0.64	1.27	0.552
College or higher	1.33	0.98	1.81	0.069
Income (THB/month)				
5,001–10,000	1.19	0.92	1.53	0.185
10,001–15,000	1.23	0.88	1.70	0.227
<b>15,001–20,000</b>	<b>1.63</b>	<b>1.12</b>	<b>2.38</b>	<b>0.011</b>
>20,000	1.02	0.72	1.44	0.919
Residential area				
<b>Rural</b>	<b>0.75</b>	<b>0.59</b>	<b>0.95</b>	<b>0.016</b>
Region of residence				
Bangkok	1.30	0.91	1.85	0.150
<b>Central</b>	<b>1.44</b>	<b>1.05</b>	<b>1.97</b>	<b>0.023</b>
<b>North</b>	<b>1.44</b>	<b>1.04</b>	<b>1.98</b>	<b>0.026</b>
<b>Northeast</b>	<b>1.51</b>	<b>1.11</b>	<b>2.07</b>	<b>0.009</b>

**Note:** Bold indicates  $p$ -value is  $<0.05$ ; Reference groups included low level of liking alcohol marketing, age 15–24 years, primary school level,  $\leq 5,000$  THB/month, and Southern Region of residence.

Table 3 shows factors associated with liking alcohol marketing. Controlling for gender, age, education, income, residential area and region of residence, respondents with high exposure (adjusted odds ratio (AOR) = 7.32, 95% CI [4.91, 10.92]) and moderate exposure (AOR = 3.26, 95% CI [2.16, 4.92]) to alcohol marketing activities were more likely to like alcohol advertising, compared to respondents who reported low exposure to alcohol marketing activities.

Table 4 shows the associations between respondent characteristics and degree of liking alcohol advertisements and reporting of current drinking, regular drinking and heavy episodic drinking. In the model the following variables were adjusted for and have been included for completeness and to provide insight into other relevant characteristics of Thai drinkers. Male participants were more likely to report current drinking (AOR = 4.14, 95% CI [3.60, 4.76]), regular drinking (AOR = 8.16, 95% CI [6.70, 9.94]) and heavy episodic drinking (AOR = 7.57, 95% CI [6.32, 9.06]), compared to females. Respondents in the high education groups were less likely to report non-drinking compared to those in the low education group. Respondents in higher income groups were more likely to report any types of drinking compared to those in the lowest income group. Respondents living in rural areas were more likely to report current drinking compared to those living in urban areas. With regard to regional areas, respondents living in regions other than the Southern Region were more likely to report current drinking, regular drinking and heavy episodic drinking.

Respondents who highly liked alcohol advertising were more likely to report current drinking (AOR = 2.28, 95% CI [1.82, 2.85]), regular drinking (AOR = 2.10, 95% CI [1.57, 2.81]) and heavy episodic drinking (AOR=2.57, 95% CI [1.94, 3.41]), compared to people who did not like alcohol advertising.

Male participants were more likely to report current drinking (AOR = 4.14, 95% CI [3.60, 4.76]), regular drinking (AOR = 8.16, 95% CI [6.70, 9.94]) and heavy episodic drinking (AOR = 7.57, 95% CI [6.32, 9.06]), compared to females. Respondents in the high education groups were less likely to report non-drinking compared to those in the low education group. Respondents in higher income groups were more likely to report any types of drinking compared to those in the lowest income group. Respondents living in rural areas were more likely to report current drinking compared to those living in urban areas. With regard to regional areas, compared respondents living in the Southern Region, those living in other regions other than the Southern Region were more likely to report current drinking, regular drinking and heavy episodic drinking.

**Table 4**

**Factors associated with current drinking, regular drinking and heavy episodic drinking among the respondents, multivariable model predicting drinking patterns from the IAC Thailand in 2012–2013**

Factors	Current drinking				Regular drinking				Heavy episodic drinking			
	AOR	LL	UL	<i>p</i> -value	AOR	LL	UL	<i>p</i> -value	AOR	LL	UL	<i>p</i> -value
Level of liking alcohol marketing												
Low or no	<b>1.00</b>				<b>1.00</b>				<b>1.00</b>			
Moderate	<b>2.20</b>	<b>1.90</b>	<b>2.55</b>	<b>&lt;0.001</b>	<b>1.56</b>	<b>1.27</b>	<b>1.92</b>	<b>&lt;0.001</b>	<b>2.21</b>	<b>1.80</b>	<b>2.71</b>	<b>&lt;0.001</b>
High	<b>2.28</b>	<b>1.82</b>	<b>2.85</b>	<b>&lt;0.001</b>	<b>2.10</b>	<b>1.57</b>	<b>2.81</b>	<b>&lt;0.001</b>	<b>2.57</b>	<b>1.94</b>	<b>3.41</b>	<b>&lt;0.001</b>
Gender												
Male	<b>4.14</b>	<b>3.60</b>	<b>4.76</b>	<b>&lt;0.001</b>	<b>8.16</b>	<b>6.70</b>	<b>9.94</b>	<b>&lt;0.001</b>	<b>7.57</b>	<b>6.32</b>	<b>9.06</b>	<b>&lt;0.001</b>
Age (year)												
25–44	0.94	0.76	1.17	0.582	<b>1.70</b>	<b>1.25</b>	<b>2.31</b>	<b>0.001</b>	1.07	0.82	1.39	0.613
45–65	0.81	0.64	1.02	0.074	<b>1.55</b>	<b>1.12</b>	<b>2.15</b>	<b>0.009</b>	<b>0.67</b>	<b>0.50</b>	<b>0.90</b>	<b>0.007</b>
Education												
Secondary school	<b>0.83</b>	<b>0.70</b>	<b>0.99</b>	<b>0.040</b>	0.80	0.64	1.00	0.051	1.04	0.84	1.30	0.701
High school	1.01	0.80	1.27	0.937	<b>0.74</b>	<b>0.55</b>	<b>0.99</b>	<b>0.042</b>	1.12	0.85	1.49	0.409
College or higher	<b>0.73</b>	<b>0.59</b>	<b>0.91</b>	<b>0.005</b>	<b>0.39</b>	<b>0.28</b>	<b>0.53</b>	<b>&lt;0.001</b>	<b>0.72</b>	<b>0.54</b>	<b>0.96</b>	<b>0.025</b>
Income (THB/month)												
5,001–10,000	<b>1.32</b>	<b>1.11</b>	<b>1.56</b>	<b>0.002</b>	<b>1.53</b>	<b>1.20</b>	<b>1.94</b>	<b>0.001</b>	<b>1.42</b>	<b>1.13</b>	<b>1.78</b>	<b>0.002</b>
10,001–15,000	<b>1.48</b>	<b>1.18</b>	<b>1.85</b>	<b>0.001</b>	<b>1.65</b>	<b>1.21</b>	<b>2.23</b>	<b>0.001</b>	<b>1.35</b>	<b>1.01</b>	<b>1.81</b>	<b>0.042</b>
15,001–20,000	<b>1.52</b>	<b>1.16</b>	<b>2.00</b>	<b>0.003</b>	<b>1.68</b>	<b>1.18</b>	<b>2.41</b>	<b>0.004</b>	<b>1.53</b>	<b>1.09</b>	<b>2.15</b>	<b>0.014</b>
>20,000	<b>1.53</b>	<b>1.22</b>	<b>1.92</b>	<b>&lt;0.001</b>	<b>1.61</b>	<b>1.18</b>	<b>2.19</b>	<b>0.003</b>	<b>1.51</b>	<b>1.13</b>	<b>2.03</b>	<b>0.006</b>
Residential area												
Rural	<b>1.29</b>	<b>1.09</b>	<b>1.53</b>	<b>0.003</b>	0.91	0.72	1.14	0.394	0.87	0.70	1.07	0.186
Region of residence												
Bangkok	<b>1.35</b>	<b>1.05</b>	<b>1.73</b>	<b>0.017</b>	<b>1.83</b>	<b>1.28</b>	<b>2.61</b>	<b>0.001</b>	<b>1.86</b>	<b>1.34</b>	<b>2.59</b>	<b>&lt;0.001</b>
Central	<b>1.33</b>	<b>1.09</b>	<b>1.63</b>	<b>0.006</b>	<b>2.02</b>	<b>1.51</b>	<b>2.71</b>	<b>&lt;0.001</b>	<b>1.68</b>	<b>1.27</b>	<b>2.23</b>	<b>&lt;0.001</b>
North	<b>1.81</b>	<b>1.47</b>	<b>2.23</b>	<b>&lt;0.001</b>	<b>2.51</b>	<b>1.86</b>	<b>3.40</b>	<b>&lt;0.001</b>	<b>2.71</b>	<b>2.04</b>	<b>3.60</b>	<b>&lt;0.001</b>
Northeast	<b>2.68</b>	<b>2.18</b>	<b>3.30</b>	<b>&lt;0.001</b>	<b>2.69</b>	<b>2.00</b>	<b>3.61</b>	<b>&lt;0.001</b>	<b>3.08</b>	<b>2.34</b>	<b>4.06</b>	<b>&lt;0.001</b>

**Note:** Bold indicates when *p*-value is <0.05; Reference groups included low level of liking alcohol marketing, age 15–24 years, primary school level, ≤5,000 THB/month, and Southern Region of residence; AOR=adjusted odds ratio, LL=lower limit of 95% CI, UL=upper limit of 95% CI

## Discussion

This is the first study reporting the prevalence of exposure to alcohol advertising and marketing, and associations with alcohol consumption behaviours, among the Thai population based on the International Alcohol Control Policy (IAC) survey in Thailand. The prevalence of exposure to alcohol marketing is substantial in the Thai population. A high proportion of Thai people are exposed to alcohol advertising via traditional media channels, including television, sponsorship of sporting events and point of sale. This is not surprising as a national mass media survey found that 90.5% of Thai people watch television (National Statistical Office,

2019). Although there are restrictions on alcohol marketing in Thailand, legislation does not cover indirect advertising, especially in terms of brand names and logos. People are therefore exposed to alcohol advertising (such as alcohol product logos) when they watch television. Thailand has no regulation to control alcohol advertising in the form of sports sponsorship.

Around half of Thai people consume alcohol and were therefore more likely than those who do not to be familiar with alcohol and be exposed to point of sale advertising. A previous study found that alcohol advertising at the point of sale was significantly associated with regular alcohol consumption among teenagers (Jones & Magee, 2011). The

restriction of alcohol advertising at the point of sale should therefore be seriously considered by regulators as a way to limit sales and consumption.

Youths were exposed to alcohol advertising via all media channels (except radio) and marketing activities, particularly on websites and online social network sites, e.g. 43% of 15–24 year olds compared to 2% of 45–65 year olds. Exposure to alcohol marketing and advertising on digital media seems prevalent among younger populations. However, exposure to most forms of alcohol advertising among adults aged 25–44 years was relatively high as well (with lower rates of exposure to online and social media advertising being exceptions). These findings correspond with the results of studies in other countries (Jernigan et al., 2017; Jones & Magee, 2011; Morojele et al., 2018; Winpenny et al., 2012). In LMICs, for example, a previous study in South Africa reported that the number of modes of alcohol brand/product advertising to which adolescents were exposed was positively associated with alcohol use among adolescents (Morojele et al., 2018). In high income countries (HICs), such as Australia and the US, the majority of Australian and American adolescents had been exposed to alcohol advertisements on television, in newspapers and magazines, on the Internet, on billboards/posters and promotional materials and at point of sales (Jones & Magee, 2011; Noel et al., 2022). In European countries, adolescents in the UK and the Netherlands were more likely than adults to be exposed to alcohol advertising on television (Patil et al., 2014). In Germany adolescents had a lower exposure to alcohol advertising than adults (Patil et al., 2014). A recent systematic review of seven countries (Germany, Italy, the Netherlands, Poland, UK, Taiwan and the United States) indicated that young people had high exposure to different marketing media, and also found a positive association between the level of marketing exposure and the level of youth alcohol consumption (Jernigan et al., 2017). Therefore, the situation of alcohol marketing in Thailand is similar to that in other LMICs and HICs.

Our results suggest, as others have found that young people are more exposed to alcohol marketing than adults and need much stronger protection (Hastings & Sheron, 2013). The current alcohol legislation in Thailand is not sufficient to prevent young people from being exposed to alcohol marketing. The exemption in Thai regulations, allowing logos to be included in advertisements and also the use of brand stretching (Alcohol Control Act [B.E. 2551], 2008), has meant the environment is full of alcohol-related messaging. Regulators have been ineffective in monitoring and enforcing these regulations (Thamarangsi, 2011). In addition, many international studies also indicate that several alcohol policies and measures are effective and cost-effective in reducing harms from alcohol. These include pricing and taxation, restriction of alcohol availability, marketing control, drink-driving counter-measures and screening and early intervention (Anderson, 2009; Babor, 2010; Chisholm, 2004; Rehm, 2006). Thus, effective control requires a comprehensive policy that builds on existing policies and adds new strategies to restrict alcohol advertising exposure via all media.

More men than women reported being exposed to alcohol advertising from websites, online social networks, sports and event sponsorship and alcohol-branded merchandise. In contrast, more women than men were exposed to alcohol advertising on television, radio, sponsorship of television programs or movies, celebrities, and charities. These findings are somewhat consistent with a previous study from Australia and a recent study from Thailand which revealed that more men than women were exposed to alcohol advertisements (Babor. et al., 2010; Boontem & Saengow, 2021). Another study on policy interventions provides results of the effectiveness of population level alcohol policy interventions (Fitzgerald et al., 2016). These findings confirm that there are likely to be gender differences that are relevant to policy effectiveness in some areas (Babor. et al., 2010; Fitzgerald et al., 2016).

A key finding from this study was the association between exposure to alcohol marketing and liking of alcohol advertising. This study confirms findings from two previous studies by Austin et al. (2006) and Chen et al. (2005). They demonstrated that when demographic variables are controlled before the contribution of exposure to advertising is examined, there is an association between exposure and liking of alcohol marketing (Austin et al., 2006; Chen et al., 2005). In addition, previous studies indicated that alcohol marketing receptivity or favouring alcohol advertisements have been included as mediator variables. Hence, liking of advertising could be influenced by exposure to alcohol marketing (Jernigan et al., 2017; McClure et al., 2013).

Another key finding from this study was that liking alcohol marketing was associated with current drinking and regular drinking. The odds of current drinking and regular drinking were considerably higher for those who liked marketing, relative to those who did not. This finding, although not previously known for Thailand, is consistent with findings by Fleming et al. (2004) and Chen et al. (2005). Liking of alcohol advertisements significantly contributed to a positive attitude towards these advertisements and subsequently to advertising effectiveness, with this indicated by the intent to purchase the product. Brands promoted by these advertisements were also associated with intentions to drink, in particular among youth aged 15 to 20 years.

Asian countries are an emerging alcohol market that have been targeted by global alcohol corporations for decades. Several countries have implemented alcohol marketing control policies and measures but there are still many loopholes in marketing, monitoring and regulations, such as in digital marketing and sponsorship (Jiang et al., 2017). In Thailand, although there have been a number of restrictions on alcohol marketing, particularly the Thai Alcohol Control Act (B.E.2551) which meticulously regulated the content of direct alcohol marketing, the volume of marketing and indirect alcohol marketing has become problematic and difficult for the government to address (Kaewpramkusol et al., 2019). The control of alcohol sponsorship is politically sensitive and legally ambiguous because alcohol sponsorship has seemed to provide economic and social benefits and thereby further reinforced the industry's positive image. However, future alcohol policy development should

place greater emphasis on alcohol sponsorship and branding targeting young people.

This study has limitations which should be acknowledged. This study is based on data of the IAC study in 2012-2013 which are ten years old; however, results of this study are still relevant and provide the most up-to-date findings useful for alcohol control policy and research, especially on alcohol marketing in Thailand. Moreover, unlike the present study, previous studies did not specify types of media used to advertise alcoholic beverages or specific activities employed in alcohol marketing (Boontem & Saengow, 2021) and were not representative of the Thai population (Buakate et al., 2022). In the present study, exposure to alcohol advertising and marketing activities, and alcohol consumption, are self-reported which may result in underestimation of the exposure and drinking prevalence. In addition, a limitation inherent in this cross-sectional study is that causality cannot be established. Longitudinal studies are warranted in Thailand to further examine the direction of the relationship between exposure to and support for alcohol advertisements and alcohol use. In addition, further research is needed, such as an up-to-date study to explore changes in exposure to alcohol advertising and marketing activities among Thai people.

## Conclusions

Thais exposed to alcohol advertisements are more likely to report liking such advertisements. Furthermore, liking alcohol advertisements has a strongly positive association with current drinking and regular drinking. Thais, and in particular young people, are highly exposed to alcohol advertising and marketing activities via online media, and report liking alcohol marketing, especially sports sponsorship. Future research on how alcohol marketing in online media and sports sponsorship affect liking of (and support for) advertising and consumption is needed. The current laws and policies that regulate alcohol advertising prohibit advertising of alcohol products in Thailand, but do not regulate alcohol marketing by use of logos and brands advertised in all media, online social media and digital marketing in particular. National alcohol policies should consider introducing a comprehensive policy and strengthening regulations of direct and indirect alcohol marketing activities and advertising.

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## References

- AC Nielsen Thailand. (2012). *Alcohol Advertising Spending with media drilldown - Y2002-Y2012*. Bangkok: AC Nielsen Thailand.
- Alcoholic Beverage Control Act B.E. 2551 (2008, February 13). *The Government Gazette*. Vol. 125, Part 33a, pp. 34-49.
- Alcoholic Beverage Control Committee. (2010). *Notification of the Alcoholic Beverage Control Committee. Re: Pattern and Method for the Display of Symbol of Alcoholic Beverage or Symbol of the Company Manufacturing the Alcoholic Beverage B.E. 2553* (2010).
- Anderson, P., Chisholm, D., & Fuhr, D. C. (2009). Effectiveness and cost-effectiveness of policies and programmes to reduce the harm caused by alcohol. *Lancet*, 373(9682), 2234-2246. [https://doi.org/10.1016/S0140-6736\(09\)60744-3](https://doi.org/10.1016/S0140-6736(09)60744-3).
- Anderson, P., de Bruijn, A., Angus, K., Gordon, R., & Hastings, G. (2009). Impact of alcohol advertising and media exposure on adolescent alcohol use: a systematic review of longitudinal studies. *Alcohol and Alcoholism*, 44(3), 229-243. <https://doi.org/10.1093/alcalc/agn115>.
- Austin, E. W., Chen, M. J., & Grube, J. W. (2006). How does alcohol advertising influence underage drinking? The role of desirability, identification and skepticism. *The Journal of Adolescent Health*, 38(4), 376-384. <https://doi.org/10.1016/j.jadohealth.2005.08.017>.
- Babor, T. F., Caetano, R., Casswell, S., Giesbrecht, N., Graham, K., Rehm, J., & Room, R. (2010). *Alcohol: No ordinary commodity*. Oxford University Press.
- Boontem, P., & Saengow, U. (2021). Association between self-reported exposure to alcohol advertisements and drinking behaviors: An analysis of a population-based survey in Thailand. *International Journal of Environmental Research and Public Health*, 18(21), 11271. <https://doi.org/10.3390/ijerph182111271>
- Buakate, P., Thirarattanasunthon, P., & Wongrith, P. (2022). Factors influencing alcohol consumption among university students in Southern Thailand. *Roczniki Państwowego Zakładu Higieny [Annals of the National Institute of Hygiene]*, 73(4), 435-443. <https://doi.org/10.32394/rpzh.2022.0239>
- Casswell, S., Meier, P., MacKintosh, A. M., Brown, A., Hastings, G., Thamarangsi, T., Chaayasong, S., Chun, S., Huckle, T., Wall, M., & You, R. Q. (2012). The International Alcohol Control (IAC) study-evaluating the impact of alcohol policies. *Alcoholism, Clinical and Experimental Research*, 36(8), 1462-1467. <https://doi.org/10.1111/j.1530-0277.2012.01738.x>.
- Chaayasong S, Thamarangsi, T., Kaewnui S, Kamolrangsang J, et al., (2015). *Alcohol Policy in Thailand: Results from the National Survey Wave 1 under the program of International Alcohol Control (IAC)*. Nonthaburi: Center for Alcohol Studies.
- Chang, F. C., Lee, C. M., Chen, P. H., Chiu, C. H., Miao, N. F., Pan, Y. C., Huang, T. F., & Lee, S. C. (2014). Using media exposure to predict the initiation and persistence of youth alcohol use in Taiwan. *The International*

- Journal on Drug Policy*, 25(3), 386–392. <https://doi.org/10.1016/j.drugpo.2014.04.017>.
- Chen, M. J., Grube, J. W., Bersamin, M., Waiters, E., & Keefe, D. B. (2005). Alcohol advertising: What makes it attractive to youth? *Journal of Health Communication*, 10(6), 553–565. <https://doi.org/10.1080/10810730500228904>
- Chisholm, D., Rehm, J., Van Ommeren, M., & Monteiro, M. (2004). Reducing the global burden of hazardous alcohol use: A comparative cost-effectiveness analysis. *Journal of Studies on Alcohol*, 65(6), 782–793. <https://doi.org/10.15288/jsa.2004.65.782>.
- Consumer Protection Act B.E. 2522 (1979). *The Government Gazette*. Vol. 96, Part 79, pp. 31–35.
- Fitzgerald, N., Angus, K., Emslie, C., Shipton, D., & Bauld, L. (2016). Gender differences in the impact of population-level alcohol policy interventions: Evidence synthesis of systematic reviews. *Addiction*, 111(10), 1735–1747. <https://doi.org/10.1111/add.13452>
- Fleming, K., Thorson, E., & Atkin, C. K. (2004). Alcohol advertising exposure and perceptions: Links with alcohol expectancies and intentions to drink or drinking in underage youth and young adults. *Journal of Health Communication*, 9(1), 3–29. <https://doi.org/10.1080/10810730490271665>.
- Food Act B.E. 2522 (1979). *The Government Gazette*. Vol. 96, Part 79, p. 10.
- Grenard, J. L., Dent, C. W., & Stacy, A. W. (2013). Exposure to alcohol advertisements and teenage alcohol-related problems. *Pediatrics*, 131(2), e369–e379. <https://doi.org/10.1542/peds.2012-1480>.
- Huckle, T., Casswell, S., Mackintosh, A.-M., Chaiyasong, S., Viet Cuong, P., Morojele, N., Parry, C. D. H., Meier, P., Holmes, J., Callinan, S., Piazza, M., Kazantseva, E., Bayandorj, T., Gray-Phillip, G., Haliday, S., Chun, S., Welch, M., Graydon-Guy, T., & Parker, K. (2018). The International Alcohol Control Study: Methodology and implementation. *Drug and Alcohol Review*, 37(S2), S10–S17. <https://doi.org/10.1111/dar.12650>
- Institute of Alcohol Studies. (2017). *Marketing and alcohol*. Retrieved 2019, March 22, from <http://www.ias.org.uk/uploads/pdf/Factsheets/FS%20Marketing%2012017.pdf>
- Jernigan, D., Noel, J., Landon, J., Thornton, N., & Lobstein, T. (2017). Alcohol marketing and youth alcohol consumption: A systematic review of longitudinal studies published since 2008. *Addiction*, 112 Suppl 1, 7–20. <https://doi.org/10.1111/add.13591>.
- Jones, S. C., & Magee, C. A. (2011). Exposure to alcohol advertising and alcohol consumption among Australian adolescents. *Alcohol and Alcoholism*, 46(5), 630–637. <https://doi.org/10.1093/alcacr/agr080>.
- Kaewkaew J., Krirkgulthor, T., Yingrengreung S., & Singhprapai P. (2012). *Perceptions of alcohol marketing communication and alcohol consumption behaviour of Thai adolescents*. Center for Alcohol Studies.
- Kaewpramkusol, R., Senior, K., Nanthamongkolchai, S., & Chenhall, R. (2019). A qualitative exploration of the Thai alcohol policy in regulating alcohol industry's marketing strategies and commercial activities. *Drug and Alcohol Review*, 38(1), 25–33. <https://doi.org/10.1111/dar.12885>.
- Kotler, P., Kartajaya, H., & Setiawan, I. (2010). *Marketing 3.0: From products to customers to the human spirit*. Wiley.
- Lobstein, T., Landon, J., Thornton, N., & Jernigan, D. (2017). The commercial use of digital media to market alcohol products: A narrative review. *Addiction*, 112(S1), 21–27. <https://doi.org/10.1111/add.13493>
- Loysmu S. (2012). *Impact and problems of alcohol advertising on television in Thai adolescents*. Nonthaburi: Center for Alcohol Studies.
- Mart, S. M. (2011). Alcohol marketing in the 21st century: New methods, old problems. *Substance Use & Misuse*, 46(7), 889–892. <https://doi.org/10.3109/10826084.2011.570622>
- McClure, A. C., Stoolmiller, M., Tanski, S. E., Engels, R. C. M. E., & Sargent, J. D. (2013). Alcohol marketing receptivity, marketing-specific cognitions, and underage binge drinking. *Alcohol: Clinical and Experimental Research*, 37(s1), E404–E413. <https://doi.org/10.1111/j.1530-0277.2012.01932.x>
- Morgenstern, M., Sargent, J. D., Sweeting, H., Faggiano, F., Mathis, F., & Hanewinkel, R. (2014). Favourite alcohol advertisements and binge drinking among adolescents: A cross-cultural cohort study. *Addiction*, 109(12), 2005–2015. <https://doi.org/10.1111/add.12667>.
- Morojele, N. K., Lombard, C., Harker Burnhams, N., Petersen Williams, P., Nel, E., & Parry, C. D. H. (2018). Alcohol marketing and adolescent alcohol consumption: Results from the International Alcohol Control study (South Africa). *South African Medical Journal*, 108(9), 782–788. <https://doi.org/10.7196/SAMJ.2018.v108i9.12958>.
- National Statistical Office (2017). *The smoking and drinking behavior survey 2017*. Bangkok: National Statistical Office of Thailand. <http://www.nso.go.th/sites/2014en/Survey/social/health/SmokingDrinking/2017/Full%20Report.pdf>
- National Statistical Office (2019). *The 2020 household survey on the use of television and radio*. Bangkok: National Statistical Office of Thailand. [http://www.nso.go.th/sites/2014en/Survey/ICT/Survey%20In%20Household/2020/fullreport\\_63.pdf](http://www.nso.go.th/sites/2014en/Survey/ICT/Survey%20In%20Household/2020/fullreport_63.pdf)
- Notification of the Alcoholic Beverage Control Committee. *Re: Pattern and method for the display of symbol of alcoholic beverage or symbol of the company manufacturing the alcoholic beverage B.E. 2553* (2010, February 27). The Alcoholic Beverage Control Committee. pp. 28–29.
- Noel, J. K., Rosenthal, S. R., & Sammartino, C. J. (2022). Exposure to alcohol marketing and alcohol-related consequences in young adults. *Substance Use & Misuse*, 57(7), 1156–1159. <https://doi.org/10.1080/10826084.2022.2063894>
- Patil, S., Wimpenny, E. M., Elliott, M. N., Rohr, C., & Nolte, E. (2014). Youth exposure to alcohol advertising on television in the UK, the Netherlands and Germany. *European Journal of Public Health*, 24(4), 561–565. <https://doi.org/10.1093/eurpub/cku060>
- Rehm, J. C. D., Room, R., & Lopez, A. (2006). Alcohol. In Lamison, D.T., Breman, J. G., Measham, A. R., Alleyne,

- G., Claeson, M., Evans, D. B., Jha, P., Mills, M., & Musgrove, P. (Eds.), *Disease control priorities in developing countries* (pp. 887–906). The World Bank and Oxford University Press.
- Smith, L. A., & Foxcroft, D. R. (2009). The effect of alcohol advertising, marketing and portrayal on drinking behaviour in young people: systematic review of prospective cohort studies. *BMC Public Health*, 9(1), 51. <https://doi.org/10.1186/1471-2458-9-51>.
- Stautz, K., Frings, D., Alberty, I. P., Moss, A. C., & Marteau, T. M. (2017). Impact of alcohol-promoting and alcohol-warning advertisements on alcohol consumption, affect, and implicit cognition in heavy-drinking young adults: A laboratory-based randomized controlled trial. *British Journal of Health Psychology*, 22(1), 128–150. <https://doi.org/10.1111/bjhp.12221>
- Tanski, S. E., McClure, A. C., Li, Z., Jackson, K., Morgenstern, M., Li, Z., & Sargent, J. D. (2015). Cued recall of alcohol advertising on television and underage drinking behavior. *JAMA Pediatrics*, 169(3), 264–271. <https://doi.org/10.1001/jamapediatrics.2014.3345>.
- Thaikla K. (2007). *Comparative study of density of liquor stores within 500 meters radius around educational institutions and drinking behaviors of students*. Nonthaburi: Center for Alcohol Studies. <https://kb.hsri.or.th/dspace/handle/11228/5444>
- Thamarangsi, T., Pitayarangsarit, S., Iam-anan, P., Phulkerd, S & Pongutta, S., et al. (2011). Gaps and opportunities in addressing non communicable diseases in Thailand with WHO's Best Buys and Good Buys interventions. *Journal of Health Systems Research*, 5(4), 400–438.
- Treerutkuarkul A. (2017). Moving Thailand's mountain of alcohol-related harm. *Bulletin of the World Health Organization*, 95, 487–488. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5487977/pdf/BLT.17.020717.pdf>
- Vantamay N. (2012). The impacts of alcohol marketing communications on cognitive, affective, and behavioral responses among Thai youth in Bangkok. *International Journal of Business and Social Science*, 3, 286–295. [https://ijbssnet.com/journals/Vol\\_3\\_No\\_18\\_Special\\_Issue\\_September\\_2012/34.pdf](https://ijbssnet.com/journals/Vol_3_No_18_Special_Issue_September_2012/34.pdf)
- Winpenny, E., Patil, S., Elliott, M., van Dijk, L. V., Hinrichs, S., Marteau, T., & Nolte, E. (2012). *Assessment of young people's exposure to alcohol marketing in audiovisual and online media*. Rand.org. 2012, September 01. [https://www.rand.org/pubs/external\\_publications/EP51136.html](https://www.rand.org/pubs/external_publications/EP51136.html)
- World Health Organization (WHO). (2014). *Global status report on alcohol and health*. WHO. <https://www.afro.who.int/publications/global-status-report-alcohol-and-health-2014#:~:text=The%20Global%20status%20report%20on%20policy%20responses%20in%20Member%20States>.
- WHO. (2018). *Global status report on alcohol and health 2018*. WHO. <https://www.who.int/publications/i/item/9789241565639>
- WHO. (2019). *Enforce bans or comprehensive restrictions on alcohol advertising, sponsorship, and promotion*. Retrieved 22 March 2022 from <https://www.who.int/initiatives/SAFER/alcohol-advertising>
- WHO. (2019). *The SAFER technical package: Five areas of intervention at national and subnational levels*. WHO. <https://www.who.int/publications/i/item/9789241516419>
- WHO. (2022, 9 May 2022). *Alcohol*. World Health Organization. Retrieved 12 January 2022 from <https://www.who.int/news-room/factsheets/detail/alcohol>