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The Regulation of Alcohol Marketing: From Research to Public Health Policy

Guest editors:

Thomas F. Babor, David Jernigan, Chris Brookes

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Alcohol marketing regulation: from research to public policy

INTRODUCTION

Alcohol marketing, promotion and sponsorship are widespread in most of the world today. Alcohol marketing is evolving constantly and utilizes multiple channels, including youth-oriented radio, television, sports events and popular music concerts, websites, social media, mobile phones and product placements in movies and TV shows. Marketers are moving increasingly to digital and social media, where efforts at regulation have fallen far behind industry innovations in producing audience engagement and brand ambassadorship.

Alcohol is a psychoactive substance with numerous negative consequences to the health and wellbeing of consumers as well as others affected by drinkers' behavior. With the advent of recent restrictions on tobacco marketing as a result of the Framework Convention on Tobacco Control, no other legal product with such potential for harm is as promoted and advertised in the world. Most countries have no statutory legislation regulating the exposure of children or adults to alcohol marketing, so they must rely only upon self-regulatory codes developed and implemented by the alcohol industry [1].

Harmful use of alcohol is increasing among young people and women in some regions of the world, especially in the Americas region [2,3]. Given the causal role of harmful use of alcohol in negative health outcomes to drinkers and others (regardless of their drinking status), the promotion of alcohol consumption by means of marketing needs to be controlled by governments as part of their duty to protect the health of their populations, particularly among the most vulnerable groups.

In 2010, the World Health Assembly (WHA) adopted the Global Strategy to Reduce the Harmful Use of Alcohol (WHA 63.13)[4]. Among the guiding principles of the Global Strategy, three are particularly relevant to alcohol marketing control. The first is that preventing and reducing the harmful use of alcohol is a public health priority; another is the importance of protecting populations at high risk of alcohol-attributable harm; and the third is that children, teenagers and adults who choose not to drink alcoholic beverages have the right to be supported in their non-drinking behavior and protected from pressures to drink.

The World Health Organization's [4] global strategy has 10 areas for policy action, including one on marketing of alcoholic beverages (area 6). For this area, the policy options and interventions include:

- (a) Setting regulatory or coregulatory frameworks, preferably with a legislative basis, and supported when appropriate by self-regulatory measures, for alcohol marketing by:
 - (i) regulating the content and the volume of marketing;
 - (ii) regulating direct or indirect marketing in certain or all media;
 - (iii) regulating sponsorship activities that promote alcoholic beverages;
 - (iv) restricting or banning promotions in connection with activities targeting young people; and
 - (v) regulating new forms of alcohol marketing techniques, for instance social media.
- (b) Development by public agencies or independent bodies of effective systems of surveillance of marketing of alcohol products.
- (c) Setting up effective administrative and deterrence systems for infringements on marketing restrictions.

Many governments have attempted to protect young people in particular from inappropriate exposure to alcohol marketing through regulations. These have ranged from total marketing bans to voluntary self-regulation using industry codes of practice [5]. Thus far, however, the industry's codes of practice have been ineffective in protecting individuals from potentially harmful exposure [6].

In 2011, the Directing Council of the Pan American Health Organization (PAHO) adopted a regional plan of action in line with the WHO Global Alcohol Strategy. PAHO then created a regional network of focal points responsible for alcohol issues in Ministries of Health in order to discuss gaps and establish priorities. In two meetings of the network, held in 2012 and 2014, alcohol marketing regulation was identified as a priority for action and further technical guidance.

In line with the above initiatives, PAHO organized an exploratory meeting in January 2015 to discuss the situation in the Region and globally, and to consider possibilities for moving forward in assisting Member States [3]. Because of the global nature of alcohol marketing, participants from several regions of the world came together to review relevant experience, evidence and policies.

The information shared at the meeting was considered to be of such relevance to a global audience that participants agreed to submit their background manuscripts to a peer-reviewed journal. This Supplement to *Addiction* now presents this collection of 13 papers and one editorial comment [7].

The papers represent the highest level of scholarly attention devoted to this issue that has been brought together in the pages of one scientific journal. Three compelling themes emerge from this collection of systematic and narrative reviews, original research, commentaries, editorial statements and debate pieces. The first theme is because alcohol marketing contributes to the initiation of drinking and alcohol-related problems in adolescents and other vulnerable groups, its regulation can be justified on the grounds of public health, public safety and human rights. The second is that the current range of national responses, including legally binding partial bans (e.g. some type of beverage, some media, some hours and places, some sponsorship and promotion restrictions or some restrictions on product placement) and industry self-regulation, is insufficient in fulfilling the public health mission for which it was designed. The third theme is that there are several reasonable and promising options that can be considered by governments and civil society organizations to address this issue, including public health protections in trade agreements and statutory regulations on marketing at the national and international levels, similar to those adopted by governments to address the problem of controlling marketing of tobacco and breast milk substitutes.

THEME ONE: ALCOHOL MARKETING CAUSES HARM TO VULNERABLE POPULATIONS

Moral philosopher Chapman [8] describes the legal and moral case against alcohol marketing to which children and adolescents are frequently exposed, tracing the evolution of international law and other measures designed to protect vulnerable populations from the marketing of potentially harmful products. In a related paper, Babor *et al.* [9] consider the public health implications of an expanded definition of vulnerability as it relates not only to alcohol marketing reaching children and adolescents, but also pregnant women and people with alcohol dependence.

Jernigan and colleagues [10] reviewed the recent literature on the association between alcohol marketing and youth drinking, focusing upon newer studies using sophisticated longitudinal designs. The systematic review identified 12 new studies reporting findings from nine unique cohorts including more than 35 000 people across several countries. All studies found a significant association between youth exposure to alcohol marketing and subsequent drinking behavior.

These findings are similar to the results of a narrative review of digital marketing studies conducted by Lobstein and colleagues [11]. Their review of the scientific evidence and policy literature concludes that marketing through digital media uses approaches that are attractive to young

people and for this reason it is likely to have an impact on their drinking behavior. Moreover, the authors suggest that current marketing regulations are likely to be undermined by the commercial use of digital media.

THEME TWO: INDUSTRY SELF-REGULATION IS INEFFECTIVE IN PROTECTING VULNERABLE POPULATIONS

The issue of self-regulatory codes is an important component of the discussion on alcohol marketing control in this Supplement. Several papers by Jonathan Noel and colleagues evaluate the legal history and current research [6,12–19] on industry self-regulation of alcohol marketing. A systematic review of the literature [12] demonstrates that the industry codes are largely ineffective in reducing youth exposure to potentially harmful sales promotions. Of the 19 studies evaluating a specific marketing code and 25 content analysis studies reviewed, all detected content that could be considered potentially harmful to children and adolescents, including themes that appeal strongly to young men. Of the 57 studies of alcohol advertising exposure, high levels of youth exposure and high awareness of alcohol advertising were found for television, radio, print, digital and outdoor advertisements. In a literature comprising more than 100 studies, none were identified that supported the effectiveness of industry self-regulation programs.

Another review [6] showed that the industry's complaint process fails to address the need to remove marketing materials that have been identified as non-compliant with industry codes. To illustrate this point, a study on alcohol marketing in selected countries of the Americas and Spain during the 2014 FIFA World Cup [13] demonstrates the massive exposure and lack of compliance by numerous national and transnational producers who marketed alcoholic beverages during this global event.

Taken together, the papers dealing with multiple aspects of the alcohol industry's self-regulation activities indicate that the current self-regulatory systems governing alcohol marketing practices are not meeting their intended goal of protecting vulnerable populations.

THEME THREE: ALTERNATIVES ARE AVAILABLE TO ADDRESS THE PROBLEM

An evaluation of the French Loi Évin described by Galopel and colleagues [15] provides insight into marketing controls considered to be more effective than industry self-regulation. It suggests that while laws strictly limiting the promotion of alcohol products may have been successful in preventing certain kinds of potentially harmful marketing, legislative inaction and industry weakening of the

1991 legislation may have reduced its effectiveness. Similarly, a case study prepared by legal scholar Vendrame [16] documents a failed attempt by public health authorities to change the current marketing law of Brazil. Because the law excludes beer and many wines from any control, it allows children and adolescents to be exposed to massive alcohol marketing on television and radio.

Landon and colleagues [17] discuss the implications of international codes and agreements for the control of alcohol marketing. Legally binding global health treaties and non-binding codes have been developed to restrict the marketing of tobacco, breast milk substitutes and unhealthy foods, based on evidence of a public health crisis. Under the umbrella of international public health treaties and codes, national governments can strengthen their own legislation, assisted by technical support from international agencies and non-governmental organizations (NGOs). Having commercial operators account for their marketing practices is a critical element in the continued development and strengthening of public health policies that may ultimately require a global agreement on alcohol marketing. Finally, the implications of international trade and investment agreements on alcohol policy [18] are discussed in terms of their possible effects on the control of alcohol marketing.

Despite the promise of public health measures to limit exposure to alcohol marketing, several papers suggest the difficulties of implementing effective policies because of the opposition of the alcohol industry [15,16,19] which, in itself, could constitute an important agenda for future research that will be needed to guide policy [7].

CONCLUSION

Using a broad public health perspective to describe the issues surrounding the marketing of alcoholic beverages, the papers in this Supplement provide a wealth of information to support renewed action by governments to control alcohol marketing with statutory measures, independent of the alcohol industry's self-regulatory programs, implemented and monitored by governments and/or civil society organizations with a primary interest in public health and the prevention of alcohol problems. To the extent that remedial action is needed urgently, the way forward is described clearly in the concluding paper to this Supplement [20].

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Declaration of interests

None.

MARISTELA G. MONTEIRO¹, THOMAS F. BABOR²,
DAVID JERNIGAN³ & CHRIS BROOKES⁴

*Pan American Health Organization, Washington, DC, USA,¹
Department of Community Medicine and Health Care, University of
Connecticut School of Medicine, Farmington, CT, USA,² Department
of Health, Behavior and Society, Johns Hopkins Bloomberg School
of Public Health, Baltimore, MD, USA³ and UK Health Forum,
London, UK⁴
E-mail: monteirm@paho.org*

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Alcohol marketing and youth alcohol consumption: a systematic review of longitudinal studies published since 2008

David Jernigan¹, Jonathan Noel², Jane Landon³, Nicole Thornton¹ & Tim Lobstein⁴

Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA,¹ Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington, CT, USA,² UK Health Forum, London, UK³ and Public Health Advocacy Institute of Western Australia, Curtin University, Perth, WA, Australia⁴

ABSTRACT

Background and Aims Youth alcohol consumption is a major global public health concern. Previous reviews have concluded that exposure to alcohol marketing was associated with earlier drinking initiation and higher alcohol consumption among youth. This review examined longitudinal studies published since those earlier reviews. **Methods** Peer-reviewed papers were identified in medical, scientific and social science databases, supplemented by examination of reference lists. Non-peer-reviewed papers were included if they were published by organizations deemed to be authoritative, were fully referenced and contained primary data not available elsewhere. Papers were restricted to those that included measures of marketing exposure and alcohol consumption for at least 500 underage people. Multiple authors reviewed studies for inclusion and assessed their quality using the National Heart, Lung and Blood Institute's Quality Assessment Tool for Observation Cohort and Cross-Sectional Studies. **Results** Twelve studies (ranging in duration from 9 months to 8 years), following nine unique cohorts not reported on previously involving 35 219 participants from Europe, Asia and North America, met inclusion criteria. All 12 found evidence of a positive association between level of marketing exposure and level of youth alcohol consumption. Some found significant associations between youth exposure to alcohol marketing and initiation of alcohol use (odds ratios ranging from 1.00 to 1.69), and there were clear associations between exposure and subsequent binge or hazardous drinking (odds ratios ranging from 1.38 to 2.15). Mediators included marketing receptivity, brand recognition and alcohol expectancies. Levels of marketing exposure among younger adolescents were similar to those found among older adolescents and young adults. **Conclusions** Young people who have greater exposure to alcohol marketing appear to be more likely subsequently to initiate alcohol use and engage in binge and hazardous drinking.

Keywords Adolescents, advertising, alcohol, marketing, self-regulation, youth.

Correspondence to: David Jernigan, Johns Hopkins Bloomberg School of Public Health, 624 North Broadway, Room 292, Baltimore, MD 21205, USA. E-mail: djernigan@jhu.edu

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INTRODUCTION

Globally, alcohol consumption caused 7% of death and disability among young people aged 10–24 years in 2004, the most recent year for which estimates are available [1]. The World Health Organization (WHO) reported in 2010 that heavy episodic drinking (defined as at least monthly consumption of 60 g or more of alcohol on a single occasion) is more prevalent, on average, among 15–19-year-olds world-wide (11.7%) than among the general adult population (7.5%), although there are significant regional variations [2].

Given the high prevalence of risky drinking and alcohol-related harm among young populations, delaying alcohol initiation and preventing heavy use by young people is a public health priority. Alcohol producers agree, and the leading global producers have stated that: 'we strongly oppose marketing or sale of our products to underage youth' ([3], p. 36).

To accomplish this, alcohol marketers have detailed self-regulatory codes regarding placement and content of their advertising, including restrictions to prevent youth exposure and to prevent content that appeals to or targets youth [4], implying that alcohol marketing can affect youth decisions about drinking. There is, however, substantial

evidence of youth exposure to alcohol marketing, in some cases at rates higher than adults [5–7]. However, global producers have argued that existing evidence demonstrating associations between alcohol marketing exposure and alcohol consumption is: ‘very weak and does not make a compelling case that advertising causes harmful drinking’ [8].

The last published reviews of the evidence regarding alcohol marketing’s effects on youth drinking were conducted in 2008 and published in 2009. Smith & Foxcroft examined seven cohort studies with more than 13 000 participants, all of which demonstrated significant effects of alcohol marketing on consumption across a range of different exposure variables and outcome measures. Anderson *et al.* [9] identified 13 longitudinal studies investigating the relationship between adolescent exposure to alcohol advertising and promotion and drinking. Twelve found evidence that such exposure predicts both onset of drinking among non-drinkers and increased levels of consumption among existing drinkers, while the 13th found increased intentions to use alcohol, although the authors concluded that participants were too young for drinking initiation to show an effect [10]. An expert Science Group, established in 2008 by the European Commission’s European Alcohol and Health Forum and including industry representatives, also reviewed the literature and agreed, concluding: ‘Based on the consistency of findings across the studies, the confounders controlled for, the dose–response relationships, as well as the theoretical plausibility and experimental findings regarding the impact of media exposure and commercial communications,... alcohol marketing increases the likelihood that adolescents will start to use alcohol, and to drink more if they are already using alcohol’ ([11], p.2).

Since the publication of these reviews, there have been numerous industry innovations in reaching and engaging potential consumers through digital and traditional channels [12]. Subsequently, several additional studies have been conducted on the effects of alcohol marketing. Therefore, the purpose of this review was to review and summarize longitudinal research published since 2008 to inform current debates regarding regulation of commercial alcohol marketing activities. These studies have examined youth exposure to alcohol marketing in a wide range of venues and formats, including traditional print and broadcast channels as well as new (digital) media; outdoor advertisements; product placements within television shows, films and song lyrics; in-store and price promotions; branded merchandise; celebrity endorsements; and sporting and musical event sponsorship.

METHODS

Searches were conducted through MEDLINE (PubMed), Web of Science, CINAHL and PsycINFO in November

2014. The searches were repeated in January 2015 and March 2016. English-language papers published from 2008 to early 2016 were searched using the following terms: ‘youth alcohol use’ OR ‘youth alcohol consumption’ OR ‘youth drinking’ OR ‘underage drinking’ OR ‘underage alcohol consumption’ OR (youth* AND alcohol*) OR (youth* and drinking*) AND media exposure OR media OR TV OR radio OR advertising OR marketing OR film OR movie* OR lyrics OR event sponsorship OR sponsorship.

Papers returned for these search terms were assessed for relevance. Studies were not included if their abstracts or titles did not refer to the possibility of an association between alcohol advertising and youth alcohol consumption. Final review was conducted on full texts of papers meeting this criterion. The initial search was conducted by N.T.; abstracts and full papers were reviewed by D.J. and T.L. The second search and review were conducted by T.L., and the third by D.J. Reference lists of included articles were examined for additional citations, including non-peer-reviewed studies, not included in the search results.

Studies were included in the final review if they were based on original data and included at baseline measures of youth exposure to alcohol marketing. Exposure could consist of self-reported exposure, such as watching television content known to contain alcohol advertising, cued and un-cued recall of advertisements, liking of advertisements, recall of engagement with internet marketing and branded websites and brand allegiance, or population-level exposure as reported by designated market area by market research firms. Studies also needed to use, at baseline and follow-up, validated measures of self-reported drinking behaviour for at least 500 participants under the relevant minimum legal purchase age for alcohol. Drinking behaviour included initiation of alcohol use and/or binge drinking, past 30-day drinking, frequency and/or quantity of drinks consumed in the past 30 days and/or alcohol-related problems. Studies were included only if they used self-reported and observed actual alcohol use or alcohol-related behaviour such as binge drinking or drunkenness, as opposed to measures of intentions to consume, which are weak, indirect indicators of actual consumption behaviour [13], and may miss valuable information about patterns of drinking (e.g. binge drinking).

Because the purpose of the present study was to summarize and review evidence published since 2008, the papers cited in the systematic reviews by Smith & Foxcroft [14], Anderson *et al.* [9] and the Science Group of the European Alcohol and Health Forum [11] were excluded. Studies that examined the influence of social networking and digital media on drinking behaviour were also excluded unless they identified clearly that the social networking content originated from or was encouraged specifically by alcohol marketers. Studies of the influence

of alcohol use in media, such as actors drinking alcohol in films or TV shows, were excluded unless they specifically included advertising or commercial marketing practices.

Published versions of all studies were obtained and reviewed by T.S., D.J. and J.N.; data were extracted from these versions. From each study, we sought data on country and year of baseline data collection, number and age of participants at baseline, study duration, attrition at follow-up, marketing variables (principal independent variables) and drinking outcomes, including initiation of drinking or binge drinking, progression to binge or hazardous drinking and/or drinking consequences, including odds ratios of changes in drinking behaviour or consequences at follow-up.

Study quality was assessed using the National Heart, Lung, and Blood Institute's Quality Assessment Tool for Observation Cohort and Cross-Sectional Studies [15]. Each study was rated by two public health professionals. The sum of positive responses (= 1) from each rater was calculated for each paper, with potential values ranging from 0 to 14. Inter-rater reliability, measured using De Vries *et al.*'s [16] pooled kappa, was considered substantial ($\kappa_{\text{pooled}} = 0.845$). A study was determined to meet a study quality criterion if both raters agreed the criterion was present, and a study quality criterion was not met if at least one rater determined that the criterion was absent. Because of the diversity of outcomes studied, data were reported but not synthesized and a meta-analysis was not attempted.

RESULTS

The numbers of papers returned by the search and those that met the selection criteria are shown in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram in Fig. 1. Twelve longitudinal studies following nine cohorts not reported on previously were identified. These cohorts not reported on previously involved 35 219 unique participants from seven countries: Germany (four studies), Italy (three), the Netherlands (two), Poland (three), Scotland, UK (four), Taiwan (one) and the United States (four). One study [17] was a follow-up of a cohort reported on previously by Anderson *et al.* [9]. Two studies reported by De Bruijn *et al.* [18] examined exposure to different marketing media among the same cohort. Similarly, Gordon *et al.* [19] and Harris *et al.* [20] reported separate analyses of the same cohort, as did Tanski *et al.* [21] and McClure *et al.* [22]. Table 1 lists the studies, with details of the country in which the study took place, the year the baseline data were collected, the age range of the youth studied, the advertising form being assessed, the main results and the authors' summary conclusion.

Measures of marketing exposure differed across studies, as research groups explored a variety of different hypotheses for how alcohol marketing may influence youth drinking behaviour. These measures ranged from population-level exposures, as imputed from the participants' place of residence and market research studies

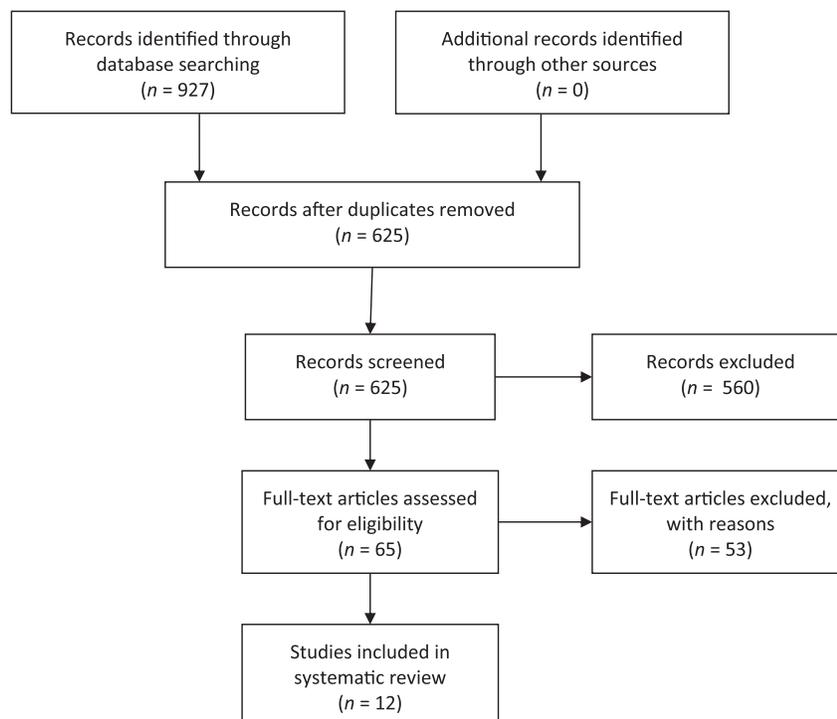


Figure 1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram of articles reviewed

Table 1 Summary of longitudinal studies published since 2009 investigating the relationship between alcohol marketing and youth alcohol consumption.

<i>Source, reference, country and year of baseline data collection</i>	<i>Number and age of participants at baseline</i>	<i>Study duration</i>	<i>Marketing variables</i>	<i>Summary</i>	<i>Authors' conclusion</i>
Chang <i>et al.</i> [42], Taiwan 2010	2315 youth aged 15–17 years	One year	Recall of exposure to branded and unbranded alcohol promotion in four media	Students from 26 high schools in Taipei, Taiwan were assessed in the 10th grade with follow-up conducted in the 11th grade. Self-administered questionnaires were collected in 2010 and 2011 to assess the patterns of change in youth alcohol drinking behaviours, media exposure to alcohol and risk and protective factors. Media exposure included questions on advertising on TV, print media and outdoor media, plus questions on the use of alcohol in TV shows and movies, and in internet social media discussions. Results: of 1712 non-drinking students in the 10th grade, 285 (16.6%) had initiated drinking by the 11th grade. Of the 590 drinkers in the 10th grade, 396 (67.1%) were drinking persistently by the 11th grade. When other potential confounders were accounted for, greater media exposure to alcohol advertising in the 10th grade was associated significantly with the initiation of alcohol use, and when combined with an increase in media exposure from 10th to 11th grades, this was significantly associated with the persistence of alcohol use	Exposure to alcohol advertising in the media was associated with both the initiation and the persistence of alcohol use by youth
De Bruijn <i>et al.</i> [18], Germany, Italy, the Netherlands, Poland 2010–11	6651 adolescents, with mean age 13.95 years	14–15 months	Recall of levels of engagement with on-line marketing activities	Youngsters in four European countries reported to be exposed frequently to on-line alcohol marketing. Results: adjusting for relevant confounders, higher reported exposure to on-line alcohol marketing was significantly associated with expecting to drink alcohol and actual drinking in the previous 30 days. This effect was found to be consistent in all four countries	The association between marketing exposure and adolescents' alcohol expectancies and drinking was robust and seems consistent in several national contexts
De Bruijn <i>et al.</i> [18], Germany, Italy, the Netherlands, Poland 2010–11	6652 adolescents, with mean age 13.9 years	14–15 months	Viewing of sports events (with known levels of alcohol sponsorship)	Youngsters in four European countries reported their viewing of TV sports events. Alcohol marketing in these events was calculated from known sponsorship ties. Results: higher exposure to alcohol-branded sports sponsorship was found to be associated significantly with alcohol drinking intentions and actual drinking in the previous 30 days. The association	Exposure to sports sponsorship can predict future drinking. Policymakers are recommended to take action on alcohol marketing via sports events

(Continues)

Table 1. (Continued)

Source, reference, country and year of baseline data collection	Number and age of participants at baseline	Study duration	Marketing variables	Summary	Authors' conclusion
Gordon <i>et al.</i> [19], Scotland, UK 2006–07	552 youth aged 12–14 years, with mean age 13	Two years	Prompted recall of 15 marketing media formats	between this exposure and adolescents' alcohol expectancies and drinking was robust, even when controlling for national differences and demographics Data were gathered on exposure to multiple forms of alcohol marketing (advertisements and promotions from TV/cinema, posters/billboards, newspapers/magazines, in-store price promotions; sports-related sponsorship and clothing; e-mail, websites, mobile phone/computer screensaver and social networking sites; music sponsorship, TV/film sponsorship, celebrity endorsements and product design) and measures of drinking initiation, frequency and consumption. Results: at follow-up, logistic regression demonstrated that, after controlling for confounding variables, involvement with alcohol marketing at baseline was predictive of both uptake of drinking and increased frequency of drinking. Awareness of marketing at baseline was associated with increased frequency of drinking at follow-up	The authors are concerned whether the current regulatory environment affords youth sufficient protection from alcohol marketing
Grenard <i>et al.</i> [17], USA Date not given	3890 students, beginning in 7th grade (aged 11–12 years) and continuing through 10th grade (aged 14–15 years)	Four years	TV exposure and TV advertisement prompted recall	Data collected included several measures of exposure to alcohol advertising, alcohol use, problems related to alcohol use and a range of covariates, such as age, drinking by peers, drinking by close adults, playing sports, general TV viewing, acculturation, parents' jobs and parents' education. Results: structural equation modelling of alcohol consumption showed that exposure to alcohol advertisements and/or liking of those advertisements in 7th grade were predictive of the latent growth factors for alcohol use (previous 30 days and previous 6 months) after controlling for covariates. In addition, there was a significant total effect for boys and a significant mediated effect for girls of exposure to alcohol advertisements and liking of those advertisements in 7th grade through latent	Alcohol advertisement exposure and the affective reaction to those advertisements influence some youth to drink more and experience drinking-related problems later in adolescence

(Continues)

Table 1. (Continued)

Source, reference, country and year of baseline data collection	Number and age of participants at baseline	Study duration	Marketing variables	Summary	Authors' conclusion
Harris <i>et al.</i> [20], 2015, Scotland 2006–07	552 youth aged 12–14 at baseline	Two years	Unaided alcohol brand recognition, aided brand recognition, number of alcohol brands able to list unaided	<p>growth factors for alcohol use on alcohol-related problems in 10th grade. Measures of exposure at time 1 were also associated with the increasing use of alcohol over time and the development of alcohol-related problems at time 4</p> <p>In an extension of the findings of Gordon <i>et al.</i>, measures of consumer socialization to alcohol brands (in the form of aided and unaided brand recognition and brand saliency) were collected along with data on hazardous drinking, defined as 6 or more units on the last occasion in the past 30 days (for boys) or 5 or more for girls. Results: at wave 1, the more channels through which adolescents had seen alcohol marketing, the higher their level of consumer socialization. At wave 2, hazardous drinking at age 15 was predicted by two measures of consumer socialization at 13: unaided brand recognition and brand saliency</p> <p>Respondents were asked if they recalled web advertising for alcohol, had ever been to an alcohol company website, could recognize any of five alcohol brand home page images and had become an on-line fan of any alcoholic beverages; these were combined into an internet marketing receptivity score. Outcome measures were ever drinking and ever binge drinking (six or more drinks on one occasion). Results: higher receptivity to internet alcohol marketing was associated positively with transition to binge drinking even after controlling for sensation-seeking, peer alcohol use and age. Compared with non-receptive youth, those with higher receptivity scores were 1.77–2.15 times more likely to report binge drinking at follow-up; higher receptivity scores were not associated with drinking initiation among baseline non-drinkers</p>	Marketing acts as a significant influencing agent in the consumer socialization of adolescents to alcohol. The current policy and regulatory environment is not protecting children adequately
McClure <i>et al.</i> [22], 2016, USA 2011–13	2012 youth aged 15–20 at baseline	Two years	Internet alcohol marketing receptivity, including recall, engagement, recognition of alcohol home page images, and being an on-line fan	<p>alcohol, had ever been to an alcohol company website, could recognize any of five alcohol brand home page images and had become an on-line fan of any alcoholic beverages; these were combined into an internet marketing receptivity score. Outcome measures were ever drinking and ever binge drinking (six or more drinks on one occasion). Results: higher receptivity to internet alcohol marketing was associated positively with transition to binge drinking even after controlling for sensation-seeking, peer alcohol use and age. Compared with non-receptive youth, those with higher receptivity scores were 1.77–2.15 times more likely to report binge drinking at follow-up; higher receptivity scores were not associated with drinking initiation among baseline non-drinkers</p> <p>Exposure to alcohol and non-alcohol advertising was measured at baseline with masked images of 17</p>	Internet alcohol marketing receptivity was associated with underage binge drinking even after controlling for internet time. Internet marketing may be important in transitions to problematic outcomes in the subset of drinkers who are more highly engaged in and seek out on-line marketing
Morgenstern <i>et al.</i> [43], Germany 2008	21 30 6th to 8th grade students,	Nine months	Prompted recall of TV commercials	Exposure to alcohol and non-alcohol advertising was measured at baseline with masked images of 17	More favourable attitudes about alcohol may be one path through which alcohol

(Continues)

Table 1. (Continued)

Source, reference, country and year of baseline data collection	Number and age of participants at baseline	Study duration	Marketing variables	Summary	Authors' conclusion
	non-drinking at baseline, aged 11–17 years, with mean age 12.2 years			commercial advertisements with all brand information digitally removed; students indicated contact frequency and brand names. Outcome measures were positive attitudes toward alcohol, current alcohol use and life-time binge drinking. Results: a total of 581 of the students (28%) started to drink alcohol during the observation period. Alcohol use initiation was related positively to baseline alcohol advertisement exposure. This effect of alcohol advertisement exposure on alcohol use was mediated by a change in alcohol-related attitudes, partially, which explained about 35% of the total effect. The analysis revealed similar results for binge drinking initiation	advertising exerts behavioural influence. The study supports policy measures to reduce exposure (e.g. through advertising bans) as well as intervention techniques that focus on the processing of advertising contents
Morgenstern <i>et al.</i> [25], Germany, Italy, Poland, Scotland 2009–10	7438 adolescents non-binge drinking at baseline, with mean age 13.5 years	12 months	Allegiance to a favourite brand	Pupils were asked the brand of their favourite alcohol advertisement at baseline. Multi-level mixed-effects logistic regressions assessed relationships between having a favourite alcohol advertisement ('alcohol marketing receptivity') and (a) binge drinking at baseline; and (b) initiating binge drinking during follow-up among never binge drinkers. Results: life-time binge drinking prevalence at baseline was 29.9%, and 25.9% initiated binge drinking during follow-up. Almost one-third of the baseline sample (32.1%) and 22.6% of the follow-up sample of never bingers named a branded favourite alcohol advertisement, with high between-country variation in brand named. Alcohol marketing receptivity was related significantly to both binge drinking at baseline [adjusted odds ratio (AOR) = 2.13] and binge drinking initiation in longitudinal analysis (AOR = 1.45). There was no evidence for effect heterogeneity across countries	Among European adolescents, naming a favourite alcohol advertisement was associated with increased likelihood of initiating binge drinking during 1-year follow-up, suggesting a relationship between alcohol marketing receptivity and adolescent binge drinking
Ross [23], USA 2004–05	3576 youth aged 10–14 years	One year	Relationship of population-level exposure to alcohol advertising based on	National sample of youth collected through random digit dialling was followed for 5 years. Study examined data from waves 2 and 3, using as proxy for exposure	Relatively small amounts of alcohol advertising are associated with increased

(Continues)

Table 1. (Continued)

Source, reference, country and year of baseline data collection	Number and age of participants at baseline	Study duration	Marketing variables	Summary	Authors' conclusion
Saffer <i>et al.</i> [24], 2015, USA 2002–09	8984 youth aged 18–22 at baseline	Eight years	favourite TV channel and drinking initiation	extrapolation from favourite TV station and amount of time spent viewing television to develop, using Nielsen ratings data, a measure of the adstock (current and prior exposure to alcohol advertising, discounted retrospectively, for the past year) of each participant. Outcomes were alcohol expectancies ('If one of your friends offered you alcohol would you drink it?'; 'I think I would enjoy drinking alcohol'; 'Do you think you will drink alcohol in the next year?') and alcohol initiation ('Have you ever drunk alcohol that your parents did not know about?'). Results: among non-drinking participants, 303 initiated alcohol use between waves 2 and 3. Relationships between exposure and both expectancies and initiation were curvilinear and significant for the sample overall, and for boys but not girls	alcohol expectancies and with drinking initiation among early adolescent boys
Tanski <i>et al.</i> [21], USA 2010–11	1596 youth aged 15–23 years	Two years	Average number of advertisements per designated market area (DMA) Prompted recall of TV commercials	Annual, nationally representative sample of youth reports alcohol consumption. Advertising exposure and price effects were examined, with exposure derived from place of residence and the hours of alcohol advertisements per month on local and national TV shown in that media market as reported by commercial sources. Results: population-level elasticities increase as alcohol consumption increases, supportive of the behavioural economic theory that heavy drinkers are more responsive to alcohol advertising Respondents were questioned about 20 randomly selected masked images from TV advertisements, and an alcohol advertising receptivity score was derived (one point each for having seen the advertisement and for liking it, and two points for correct brand identification). Fast-food advertisements that aired nationally in 2010–11 were queried similarly to evaluate message specificity. Alcohol consumption measures were (a) the onset of drinking among those who never drank; (b) the onset of binge drinking among those who were never binge drinkers;	Advertising-induced alcohol consumption may not be optimal (from a behavioural economics point of view), especially for heavy drinkers. Continued high levels of alcohol advertising on TV are not in the interests of public health Receptivity to television alcohol advertising predicted the transition to multiple drinking outcomes. The findings are consistent with the idea that marketing self-regulation has failed to keep television alcohol advertising from reaching large numbers of underage persons and affecting their drinking patterns

(Continues)

Table 1. (Continued)

Source, reference, country and year of baseline data collection	Number and age of participants at baseline	Study duration	Marketing variables	Summary	Authors' conclusion
				and (c) the onset of hazardous drinking among those with an Alcohol Use Disorders Identification Test consumption subscore of less than 4. Results: underage participants were only slightly less likely than participants of legal drinking age to have seen alcohol advertisements (the mean percentages of advertisements seen were 23.4, 22.7 and 25.6%, respectively, for youth aged 15–17, 18–20 and 21–23 years). The transition to binge and hazardous drinking occurred for 29 and 18% of youth aged 15–17 years, and for 29 and 19% of youth aged 18–20 years, respectively. Among underage participants, the alcohol advertising receptivity score independently predicted the onset of drinking (AOR = 1.69), the onset of binge drinking (AOR = 1.38) and the onset of hazardous drinking (AOR = 1.49). Fast-food advertising receptivity was not associated with any drinking outcome	

documenting potential exposure from levels of advertising available in those geographic markets [23,24] to self-reported exposure imputed from television content viewed [17,18]. The remaining studies used various measures of receptivity to and/or engagement with alcohol marketing, including prompted or unprompted recall of branded and unbranded exposure, recognition of specific alcohol advertising content and/or allegiance to a favourite brand.

Significant associations between exposure to, awareness of, engagement with and/or receptivity to alcohol marketing at baseline and initiation of alcohol use, initiation of binge drinking, drinking in the previous 30 days and/or alcohol problems at follow-up were found in all studies. Periods of follow-up ranged from 9 months to 8 years. For example, Morgenstern *et al.*'s four-country study followed more than 12 000 children (average age below 13.5 years) for 1 year [25]. After controlling for differences in a wide range of possible confounding factors (age, gender, family affluence, school performance, TV screen time, personality characteristics and drinking behaviour of peers, parents and siblings), children who were familiar with alcohol branding and had a favourite brand at baseline were 45% more likely to have their first binge drinking experience at follow-up compared to those who did not meet these criteria. A 2-year study of more than 550 Scottish children aged approximately 13 years found at follow-up that awareness of advertising was not significantly predictive of subsequent drinking, but engagement—defined as taking free gifts, ownership of branded clothing or participation in alcohol websites or branded social networking sites—was [19]. Those engaged at baseline were 31% more likely to initiate drinking during the period and 43% more likely to have become frequent drinkers (at least fortnightly consumption), after controlling for a range of potential confounders.

Figure 2 is a forest plot of the odds ratios with 95% confidence intervals from the seven studies that reported them. Some studies found associations between exposure to alcohol marketing of various kinds and initiation of alcohol use, although several studies reported non-significant effects. Ross [22] found a significant association between exposure for boys but not for girls, using a curvilinear rather than a linear approach to assess the association, based on earlier literature suggesting that initiation effects are strongest at lower levels of exposure [25]. Evidence was stronger for the relationship between initiation of binge drinking or participation in binge or hazardous drinking at follow-up than for initiation of alcohol use. This is consistent with Saffer *et al.*'s theoretical and empirical argument that exposure to alcohol advertising will have the greatest effects on the heaviest drinkers over time [23].

Table 2 Results of study quality assessment.

Study	Study quality score
Chang <i>et al.</i> [42]	12
de Bruijn <i>et al.</i> [18]	11
de Bruijn <i>et al.</i> [18]	12
Gordon <i>et al.</i> [19]	11
Grenard <i>et al.</i> [17]	8
Harris <i>et al.</i> [20]	11
McClure <i>et al.</i> [22]	10
Morgenstern <i>et al.</i> [43]	12
Morgenstern <i>et al.</i> [25]	11
Ross [23]	11
Saffer <i>et al.</i> [24]	10
Tanski <i>et al.</i> [21]	9

Mean quality score (standard deviation) = 10.7 (1.2).

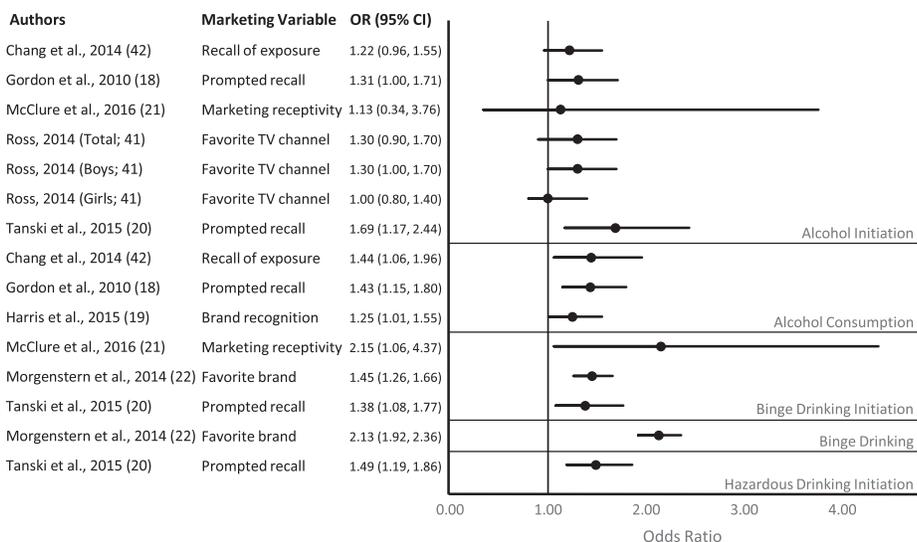


Figure 2 Forest plot of longitudinal cohort studies that supplied odds ratios and 95% confidence intervals

Table 3 Frequency of study quality criteria.

Question	Frequency (%)
Was the research question or objective in this paper clearly stated?	11 (91.7)
Was the study population clearly specified and defined?	12 (100)
Was the participation rate of eligible people at least 50%?	9 (75.0)
Were all the subjects selected or recruited from the same or similar populations (including the same time-period)? Were inclusion and exclusion criteria for being in the study pre-specified and applied uniformly to all participants?	12 (100)
Was a sample size justification, power description or variance and effect estimates provided?	0 (0)
For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?	7 (58.3)
Was the time-frame sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?	12 (100)
For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome (e.g. categories of exposure, or exposure measured as continuous variable)?	10 (83.3)
Were the exposure measures (independent variables) clearly defined, valid, reliable and implemented consistently across all study participants?	12 (100)
Was the exposure(s) assessed more than once over time?	5 (41.7)
Were the outcome measures (dependent variables) clearly defined, valid, reliable and implemented consistently across all study participants?	12 (100)
Were the outcome assessors blinded to the exposure status of participants?	12 (100)
Was loss to follow-up after baseline 20% or less?	2 (16.7)
Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?	12 (100)

Results of the study quality assessment are included in Table 2, and Table 3 shows the frequency of study quality criteria. Strengths of the studies included specification and definition of study populations; use of long enough follow-up periods to reasonably expect to see an association between exposure and outcome if it existed; clear definition and measurement of independent and dependent variables; and measurement and adjustment for key potential confounding variables. Weaknesses included higher than optimal attrition of participants at follow-up, failure to assess the relevant exposures more than once over time and measurement of the exposure(s) of interest after the outcomes being measured may have already occurred.

DISCUSSION

This review has identified 12 longitudinal studies published since 2008 containing original data from nine cohorts not reported on previously regarding children and young people's exposure to alcohol marketing and their consumption of alcohol. All found positive associations between exposure to marketing and some measure of subsequent drinking behaviour and/or negative consequences of drinking.

Regulation of alcohol marketing is a highly contested area in public health. As has been noted elsewhere [27], little work has been conducted on the actual effects of advertising restrictions or bans on alcohol consumption in adolescents or adults. Bosque-Prous *et al.* found that stricter marketing regulations were associated cross-

sectionally with a low prevalence of hazardous drinking among 50–64-year-olds in 16 European countries [28]. Examining a range of alcohol control policies, including alcohol advertising restrictions, from the 1960s to the 2000s, Baccini & Carreras found a significant decrease in consumption following advertisement restrictions only in France and not in five other countries where restrictions were implemented during the study period [29]. Smith & Geller found 32.9% fewer youth traffic fatalities in US states with laws prohibiting alcohol advertising targeting minors compared with states lacking such laws. Based on this finding, they estimated that imposing regulations on alcohol marketing to youth in the 26 US states that currently do not have such restrictions could save 400 lives per year from youth drink-driving casualties alone [30].

The studies summarized in this review help to fill the gap in evidence regarding alcohol marketing's effects on young people. World-wide, the most common approach has been for government to rely on alcohol industry self-regulation [2]. Reviews of the literature on the effectiveness of self-regulation in reducing youth exposure or limiting problematic content have concluded that existing self-regulatory systems do not meet their intended goal of protecting vulnerable populations from alcohol marketing [31,32]. Given the ineffectiveness of current regulatory approaches, the implications of the current review are that more research is needed to understand and intervene more effectively in the relationship between alcohol marketing exposure and youth drinking behaviour. This is particularly true in light of the apparent effects of

exposure to alcohol marketing on youth binge drinking. In the United States, adult binge drinking accounted for more than 75% of economic costs associated with excessive drinking [33]. Underage binge drinking has been associated with a range of negative outcomes, including peer violence, dating violence, alcohol-related fighting, poor school performance, attempting suicide and using illicit drugs [34].

Mediating factors

Effective intervention requires understanding how alcohol marketing influences young people. The most obvious mediator between alcohol marketing and youth drinking behaviour is marketing exposure itself. Beyond this, however, several studies used measures of marketing receptivity, operationalized through such variables as liking an advertisement, the ability to recall alcohol advertisements correctly and participation in marketing. The latter may be particularly important with increasing youth exposure to alcohol marketing in social media, which seek to encourage user and viewer participation often and explicitly in marketing [35]. Other studies hypothesized and demonstrated that positive expectancies about alcohol use were significant mediators. Further insight into mediating factors may come from cross-sectional studies not included in this review. For instance, Jang & Frederick [36] found that interpersonal discussions about alcohol use and expectations about using alcohol were mediating factors that shaped the influence of advertising. This suggests that social media discourse may play a significant role in enhancing marketers' advertising impact, a point echoed by Hoffman *et al.* [37], who found that young people's use of social media related to alcohol marketing predicted alcohol consumption and engaging in risky behaviours, whereas the use of social media more generally did not.

Brand recognition, including identifying oneself as a 'brand drinker', was another significant mediator. Again, cross-sectional research has shed light on the importance of including brands of alcohol in both the independent (i.e. exposure to marketing for specific brands) and the dependent (i.e. consumption of specific brands) variables when studying the effects of youth exposure to alcohol marketing. Branded cross-sectional research has found larger effect sizes than the studies in this review [38,39], although they are limited in their ability to address causality. This suggests that future longitudinal research should measure branded exposure and consumption. Moreover, Ross and colleagues [23,29] have argued that the relationship between youth exposure to alcohol marketing and youth drinking initiation is non-linear, with saturation beginning to occur at higher levels of exposure. This also has implications for future research.

Strengths and limitations

The strengths of the studies included in this review include the diversity of national and cultural settings in which they have been conducted, as well as the diversity of measures of marketing exposure and mediators they have employed. This diversity is also a limitation, however, in that after more than two decades of longitudinal research in this area there is still no consensus on how marketing exposure should be measured or what outcomes are most important. While we selected 500 participants somewhat arbitrarily as a minimum for studies included in this review, it is another limitation of the research so far that none of the studies included any justification for the sample size selected. Studies also suffered from a high level of attrition at follow-up, and a quarter of the studies had participation rates of eligible people of less than 50%. Future research may need to explore greater use of incentives and more resources devoted to follow-up to address these weaknesses.

This review is limited to the English-language literature, and there may be studies that have been published in other languages that could have informed its findings. The types of studies reviewed here vary greatly in measures of marketing exposure, post-baseline follow-up periods in the longitudinal studies and measures of drinking behaviour. The latter suffer from the usual problems with self-reporting; however, these are somewhat mitigated by the assumption that if under-reporting occurs in a longitudinal design it may be expected to be consistent over time. The age of the subjects also varied, from children as young as 10 to college/university students aged 17 or 18 years to young adults (at follow-up) as old as 29 years. The failure of most of the studies to use the same methodology across different countries and cultures is particularly limiting in the case of countries with a lower baseline of both exposure and youth alcohol use (e.g. low-income countries), where changes are more rapid and effects might be expected to be stronger. The heterogeneity of the studies also means that they cannot be combined easily into a meta-analysis or other method for deriving an estimate of the true effect size. Publication bias may also be a factor in the studies we were able to identify for this review, in that it is possible that studies finding no association may not have been submitted for publication or included in published results of studies that examined advertising along with other possible influences on youth drinking behaviour.

One of the strengths of the present review is that it has found evidence of an association between marketing exposure and youth drinking behaviour in multiple population groups, cultures and nationalities among a range of younger age groups, and using an array of different measurement methods. To the 13 longitudinal cohorts reviewed by Anderson *et al.* [6] we add nine more, with a total of more than 35 000 participants, follow-up periods ranging

from 9 months to 8 years and including children aged as young as 10 years. All support the original review's findings of a significant association between exposure to marketing and increased consumption of alcohol or worsening of drinking patterns.

Gaps in the literature remain to be filled. Content of marketing has been largely ignored, and there is reason to believe that content such as associating drinking alcohol with parties, humour, sexual attractiveness and other rewarding outcomes may be more attractive to youth [40]. A longitudinal study published too late for inclusion in this review found that adolescents and young adults in the United States were more likely to initiate drinking and binge drinking if they had greater exposure to alcohol advertisements containing a 'party' theme, independent of their exposure to advertisements without such themes [41]. If such content areas could be documented and quantified more fully, they may add to the predictive power of simple exposure measures. This is an important area for future research.

The finding of several studies that levels of exposure appear to be as high or nearly as high among younger adolescents as they are among older adolescents and young adults represents a significant failure of current marketing codes to protect minors from marketing messages [21,31]. This is particularly important with digital marketing techniques that encourage interactive engagement with brand marketing and are difficult for parents to monitor and control.

CONCLUSIONS

This review has found further evidence of a close association between marketing and youth alcohol consumption. Recent longitudinal studies show additional evidence of a relationship between early marketing exposure and later alcohol consumption, and the results support the conclusions of the earlier reviews. These effects have now been found in a wider range of countries and among children as young as 10 years. Many of the studies found their effects after adjusting for differences in family and peer drinking behaviour and other cultural incentives to consume alcohol. Although it is acknowledged that additional external factors—including non-marketing pro-alcohol messages, family and cultural factors and individual personality types—may explain some of the associations shown, these studies add to the evidence suggesting that alcohol marketing affects youth drinking behaviour and that there is a need for public health-orientated policies that can prevent, reduce or mitigate that effect.

Declaration of interests

None.

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The commercial use of digital media to market alcohol products: a narrative review

Tim Lobstein¹, Jane Landon², Nicole Thornton³ & David Jernigan³

Public Health Advocacy Institute of Western Australia, Curtin University, Perth, Western Australia, Australia,¹ UK Health Forum, London, UK² and Johns Hopkins Bloomberg School of Public Health, Baltimore, USA³

ABSTRACT

Background and aims The rising use of digital media in the last decade, including social networking media and downloadable applications, has created new opportunities for marketing a wide range of goods and services, including alcohol products. This paper aims to review the evidence in order to answer a series of policy-relevant questions: does alcohol marketing through digital media influence drinking behaviour or increases consumption; what methods of promotional marketing are used, and to what extent; and what is the evidence of marketing code violations and especially of marketing to children? **Method and findings** A search of scientific, medical and social journals and authoritative grey literature identified 47 relevant papers (including 14 grey literature documents). The evidence indicated (i) that exposure to marketing through digital media was associated with higher levels of drinking behaviour; (ii) that the marketing activities make use of materials and approaches that are attractive to young people and encourage interactive engagement with branded messaging; and (iii) there is evidence that current alcohol marketing codes are being undermined by alcohol producers using digital media. **Conclusions** There is evidence to support public health interventions to restrict the commercial promotion of alcohol in digital media, especially measures to protect children and youth.

Keywords Advertising, alcohol, digital media, internet, marketing, youth.

Correspondence to: Tim Lobstein, Public Health Advocacy Institute of Western Australia, Curtin University, 10 Selby Street, Shenton Park, WA 6008, Australia. E-mail: tlobstein@iaso.org

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INTRODUCTION

Before the last decade, studies of the effects of alcohol advertising focused primarily on exposure to marketing through traditional media such as television, radio and magazines [1,2]. As potential consumers are using digital media increasingly for their everyday communications and entertainment [3], alcohol marketers have turned their attention to the opportunities these media provide. Brand owners and their agents have developed brand-promoting websites, placed brand-promoting pages on social media platforms such as Facebook, opened Twitter accounts and developed smartphone applications (apps), screensavers, video games, downloadable ringtones and events listings. They have increased their use of 'programmatically' data-driven buying, which offers new efficiencies in reaching target audiences and works best on digital platforms [4]. Moreover, unlike traditional marketing, digital marketing provides marketers with opportunities to encourage continuing engagement and

individualized interaction with potential customers—for example, by hosting message boards and photo galleries where users can post comments or pictures—and can promote the re-distribution by potential customers of company-produced material, for instance through 'liking' or 'sharing' with their friends and through their own social networks.

Data from trade articles show that the Facebook platform alone can attract hundreds of thousands of 'likes' of popular brands and one brand alone, Heineken, had exceeded 20 million 'likes' globally by the end of 2015, while Budweiser, Smirnoff, Skol and Johnnie Walker all exceeded 12 million [5]. Two brands (Heineken and Chivas Regal) gained more than 500 000 new Facebook 'likes' in the month that included the Christmas–New Year partying period, 2015–16 [5].

Large numbers of people follow the Twitter accounts of alcohol companies, led currently by Smush Cocktails and Kirin beer at more than 500 000 followers each [5]. Company-run dedicated brand channels on YouTube

can also attract high numbers of viewings, with Budweiser's dedicated channel registering more than 160 million viewings globally, followed by Bud Light with more than 100 million viewings [5], although viewing by brand channel is the exception in how advertising is viewed on YouTube and the figures will underestimate the extent of exposure to YouTube-based branded messages [6].

Digital media offer opportunities for interactive engagement with media users. Social networking platforms (e.g. Facebook, Myspace, Bebo) and services that offer social messaging and image sharing (e.g. Twitter, Flickr, Tumblr, Instagram, WhatsApp) create opportunities for branded messages to be re-distributed rapidly and widely by the media users to their friends and social networks. This provides free publicity for the original message and, by being embedded in a user-endorsed medium, increases the likelihood that the message will attract a recipient's attention. Furthermore, digital brand promotion may be created entirely by media users without the brand owner's prior knowledge, with brand-promoting Facebook pages and YouTube videos uploaded without the brand owner's consent. While such material includes trademarked and copyrighted material, we are not aware of any actions taken by companies owning those trademarks and rights to have the material removed. Indeed, there is evidence that some companies encourage media users to create and upload home-made promotions featuring the companies' products [7].

Such informal, user-generated brand promotion is part of a broader discourse around alcohol use and drinking behaviour found widely on social networking sites, and contributing potentially to the construction of an individual's social identity and a group's social norms [8,9]. Griffiths & Casswell ([10], p. 525) suggested that 'young people are creating 'intoxigenic social identities' as well as 'intoxigenic digital spaces' that further contribute towards the normalisation of youth consumption of alcohol'.

While it may be the case that the alcohol producers encourage a continuing, positive 'buzz' around alcohol in social media, it is beyond the scope of the present paper to consider this wider discourse. Here we focus on digital communications that originate primarily from the brand owners and their agents, and which might be amenable to regulatory interventions. We focus on a set of questions relating specifically to the use of digital media by alcohol companies for the promotion of alcohol products, as follows:

- 1 Is there evidence that alcohol marketing through digital media influences drinking behaviour or increases consumption?
- 2 What methods of promotional marketing are used, and to what extent?

- 3 Is there evidence of marketing code violations and especially of exposure of children and adolescents to alcohol marketing promoted through digital media?

METHODS

Although the intention of this paper is to provide a narrative review, we approached the search for material as if it were a full systematic review, and included in our search both peer-reviewed and authoritative grey literature (i.e. fully referenced documents published by government agencies and government-funded organizations, independent non-governmental specialist institutions, professional associations and universities). Excluded from the search were books and chapters in books. The search terms used were alcohol + AND (advertis + OR marketing) AND [Internet OR (digital AND media) OR smartphone OR apps OR (social AND network+)]. The search was limited to English language literature, published January 2000 to December 2015. The year 2000 was taken as a practical historical cut-off, although we are aware of grey literature studies prior to this period, such as the reports by the Center for Media Education in the late 1990s which sought to identify the 'new threats' posed to youth by access to alcohol promotion through digital media [11–13].

Searches were conducted through MEDLINE (PubMed), Proquest, Web of Science, the Cochrane Database, Embase/Ovid and Google general index. Peer-reviewed and grey literature was supplemented by hand-searching recent papers and consulting with authors of other papers in the present Supplement.

RESULTS

The numbers of papers identified are shown in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram (Fig. 1). Grey literature was identified primarily in the Embase and Google searches. For Embase, the top two levels of relevance were examined. In Google the search terms gave more than 30 000 potential records, and the first 500 of these (sorted by relevance) were examined by title and 20 items selected for further inspection.

Following elimination of duplicates, a total of 231 abstracts were inspected, 172 of which failed to meet the inclusion criteria. From the remaining papers, a further 38 titles were identified from hand-searching the references, providing a total of 97 documents subjected to detailed examination. Of these, 67 were peer-reviewed studies and 30 were grey literature documents. Inspection of the detailed text led to a further 50 documents being removed for failing to meet the inclusion criteria (due primarily to insufficient quantitative data or lack of specific

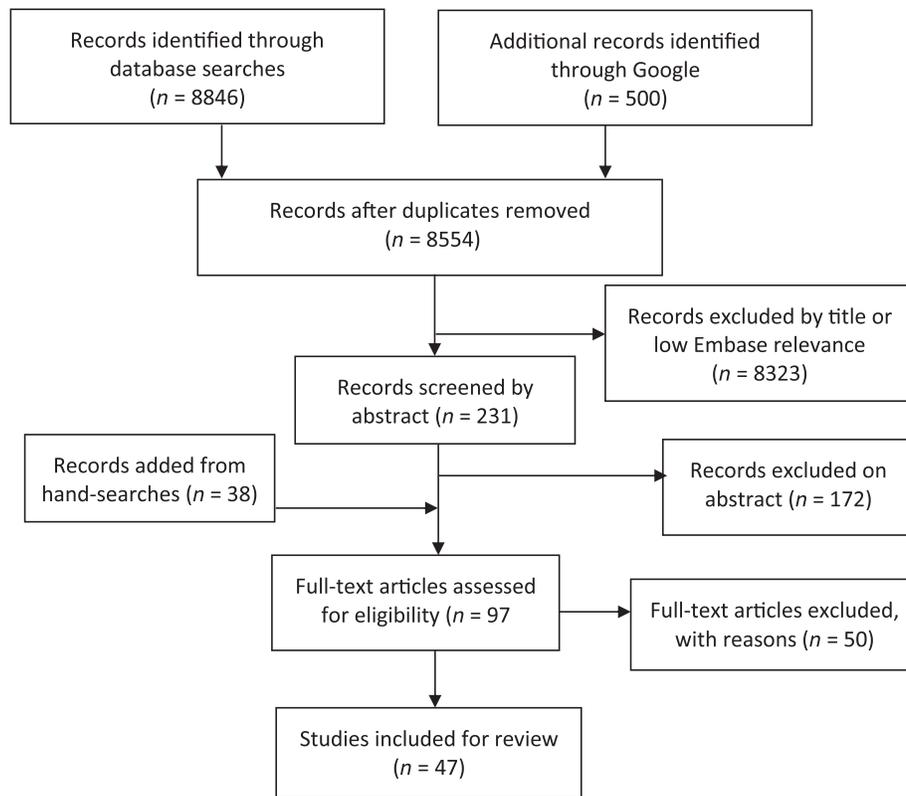


Figure 1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram of articles reviewed

information on commercial marketing), leaving 47 papers (33 peer reviewed and 14 grey literature) included in the current review.

FINDINGS

A short narrative description of each of the papers included in this review is provided in the online Supporting Information tables. Here we summarize the content in response to the questions posed in the introduction.

Is there evidence that alcohol marketing through digital media influences drinking behaviour or increases consumption?

Five documents were identified (see Supporting information, Table S1). All of them reported primary data, and in each case the evidence supported the hypothesis that exposure to alcohol marketing in digital media is associated with alcohol purchase intentions, drinking patterns or higher levels of alcohol consumption.

Four of the studies [14–17] used individual interviews to estimate recognition of digital marketing and self-reported alcohol consumption patterns. Three of the four studies were limited to youth aged less than 21 years, and of these, two were restricted to children aged less than 17 years. Drinking behaviour associated with exposure to

internet marketing included increased consumption, regular consumption, risky behaviour and binge drinking, but not initiation of drinking.

None of the four studies used longitudinal designs or controlled interventions, and therefore could not determine the direction of causality.

The fifth study [18] examined the effect of internet marketing in states in the USA where regular marketing was restricted compared with states where it was not, and found that exposure to internet marketing increased the proportion of residents (adults) in the restricted states who said they would purchase alcohol, indicating that digital marketing exposure undermines traditional marketing restrictions. The authors estimated that advertising on the internet reduced the effect of a ban on traditional advertising by 62%.

What methods of promotional marketing are used, and to what extent?

The literature search identified 22 studies (reported in 26 publications) that described the nature and magnitude of promotional alcohol marketing on digital media (see Supporting information, Table S2). All studies found extensive evidence of alcohol promotion by leading brands and found a variety of approaches being used to encourage engagement with a brand and the

re-distribution of both branded and general pro-consumption messages, including:

- interviews with celebrities
- free downloads of music, pictures and messaging accessories
- notices of parties, and competitions for tickets to enter party events
- notices of events (sports, music)
- free downloadable apps for entertainments, games, hangover advice, alcohol intake monitoring and local retailer location
- free downloadable widgets to aid invitations to parties via smartphones
- opportunities to upload messages and photos to the brand website or Facebook page
- opportunities to purchase branded merchandise and collectables
- opportunities to purchase alcohol for direct delivery
- competitions for user-generated videos, cocktail recipes, apps and games
- tacit approval for unofficial brand-promoting Facebook pages (some brands have more than 50 of these)
- social media being used by local alcohol outlets, bars and pubs to encourage clients' messaging and photo-sharing.

Uzunoglu [19] noted that a successful strategy for alcohol marketers uses digital media to exploit interactivity, both 'business-to-consumer' and 'consumer-to-consumer'. As Carah ([20], p. 5) comments: "These interactions make brands a part of everyday conversations on Facebook and allow [the brands] to become part of the continuous 'flow' of content in the news feeds of their followers. With each interaction, brand content appears in the news feeds of their followers' friends".

Examination of 70 user-uploaded YouTube videos depicting alcohol intoxication [21] noted in passing that brand references were relatively high (44%), but there was no evidence of industry influence and no explicit advertising messages. While the videos commonly associated the intoxication with humour, they also occasionally depicted negative clinical outcomes.

Is there evidence of marketing code violations and especially of exposure of children and adolescents to alcohol marketing promoted through digital media?

Brand owners state that their marketing is designed to target adults, and not children or adolescents. This section describes evidence that marketers are creating material that is attractive to younger age groups, and by design or by neglect allowing younger age groups to gain access to their marketing.

Nine studies were found which gave evidence of exposure to digital alcohol marketing in certain groups, from which the authors conclude that these groups are

likely to be specifically targeted or may be specifically vulnerable to marketing messages (see Supporting information, Table S3).

De Bruijn's study of children's digital media usage in four European countries [22] found that, among children aged 13–14 years, 33% had received promotional e-mails, or joke, chain or wind-up emails mentioning alcohol brands; 18% had downloaded a mobile phone or computer screensaver containing an alcohol brand name or logo; and 66% had noticed an internet page that contained an alcohol advertisement.

A study of marketing exposure in different age groups interviewed Brazilian children aged 14–17 years and young adults aged 18–25 years, in 2005–06 [23]. The study found that 61% of the younger sample and 60% of the older sample reported exposure to alcohol advertising in a range of media 'almost every day' or 'more than once a day' in the previous month, although fewer than 10% in both age groups reported seeing alcohol advertising on the internet.

A study in the United Kingdom estimated the exposure of children (6–14 years) and young people (15–24 years) to alcohol marketing on social media, based on artificially created subscriptions to social networking sites [24]. It found that Facebook pages could not be accessed by subscribers who had registered as being under 18 years, but YouTube and Twitter content could usually be accessed by users of all ages.

The literature search identified a further 12 papers that provide evidence of various forms of code violation (see Supporting information, Table S4). The transgressions depend upon the code in place in a given region or country: the paper by Brodmerkel & Carah [25] provides evidence that alcohol brands available in Australia own Facebook pages which encourage viewers to interact with the page and to make statements that the company itself cannot make under the prevailing Australian code of marketing. The pages also display users' photos that encourage excessive consumption and indicate sexual advantages through alcohol consumption (both prohibited under the Australian code). The photos appear to show people aged under 25 years consuming alcohol, which is also in breach of the code.

Two papers from the United States [26,27] show that alcohol retailing through digital media allowed underage purchases to be delivered directly to users. The majority of retailer sites required only a confirmation that the purchaser was of the required age. Several sites claimed and utilized delivery services that were supposed to examine age verification at the time of delivery, but the researchers found that 40% of actual deliveries failed to ask for such verification. Furthermore, some sites claimed to use the United States Postal Service (USPS) to verify age at delivery, but USPS did not offer such a service at

the time of the research study; furthermore, it was (and remains) illegal to ship alcohol via the USPS.

A study in the United Kingdom [28] found that age verification was required on the home web pages of all 14 brands examined, and 11 were abiding by Advertising Standards Authority regulations stating that reference to responsible drinking should be made on the home pages of official alcohol brand websites. The prominence of these references varied, with some websites providing the Drinkaware logo and additional information, while others depicted the Drinkaware web link in small text at the foot of the home page.

A study by Gordon [29] in Scotland looked at 40 leading brands and found they had 17 promotional websites, all of which had age restriction messages or controls. However, many had content that the author believed broke industry codes by appealing to minors (with arcade games, pinball and Ninja games, along with colour graphics and music downloads). There were examples of implied sexual success (guides to flirting, or for a girls' night out, and a game in which players can create the perfect man or woman). This study also found evidence linking the brand to driving cars, with Formula 1 coverage (Budweiser), the World Rally Championship (VK Vodka) and an interactive game in which players can 'Max' a motor by modifying it (WKD).

DISCUSSION

In order to support policymaking, this paper sought to answer three questions: do digital media marketing messages influence drinking behaviour, what methods are used and are youth being targeted and marketing codes being violated? Five papers provided evidence that branded alcohol promotion in digital media is associated with increased alcohol consumption, or increased likelihood of binge drinking behaviour, based on six cross-sectional studies and one controlled intervention. The cross-sectional studies cannot show the direction of causality (e.g. drinkers may be more interested in alcohol advertising) or fully eliminate other factors that could influence simultaneously both digital marketing engagement and alcohol consumption (e.g. personality type). However, the controlled intervention study [18] indicated causality, and the authors of the study concluded that digital media marketing acted to increase consumption directly, rather than as a complementary activity to marketing through other media. They found that digital media marketing was especially effective for products that were newly launched or little-recognized in a particular region.

Twenty-two studies, reported in 26 papers, provided evidence of the nature and methods of promotional marketing in digital media, indicating a wide range of approaches used to attract and engage digital media users,

through both commercially owned media and social networking media. An alcohol brand may have as many as 50 different Facebook pages, along with YouTube clips and dedicated YouTube channels, and multiple Twitter feeds which all encourage interactivity and promote a general discourse on drinking behaviours.

Nine studies gave specific but limited evidence of the extent to which identifiable population groups are attracted to digital alcohol marketing. No study gave information on differential access or engagement according to social class or household income, or educational level or other indicator of socio-economic status. One paper indicated that some digital marketing appears to be directed specifically to Latino and African Americans in the United States.

Lastly, 12 studies, reported in 16 papers, gave evidence for apparent violations of marketing codes in digital media, primarily showing underage access to advertising and marketing messages on digital media, and to retail deliveries purchased through website promotions. Examples are given of online brand websites using material attractive to minors, linking the brand to sexual success, to car driving and to using violence and antisocial behaviour.

Limitations of the present paper reflect some of the limitations of the studies reviewed. Studies showing cross-sectional evidence linking digital media exposure to alcohol consumption are unable to show causality. Adult researchers investigating the experiences of underage youth may not be permitted by their institution's ethical committee to misrepresent themselves as a child. Papers describing digital media practices are specific to the time of the survey and may be overtaken by changing fashions and brand preferences, and evolving digital technology, so that survey results in 2010, for instance, may be out of date by 2016. Codes of marketing have evolved during the period covered in this review, as have methods for age verification and restricting access to websites. Lastly, the number of studies available on which to base a conclusion was small, but the findings showed notable consistency despite the heterogeneity of research methods and the variety of national contexts and cultural norms.

In the majority of papers examined the authors concluded that there was a need for policies to control and restrict alcohol promotion, and especially to protect underage youth from commercial incentives to engage in drinking behaviour. Proposals included regulatory restrictions on access to websites, website content and requirements to report website usage, supplemented with stronger industry codes and tougher sanctions [20,25,30–35]. To date, it appears that policy responses have been weak. In response to complaints of code-breaking on brand websites, the Australian Advertising Standards Bureau determined in 2012 [32] that a brand's Facebook page is a marketing communication tool and that all content on the page falls

under the industry's self-regulatory code of ethics, including consumer-created content such as user-generated comments and photos. The Alcohol and Tobacco Tax and Trade Bureau in the United States took a similar view in their Industry Circular of May 2013 [36]. It remains to be seen how these decisions will affect the content of brand-owned sites and whether they might be extended to the use by consumers of trademarked or copyrighted material without the owner's consent.

A mechanism which has been advanced for restricting minors' access to adult content has been the use of parental control software. An investigation by the Center on Alcohol Marketing and Youth in 2004 [37] showed that most software products were not adequate for protecting children from accessing alcohol-related websites: 76% of alcohol brands eluded parental controls half the time or more. However, the survey found that some software controls were highly effective, indicating that it was feasible at that time to control access to certain online content through parental oversight.

Lastly, it may be helpful to comment upon research priorities for further policy development. Meier [38] has noted that research has tended to rely on simplified models of marketing and has focused disproportionately on youth populations. The effects of cumulative exposure across multiple marketing channels, targeting of messages at certain population groups and indirect effects of advertising on consumption remain unclear. Meier highlighted specific evidence needs for policymakers:

- the size of marketing effects for the whole population and for policy-relevant population subgroups
- the balance between immediate and long-term effects and the time lag, duration and cumulative build-up of effects
- the comparative effects of partial versus comprehensive marketing restrictions on consumption and harm.

As engagement with marketing grows [39], there is a need for longitudinal data identifying brand-specific youth exposure and brand-specific alcohol consumption in order to demonstrate more convincingly the causal links from marketing activity to drinking behaviour.

CONCLUSIONS

This paper summarizes the research literature available since 2000 on alcohol marketing in digital and social media. The literature indicated that marketing through digital media is likely to be having an impact upon drinking behaviour, that the marketing activities make use of materials and approaches that are attractive to young people and that current marketing codes are likely to be undermined by digital media.

The rapid development of immersive technologies that promote brands and encourage user engagement, and participation in the marketing itself, raises important and

challenging regulatory questions. The studies reported here show a consistency of findings to support the suggestion that digital marketing is effective and attractive to youth, and indicate a need for policymakers to respond to these questions.

Declaration of interests

None.

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Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Table S1 Association between digital marketing and alcohol behaviour.

Table S2 Nature and extent of digital alcohol marketing.

Table S3 Targeting and exposure of demographic groups.

Table S4 Evidence of marketing code violations.

Industry self-regulation of alcohol marketing: a systematic review of content and exposure research

Jonathan K. Noel, Thomas F. Babor & Katherine Robaina

Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington, CT, USA

ABSTRACT

Background and Aims With governments relying increasingly upon the alcohol industry's self-regulated marketing codes to restrict alcohol marketing activity, there is a need to summarize the findings of research relevant to alcohol marketing controls. This paper provides a systematic review of studies investigating the content of, and exposure to, alcohol marketing in relation to self-regulated guidelines. **Methods** Peer-reviewed papers were identified through four literature search engines: SCOPUS, Web of Science, PubMed and PsychINFO. Non-peer-reviewed reports produced by public health agencies, alcohol research centers, non-governmental organizations and government research centers were also identified. Ninety-six publications met the inclusion criteria. **Results** Of the 19 studies evaluating a specific marketing code and 25 content analysis studies reviewed, all detected content that could be considered potentially harmful to children and adolescents, including themes that appeal strongly to young men. Of the 57 studies of alcohol advertising exposure, high levels of youth exposure and high awareness of alcohol advertising were found for television, radio, print, digital and outdoor advertisements. Youth exposure to alcohol advertising has increased over time, even as greater compliance with exposure thresholds has been documented. **Conclusions** Violations of the content guidelines within self-regulated alcohol marketing codes are highly prevalent in certain media. Exposure to alcohol marketing, particularly among youth, is also prevalent. Taken together, the findings suggest that the current self-regulatory systems that govern alcohol marketing practices are not meeting their intended goal of protecting vulnerable populations.

Keywords Adolescent, advertising, alcohol, industry, marketing, self-regulation.

Correspondence to: Thomas F. Babor, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, 263 Farmington Avenue, MC 6325, Farmington, CT, USA. E-mail: babor@uchc.edu

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INTRODUCTION

Short-term exposure of young people to alcohol advertising is associated with positive thoughts about alcohol and greater alcohol consumption [1,2]. Longitudinal studies of alcohol advertising have demonstrated a positive relationship between advertising exposure and alcohol consumption [3] and, among youth, research shows that each additional advertisement exposure per 4-week period can increase alcoholic drinks consumption by 1% [4].

According to a global survey of national health authorities, between 8 and 56% of countries have alcohol marketing regulations to protect youth and other vulnerable populations from the harmful effects of alcohol marketing [5]. These codes are either statutory or voluntary and can contain guidelines on the content and placement of advertisements, as well as other marketing materials.

For example, the Loi Évin, enacted in France, restricts alcohol marketers to using only the name of the alcohol producer, the brand name of the product and related product characteristics, whereas the Advertising Act of Ukraine states that alcohol advertisements may be broadcast on radio or television only from 11:00 p.m. to 6:00 a.m. [6,7]. Alcohol advertising bans have been enacted in many countries, including Denmark, Finland, Sri Lanka and Turkey, although bans in Denmark and Finland were overturned due to incompatibility with European Union regulations [8].

Voluntary, self-regulated advertising codes have been created by several kinds of organizations. For example, professional advertising organizations often use standards of practice that prohibit false or misleading statements, testimonials that do not reflect real-world opinions, misleading price information, claims unsupported by science and

statements and suggestions or images that would be considered offensive to public decency [9].

Alcohol producers may also follow alcohol-specific advertising codes. In Australia, the Alcohol Beverages Advertising Code (ABAC) contains recommendations concerning product naming and packaging, and the content of print, billboard, internet, cinema, television, producer point-of-sale and radio advertisements [10]. The Outdoor Media Association of Australia and Free TV Australia govern advertisement placement [11,12]. Ghana, Ireland, Japan, New Zealand, South Africa and the United Kingdom use similar alcohol advertising codes that were developed by alcohol industry-sponsored corporate social responsibility organizations [13–15]. In the United States, alcohol advertising codes are largely product-specific, with companies that principally produce beer, wine and distilled spirits agreeing to follow unique codes [16–18]. The industry-funded International Alliance for Responsible Drinking (IARD), formerly the International Center for Alcohol Policies, has also created the *Guiding Principles for Self-Regulation of Marketing Communications for Beverage Alcohol*, which are intended to apply to all forms of alcohol marketing [19]. Moreover, major alcohol producers, including Anheuser-Busch InBev (A-B InBev), SABMiller, Diageo and Heineken, have created internal advertising codes [20–23]. Supplementary internal codes include A-B InBev's College Marketing Code and Diageo's code for digital content [24,25].

Voluntary, self-regulated alcohol marketing codes contain exposure and content guidelines. Exposure guidelines typically specify that no alcohol advertisement should be broadcast or displayed to an audience where the percentage of underage individuals exceeds 30%, although lower thresholds also exist [19,26]. Content-related guidelines within advertising codes generally focus upon five major themes: responsible marketing communications, responsible alcohol consumption, health and safety aspects, protection of minors and the effects of alcohol [19].

The purpose of this paper is to review relevant research, published in peer-reviewed journals and non-peer-reviewed sources, on the content of alcohol advertising, exposure to alcohol advertising and adherence to advertising codes. Section one focuses on the content of alcohol advertising and answers the following questions: (1) do current self-regulatory marketing codes prevent the dissemination of content that violates code guidelines, and (2) regardless of marketing codes, is the content within alcohol marketing potentially harmful to young people? Section two focuses on exposure to alcohol marketing and answers the following questions: (1) how is alcohol advertising exposure measured and studied, and (2) to what extent is alcohol advertising on television, in magazines and newspapers, on radio, in public locations and in digital media accessible to youth and other

vulnerable populations? Section three focuses on methodological issues and answers the question: has alcohol advertising been evaluated using sufficiently rigorous methods to make general statements on the effectiveness of self-regulation?

METHODS

SCOPUS, Web of Science (WOS), PubMed and PsychINFO were searched. The search terms 'alcohol AND (advertising OR marketing) AND (regulat* OR content)' were used to locate papers on alcohol advertisement content. The search terms 'alcohol AND (advertising OR marketing) AND (regulat* OR exposure)' were used to locate papers on alcohol advertisement exposure. There were no date restrictions because no previous reviews were identified on this topic. Paper reference lists were reviewed to identify additional papers that were not in the search results. Studies were selected if they contained information on (1) the effectiveness of the content guidelines within alcohol advertising codes, (2) the content of alcohol advertisements, (3) methods of measuring exposure to alcohol marketing, (4) the effectiveness of the exposure guidelines within alcohol advertising codes or (5) the extent of alcohol marketing exposure to youth, young adults or adults. Studies were excluded if they were published in a non-English journal or were an editorial, opinion or review paper. Non-peer-reviewed reports produced by public health agencies, alcohol research centers, non-governmental organizations, government research centers and national industry advertising associations were also searched using the same criteria. Non-peer-reviewed reports were collected from: Alcohol Action Ireland, Alcohol Concern, Alcohol Justice/Marin Institute, the Alcohol Marketing Monitoring in Europe project (AMMIE), the Association to Reduce Alcohol Promotion in Ontario (ARAPO), the Center on Alcohol Marketing on Youth (CAMY), the European Centre for Monitoring Alcohol Marketing (EUCAM), the US Federal Trade Commission (FTC), the Monitoring Alcohol Marketing in Africa project (MAMPA), the National Youth Council of Ireland (NYCI), Ofcom, the Public Health Foundation of India (PHFI) and RAND Europe. Information was abstracted by a doctoral candidate (J.N.) and verified by the project supervisor (T.B.).

Research methodology for each publication was rated using questions derived from the Transparent Reporting of Evaluations with Nonrandomized Designs (TREND) statement [27], the Meta-analysis of Observational Studies in Epidemiology (MOOSE) checklist for meta-analyses [28] and the guidelines developed by the Grading of Recommendations, Assessment, Development and Evaluations (GRADE) working group [29]. Thirteen questions were adapted to evaluate research on alcohol advertising content (Supporting information, Appendix S1). Seven

questions were used to evaluate research on alcohol advertising exposure. The sum of positive responses for each publication was calculated. For content and exposure studies, values could range from 0 to 13 and 0 to 7, respectively. Each publication was rated by two master's-level public health professionals. Inter-rater reliability was high for content [intra-class correlation (ICC), 95% confidence interval (CI) = 0.94 (0.88–0.97)] and exposure [ICC, 95% CI = 0.83 (0.71–0.90)] studies. Total scores were averaged across raters, and peer-reviewed papers and non-peer-reviewed reports were compared using the Mann–Whitney *U*-test.

RESULTS

For papers on advertisement content, SCOPUS, WOS, PubMed and PsychINFO returned 473, 497, 277, 344 papers, respectively. From the initial set of 1591 peer-reviewed papers, 484 duplicates were removed (Fig. 1). An additional 243 were removed because they were an editorial, opinion or review paper, 25 papers were removed for being published in a non-English journal and 814 papers were removed because they did not contain data on alcohol advertising content. From the remaining 25 peer-reviewed papers, five additional papers were identified

through paper reference lists. One paper in press at the time this manuscript was submitted was also included. Thirteen non-peer-reviewed reports also contained relevant information.

For papers on advertisement exposure, SCOPUS, WOS, PubMed and PsychINFO returned 291, 274, 257 and 482 papers, respectively. From the initial set of 1304 peer-reviewed papers, 89 duplicates were removed (Fig. 2). In addition, 213 papers were removed because they were an editorial, opinion or review paper, 18 papers were removed for being published in a non-English language journal and 946 papers were removed because they did not contain data on exposure to alcohol advertising. Among the 38 remaining papers, four additional peer-reviewed were identified through paper reference lists. Fifteen non-peer-reviewed reports also contained relevant information. In total, 96 publications on alcohol advertising are reviewed in this paper.

Alcohol advertising content

Studies of code violations

Table 1 summarizes 19 studies conducted in 19 countries where advertising content was evaluated in terms of code

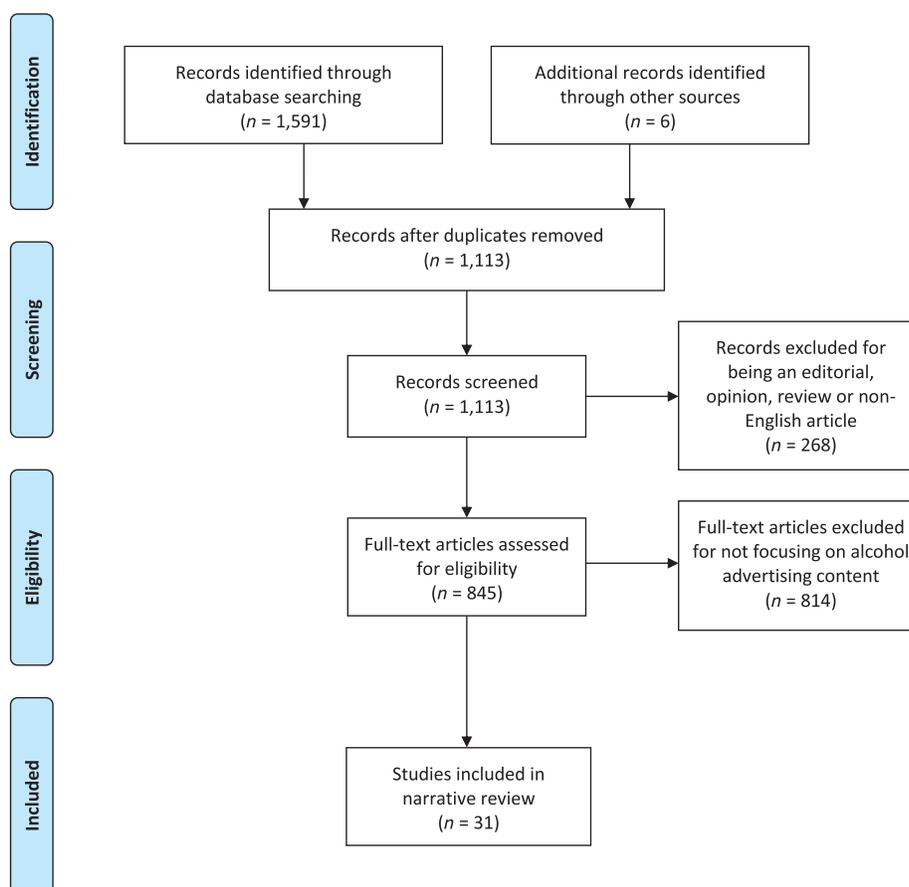


Figure 1 Peer-reviewed paper selection flow-chart for alcohol advertisement content peer-reviewed papers

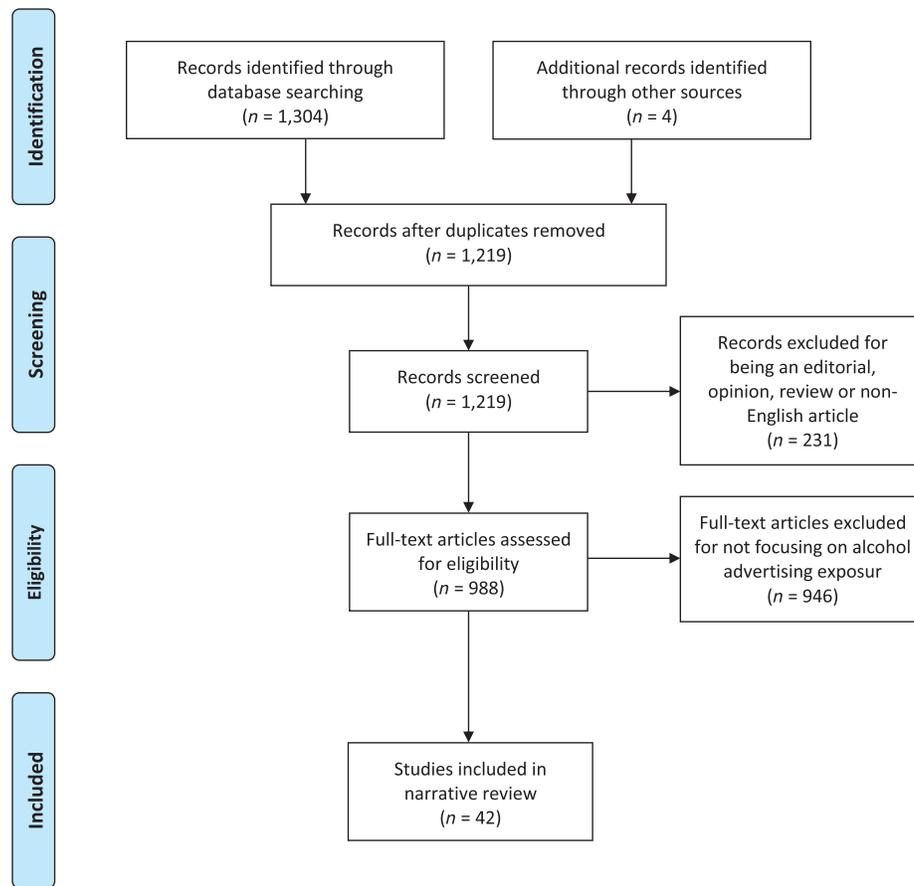


Figure 2 Peer-reviewed paper selection flow-chart for alcohol exposure peer-reviewed papers

violations [30–48]. All studies reported evidence of code violations. Among the 17 studies that calculated code violation rates, the sampling methodology partially dictated the range of code violation rates published. Five studies used pre-selected advertisements that were thought to contain code violations and reported violation rates of 100% [30–34]. The remaining 12 studies used either a random sample of advertisements or a total survey approach [35–48]. Among these studies, code violation rates for television and magazine advertisements ranged from 12.3 to 86% [34–36] and 0 to 52% [34,37–48], respectively. One study reported a code violation rate of 74.1% for digital content [42], and an additional study, whose unit of analysis was a marketing campaign, reported a code violation rate of 100% [43]. The most commonly violated guidelines included associations with social or sexual success and guidelines intended to protect youth.

Evaluations of thematic content

In some studies, a content analysis of alcohol advertisements was performed without reference to an advertising code. Nevertheless, these studies are often relevant to the question of whether the content of alcohol advertising may be harmful to youth. Table 2 summarizes

information abstracted from 25 studies conducted in 16 countries [49–73]. All studies identified content that may be appealing to youth.

In the 1990s and early 2000s, US magazine and television advertisements often used themes of humor, relaxation, friendship and masculinity [53,54]. Sex appeal was used predominantly when female actors appeared in the advertisements [54]. The non-profit organization Marin Institute (now Alcohol Justice) has noted an increased prevalence of health-related themes in alcohol advertising, including overt claims that product consumption is beneficial to health [55], and the health benefits of low-carbohydrate beer were promoted to attract health-conscious drinkers in Canada [56].

Outdoor alcohol advertising near schools may use youth-oriented content, including cartoons and animals [58], and an evaluation of alcohol advertising in Ireland found that 62% of advertisements were appealing to teens, with descriptors such as ‘funny’, ‘clever’, ‘cheap’ and ‘attractive’ often used [59]. Youth appeal has also been documented in advertisements collected in Denmark, the Netherlands, Germany and Italy [60–63].

A study of Bulgarian advertisements found that they primarily use overt sexual themes and associations with sporting events [64]. Similar reports have emerged from

Table 1 Summary of papers and reports related to the self-regulation of alcohol advertising content codes.

<i>Authors/organization (year of publication)</i>	<i>Country</i>	<i>Medium</i>	<i>Code</i>	<i>% Violations</i>	<i>Prevalent content/other findings</i>	<i>Total methods criteria met</i>
Saunders <i>et al.</i> (1991) ^a	Australia	Television, magazine, newspapers	ABAC	100%	Suggestive of social success, relaxation, sporting achievement	6
Jones <i>et al.</i> (2002) ^a	Australia	Television, magazines	ABAC	77.8–100%	Associates alcohol with altered moods, sex, and discrimination	4
Donovan <i>et al.</i> (2007) ^a	Australia	Magazine	ABAC	52%	Advertisements had a strong appeal to adolescents and promoted positive social, sexual and psychological expectancies	5
Jones <i>et al.</i> (2008) ^a	Australia	Television, magazines	ABAC	12.3% (TV) 4.2% (magazines)		7
Jones <i>et al.</i> (2010) ^a	Australia	Television	ABAC	46.2%	Use of celebrities, mascots, humor, social success	4
Jones <i>et al.</i> (2009) ^a	Australia	Television, magazine	ABAC		Subjects stated the products would help them have a good time, make them more sociable, and confident	9
Babor <i>et al.</i> (2008) ^a	US	Television, magazine	1997 US Beer Institute	60–100%	Different methods of calculating a violation alters the violation rate	10
Babor <i>et al.</i> (2013) ^a	US	Television	1997 & 2006 US Beer Institute	35–74%	Associated drinking with social success, content appealing to youth	7
Zwarun <i>et al.</i> (2005) ^a	US	Television	1997 US Beer Institute, DISCUS	Up to 75%	75% of alcohol advertisements violated the intended objective of alcohol depiction guidelines	6
Noel <i>et al.</i> (2016) ^a	Argentina, Brazil, Canada, Finland, France, Mexico, Spain, US	Television	ICAP's Guiding Principles	86.2%	11% of advertisements contained strategically ambiguous content regarding drinking before hazardous activities	9
Rhoades <i>et al.</i> (2013) ^a	US	Magazines	US Beer Institute, DISCUS	3.97% of unique advertisements, 4.13% of published advertisements	Guidelines on the effects of alcohol and health and safety violated most often No advertisements broadcast in countries with strictest marketing restrictions	7
Smith <i>et al.</i> (2014) ^a	US	Magazines	US Beer Institute, DISCUS	2.1%	Associations with risk, sexism, and sexual activity Implied illegal activity, degrading a gender or minority, appealing primarily to an underage audience, showing excessive alcohol consumption.	6

(Continues)

Table 1. (Continued)

<i>Authors/organization (year of publication)</i>	<i>Country</i>	<i>Medium</i>	<i>Code</i>	<i>% Violations</i>	<i>Prevalent content/other findings</i>	<i>Total methods criteria met</i>
Wolburg <i>et al.</i> (2009) ^a	US, Ukraine	Magazines	US Beer Institute, US Wine Institute, DISCUS, Ukrainian Advertising Act	0% of US advertisements, 33.3% of Ukraine advertisements	Explicit or implied social or sexual success	4
Vendrame <i>et al.</i> (2010) ^a	Brazil	Television	Conselho Nacional de Auto-regulamentação Publicitária	100%	All advertisements that appealed to teenagers contained violations Increasing the appeal of alcohol use, children being targeted in the advertisement, and the product presented as appropriate for minors were more common violations	8
Vendrame <i>et al.</i> (2015) ^a	Brazil	Television	Conselho Nacional de Auto-regulamentação Publicitária	100%	At least 1 advertisements violated 11 of 17 guidelines within the code	7
Farrell <i>et al.</i> (2012) ^a	India, Malawi, Nigeria, Philippines, Sri Lanka, Thailand	Radio, outdoor & public	Portman Group	100%	Associations with strength and power, sexual success, social success and youth appeal	6
Wimpenny <i>et al.</i> (2012) ^b	Germany, the Netherlands, UK	Television	Deutscher Werberat, STIVA, BCAP, Portman Group		Exact code violation rate not determined due to lack of specificity in the regulations Music, human characters, technological effects used to appeal to youth	8
Gordon (2011) ^a	UK	Digital	BCAP	74.1%	Use of competitions individuals could enter, interactive video games, sports, and music	6
Searle <i>et al.</i> (2014) ^a	UK	Television	BCAP	86%	Implications that alcohol contributes to popularity or has therapeutic qualities most common	8

^aPaper published in a peer-reviewed journal; ^bnon-peer-reviewed report.

Table 2. Summary of papers and reports related to the content analyses of alcohol advertising.

<i>Authors/organization (year of publication)</i>	<i>Country</i>	<i>Medium</i>	<i>Prevalent content/other findings</i>	<i>Total methods criteria met</i>
Strickland <i>et al.</i> (1982) ^a	US	Magazine	Quality, tradition, information, celebrities, and foreign settings	5
Finn <i>et al.</i> (1982) ^a	US	Television	Camaraderie, relaxation, humor, quality, physical activity, celebrities, hazardous activities	4
Pettigrew <i>et al.</i> (2012) ^a	Australia	Television	Humor, animals, sports, sex	8
Pinksey <i>et al.</i> (1999) ^a	Brazil	Television	Humor, relaxation, national symbolism, conformity	5
Beccaria (2001) ^a	Italy	Television	Advertising attempts to move alcohol use away from traditional alcohol use situations	4
Marin Institute (2011) ^b	US	Television, magazines, outdoor & public, digital	Women appear to be directly targeted	0
Kelly <i>et al.</i> (2000) ^a	US	Magazines	Increasing use of explicit and implied health themes, including the promotion of fortified products and weight loss claims	9
Cohen <i>et al.</i> (2011) ^a	US	Magazines	77.5% of beer advertisements depict life-style changes 28% of alcohol advertisements in African American newspapers contained human models, compared to 11% for general audience publications	5
Weintraub <i>et al.</i> (2005) ^a	US	Television, magazines	In magazines: factual information, humor, relaxation On television: relaxation, humor, friendship, masculinity	6
Slater <i>et al.</i> (1996) ^a	US	Television	Sex appeal was common when female characters used 39.4% of students reported that at least 1 advertisement shown contained an underage person drinking alcohol	8
Morgenstern <i>et al.</i> (2015) ^a	US	Television	42% of advertisements contained messages about partying 24% of advertisements used quality and 17% sports	6
Pasch <i>et al.</i> (2009) ^a	US	Outdoor & public	Culture, youth-oriented, cartoons, animals	9
Howard <i>et al.</i> (2004) ^a	US	Outdoor & public	6% of exterior alcohol advertisements targeted ethnic minorities using color or cultural symbols 31% of interior alcohol advertisements targeted ethnic minorities	8
National Youth Council of Ireland (2009) ^b	Ireland	Television, magazines, newspapers, radio, movies, outdoor & public	62% of all advertisements, 79% of distilled spirits advertisements, 75% of alcohol advertisements deemed appealing to youth	3
Alcohol Marketing: Monitoring in Europe (2010) ^b	Bulgaria	Television, outdoor & public, digital	Overt sexual themes and associations with sporting events more common	0
Alcohol Marketing: Monitoring in Europe (2010) ^b	Denmark	Magazines, newspapers, outdoor & public, digital	Children targeted using cartoons Females targeted through product glamorization Males targeted through sporting events and larger proportions	0

(Continues)

Table 2. (Continued)

<i>Authors/organization (year of publication)</i>	<i>Country</i>	<i>Medium</i>	<i>Prevalent content/other findings</i>	<i>Total methods criteria met</i>
Alcohol Marketing Monitoring in Europe (2010) ^b	Germany	Television, digital	Children targeted through interactive games and cartoon characters	2
Alcohol Marketing Monitoring in Europe (2010) ^b	Italy	Television, magazines, outdoor & public, digital	Distilled spirits promoted using humor and irony Beer promoted using sports	2
Alcohol Marketing Monitoring in Europe (2010) ^b	the Netherlands	Television	Youth targeted using cartoons and young models Humor, music, product information, life-style and sports	3
Association to Reduce Alcohol Promotion in Ontario (2004) ^b	Canada	Television, magazines	'Simulated lesbianism' used to attract males Health benefits promoted to attract the health-conscious	0
de Bruijn (2011) ^b	The Gambia, Ghana, Nigeria, Uganda	Television, magazines, newspapers, radio, outdoor & public	Athletic, social, and financial success Cartoons used to target children in Ghana Between 13 and 33 alcohol advertisements on Ugandan, Nigerian or Ghanaian television	3
Public Health Foundation of India (2013) ^b	India	Television, magazines, radio, outdoor & public, movies, digital	Between 5 and 101 alcohol advertisements on Ugandan, Nigerian, or Ghanaian radio Surrogate advertisements used to circumvent advertising bans Sexual success used to attract men	0
Nicholls (2012) ^a	UK	Digital	Social acceptance used to attract women Social media posts included real-world tie-ins, quizzes, surveys, giveaways, competitions, sponsored shows, and new drink types	4
European Centre for Monitoring Alcohol Marketing (2009) ^b	World-wide	Digital	Direct marketing to consumers occurs through social media outlets Websites contain tickets to concerts and sporting events, free music, free clothing	0
The Center on Alcohol Marketing and Youth (2004) ^b	US	Digital	Interactive content, video games, downloadable wallpapers, cartoon figures, downloadable screensavers common	2

^aPaper published in a peer-reviewed journal; ^bnon-peer-reviewed report.

Canada, where alcohol advertisements have used 'simulated lesbianism' in attempts to gain a greater share of the heterosexual male market [56].

In developing countries, such as Ghana, Nigeria and Uganda, alcohol advertisements used primarily athletic performance, social success and financial success [65]. Ghanaian advertisements were thought to target children by using cartoon characters, including an animated beer bottle. Surrogate advertising, whereby non-alcoholic products are labeled with alcohol brand names, is used in countries such as India, where alcohol advertising on television and radio is banned [66]. Advertisements contained either sexually explicit content to attract men or social acceptance content to attract women [66].

Alcohol-branded content on social media platforms, such as Facebook and Twitter, has been found to contain tie-ins to real-world events, quizzes, surveys, giveaways, competitions, sponsored shows and new types of drinks, with little to no mention of moderate or responsible drinking [67]. Alcohol brands also advertise directly to consumers through Instagram, Reddit and Flickr [66,68]. Alcohol-branded websites have been found to contain interactive content, video games, downloadable content, cartoon figures and information on sponsored events [69].

Alcohol advertising exposure

Exposure measurements

Several types of measurements have been used in research on alcohol advertising exposure. Impressions or impacts are defined as the number of times an individual or group has seen an advertisement [74,75]. Standardized measures [i.e. gross rating points (GRPs), targeted audience rating points (TARPS) or advertisement intensity] are derived from impressions or impacts. GRPs and TARPS are calculated by dividing the gross number of impressions an advertisement generates in the population segment of interest by the number of people in the population segment [74,76]. Advertisement intensity is defined as the total number of times an advertisement is viewed divided by the average number of viewers per time-period per month for a particular TV channel [77].

Individual exposure assessments were conducted most often using market research data, which can indicate media type, channel or publication and advertisement-specific viewership demographics [74]. Although some data were collected through automated processes, self-report was often used to indicate how many advertisements an individual had seen over a specified length of time [74,78]. In addition, some studies used school-based or population surveys to identify all alcohol advertisements viewed within a specified time window, with audience demographics measured at the same time or inferred later [79].

In the following sections, we describe the major foci of studies conducted on alcohol advertisement exposure within five media. The major findings of each study are reported in Table 3. Of the 57 studies conducted in 18 countries, 79% (45 studies) reported some amount of youth exposure to alcohol marketing.

Television

Twenty-eight studies on exposure to TV advertisements were conducted in the United States, Australia, the European Union (EU), Brazil and Zambia [45,52,74–76,78–100]. This research was focused on the exposure of underage youth to alcohol marketing, possible targeting of specific population segments, violations of the 30% rule and trends in code violation rates. Several studies conducted in the United States indicate that large numbers of underage youth have been exposed routinely to alcohol marketing. For example, in 2010, 23.7% of alcohol advertisements broadcast and 33.3% of alcohol impressions in 25 of the largest markets in the United States were placed in programming exceeding the industry's exposure threshold [79]. Although the FTC, using data supplied by the alcohol industry, reports high compliance with the exposure guidelines [82,83], studies have indicated that youth exposure to alcohol advertisements from television has been increasing over time [74]. Studies in Australia and the United Kingdom have reached similar conclusions [75,76]. High rates of alcohol advertising awareness among underage populations have been reported in Brazil, Scotland and Ireland [78,87–89].

Magazines and newspapers

Fifteen studies conducted in four countries evaluated the prevalence of youth exposure to alcohol advertisements in magazines and newspapers [40,73,77,82,94,101–107]. In Australia, 74.7% of 12–17-year-olds reported seeing at least one alcohol-branded magazine advertisement [101]. On a per-capita basis, US youths aged 12–20 were exposed to 48% more magazine beer advertisements, 20% more distilled spirits advertisements and 92% more alcohol advertisements than the 21 and older population during 2003 [94,103]. The FTC reports high compliance with the industry's exposure threshold [83]. Nevertheless, youth exposure to alcohol advertisements in magazines has increased over time [105].

Radio

Ten studies conducted in the United States investigated youth exposure to alcohol advertising through radio [82,83,94,101,108–110]. In 2004, 2006 and 2009, approximately 14, 8.1 and 9.2% of the advertisements were broadcast when the audience contained greater than 30% underage listeners, respectively [108–110]. Youth

Table 3 Compendium of studies devoted to the evaluation of youth exposure to alcohol advertising.

<i>Authors/organization (year of publication)</i>	<i>Country</i>	<i>Medium</i>	<i>Main findings</i>	<i>Methods criteria met</i>
The Center on Alcohol Marketing and Youth (2012) ^b	US	Television	2 664 919 alcohol advertisements on US TV from 2001–09 6.1–12.5% shown to audiences with greater than 30% youth Year-over-year growth of GRPs was faster for under 21 population than any other age group	2
Ross <i>et al.</i> (2013) ^a	US	Television	81 unique brands advertised after 9:00 p.m. in 2010	4
Ringel <i>et al.</i> (2006) ^a	US	Television	92% of alcohol advertisements were shown on cable networks in 2010 39% of advertisements in 2010 were shown during sports programming Male youth are more likely to be exposed than female youth	5
Jernigan <i>et al.</i> (2005) ^a	US	Television, magazine, radio, digital	From 2001 to 2003, 24% of advertisements were more likely to be seen by underage youth than legal adults on television per capita 12–20 years were exposed to 48% more beer, 20% more distilled spirits, and 92% more alcopop advertisements than the adult population in 2003 Youth heard more radio advertisements per capita than adults in 14 of the 15 largest US markets in 2003 Branded websites received up to 90 000 in-depth visits by under 21 individuals in 2003	4
Chung <i>et al.</i> (2010) ^a	US	Television	Beer, wine and distilled spirits advertisements grew by 16, 173 and 1658% during programming with greater 30% underage viewers between the 2001–03 and 2004–06 periods	6
Jernigan <i>et al.</i> (2013) ^a	US	Television	23.7% of all alcohol advertisements and 33.3% of all impressions occurred during programming with greater 30% youth in the 25 largest US markets in 2010	4
Ross <i>et al.</i> (2016) ^a	US	Television	From 2005 to 2012, youth were exposed to 15.2 billion non-compliant alcohol advertisement impressions	4
Federal Trade Commission (2008) ^b	US	Television, magazines, newspapers, radio	There were 131.5 billion youth alcohol advertisement impressions overall 93.9% of television advertisements, 92.0% of radio advertisements, 99.8% of newspaper advertisements, and 98.5% of magazine advertisements were placed where more than 70% of the audience was 21 years old or older	1
Federal Trade Commission (2014) ^b	US	Television, magazines, newspapers, radio, digital	94.6% of nationally televised advertisements, 92.9% of radio advertisements, 99.4% of magazine advertisements, 100% of newspaper advertisements and 99.5% of online measured advertisements were placed where more than 70% of the audience was 21 years old or older	1
Winter <i>et al.</i> (2008) ^a	Australia	Television	13–17-year-old viewers exposed to comparable alcohol advertisements as 18–24–old viewers	3

(Continues)

Table 3 (Continued)

Authors/organization (year of publication)	Country	Medium	Main findings	Methods criteria met
Table 3. (Continued) Fielder <i>et al.</i> (2009) ^a	Australia	Television	13–17-year-olds exposed to 3.5–5.4 alcohol advertisements per week on Australian Free-to-Air TV	4
Davoren <i>et al.</i> (2012) ^a	Australia	Television	117 000 5–17-year-olds were exposed to up to 35 minutes of alcohol marketing	2
Ofcom (2013) ^b	UK	Television	1.4% of all advertisements seen by 4–15-year-olds was for alcohol in 2011, equaling 1.4 billion impacts	4
Alcohol Concern (2010) ^b	UK	Television	Advertisements viewed per week increased 18.5% from 2007	4
Alcohol Concern (2014) ^b	UK	Television	Up to 1.651 million 4–15-year-old UK youth exposed to alcohol advertisements per World Cup match in 2010	2
de Bruijn <i>et al.</i> (2012) ^b	Bulgaria, Denmark, Germany, Italy, the Netherlands	Television, outdoor & public	Nearly 100 alcohol references and 10 alcohol commercials were shown per World Cup match in 2014	2
Wimpenny <i>et al.</i> (2012) ^b	Germany, the Netherlands, UK	Television, digital	Under 18-year-old viewership surpassed 1 million in 3 of 6 matches studied	7
Phnsky <i>et al.</i> (1999) ^a	Brazil	Television	Each underage viewer exposed to 44 alcohol advertisements on average	5
Phnsky <i>et al.</i> (2010) ^a	Brazil	Television, outdoor & public	Overexposure to alcohol advertisements among youth range from 1.4 to 42%	5
Gordon <i>et al.</i> (2010) ^a	Scotland	Television, outdoor & public	In the UK and the Netherlands there is a positive association between younger viewers and advertisement intensity	5
Gordon <i>et al.</i> (2011) ^a	Scotland	Television	142 unique videos on YouTube have been created by 5 alcohol brands generating 9 584 371 views by March 2012	5
Fanning (2010) ^b	Ireland	Television, digital	These brands also had 578 197 'likes' on Facebook and 12 188 Twitter followers	2
Swahn <i>et al.</i> (2011) ^a	Zambia	Television	4.6% of all television advertisements are for alcohol	6
			78.1% of 14–17-year-olds report seeing an alcohol advertisement in the last week	
			91.4% report seeing point-of-sale alcohol advertisements	
			77% of 12–14-year-olds were aware of alcohol advertising on TV	
			In-store advertisements were among the top 5 forms of marketing 12–14-year-olds were most aware of	
			12–14-year-olds are aware of TV advertisements at greater rates than all other media	
			16–17-year-olds reported awareness of 19 sources of alcohol advertising	
			97% were aware of television advertising	
			38% of 16–21-year-olds report seeing an alcohol ad on Facebook or Bebo	
			24% report receiving an online quiz about alcohol or drinking	
			24% of 7–10th graders aware of alcohol advertising on television, in movies or in videos	

(Continues)

Table 3 (Continued)

<i>Authors/organization (year of publication)</i>	<i>Country</i>	<i>Medium</i>	<i>Main findings</i>	<i>Methods criteria met</i>
Collins <i>et al.</i> (2007) ^a	US	Television, magazines, radio, outdoor & public	Grade 6 students are estimated to be exposed to approximately 5 TV beer advertisements, 1.7 magazine alcohol advertisements, 1.9 radio alcohol advertisements and 4.5 in-store beer displays per week	6
Scharf <i>et al.</i> (2013) ^a	US	Television, magazines, radio, outdoor & public, digital	Over 14 days, 20 middle and high school students were exposed to 101 outdoor alcohol advertisements, 37 TV advertisements, 11 internet advertisements 2 magazine advertisements and 0 radio advertisements	2
Martino <i>et al.</i> (2016) ^a	US	Television, magazines, radio,	Middle school students were exposed to 23 446 alcohol advertisements over a 13-day period or 3.1 advertisements per day	5
Molloy (2016) ^a	US	outdoor & public Television, magazines	47% were outdoor & public, 26% were TV, 7% print and 6% radio 18–24-year-olds were exposed to 725 TV and 55 magazine alcohol advertisements in any 6-month period from 2000 to 2007	5
Patil <i>et al.</i> (2014) ^a	Germany, the Netherlands, UK	Television	10–15-year-olds in the UK were 1.11 times more likely to be exposed to alcohol advertising than adults ≥ 25 years old 13–19-year-olds in the Netherlands were 1.29 times more likely to be exposed to alcohol advertising than adults ≥ 20 years old	4
Jones <i>et al.</i> (2011) ^a	Australia	Magazines, outdoor & public, digital	47.7% of 12–17-year-olds report seeing an alcohol ad in a magazine 61% report seeing a billboard advertisement for alcohol	6
Fleming <i>et al.</i> (2004) ^a	US	Magazines, radio, outdoor & public	55% report seeing alcohol advertisements on the internet 15–20-year-olds report seeing 2.79 magazine advertisements, hearing 1.59 radio advertisements, seeing 2.48 billboards for distilled spirits per week	6
Garfield <i>et al.</i> (2003) ^a	US	Magazines	$\times 1.6$ more beer and liquor advertisements are placed in magazines for every additional million underage readers	7
The Center on Alcohol Marketing and Youth (2010) ^b	US	Magazines	29 026 alcohol advertisements placed in US magazines from 2001 to 2008 Youth exposure to alcohol magazine advertisements has increased by 20.3% from 2002 to 2007	4
King C III <i>et al.</i> (2009) ^a	US	Magazines	41.2% of all magazine advertisements from 2002 to 2006 were for alcohol	7
Jernigan <i>et al.</i> (2004) ^a	US	Magazines	Youth were exposed to more magazine alcohol advertisements in 2003 than 2001–02 period	4
Cousins <i>et al.</i> (2008) ^a	New Zealand	Newspapers	368 alcohol-related advertisements appeared in 5 on-campus college newspapers in 2005	5
Wolburg <i>et al.</i> (2009) ^a	Ukraine, US	Magazines	There were 42 unique alcohol advertisements from 25 different alcohol companies in 22 magazines in August 2006	4

(Continues)

Table 3 (Continued)

<i>Authors/organization (year of publication)</i>	<i>Country</i>	<i>Medium</i>	<i>Main findings</i>	<i>Methods criteria met</i>
Table 3. (Continued) Ross <i>et al.</i> (2014) ^a	US	Magazines	Male 18–20-year-olds were exposed to advertisements for 18 of the most consumed brands by youth equal to or more than any other group Female 18–20-year-olds were exposed to advertisements for 18 of the most consumed brands by youth equal to or more than any other group	4
Jernigan <i>et al.</i> (2006) ^a	US	Radio	67 404 radio alcohol advertisements for 24 of the top 25 alcohol brands in the 104 largest markets in 2004 14% aired during programming with greater than 30% youth audience 52% aired during programming with greater than 15% youth audience 27 682 alcohol advertisements placed during programming with greater than 30% youth audience in 2006 in the 28 largest US markets	5
The Center on Alcohol Marketing and Youth (2007) ^b	US	Radio	73 451 alcohol advertisements placed during programming with greater than 30% youth audience in 2009 in the 75 largest US markets	3
The Center on Alcohol Marketing and Youth (2011) ^b	US	Radio	14.1 outdoor alcohol advertisements per city block in Central Harlem, New York City	4
Kwate <i>et al.</i> (2009) ^a	US	Outdoor & public	25% of all outdoor advertisements in Central Harlem, New York City were for alcohol	6
Kwate <i>et al.</i> (2007) ^a	US	Outdoor & public	43.7, 45 and 24% of alcohol advertisements were within 152 m of schools, churches and playgrounds At least 1 advertisement was within 152 m of 79.4, 83.3 and 59.1% of schools, churches, and playgrounds	5
Scott <i>et al.</i> (2008) ^a	US	Outdoor & public	21.2 and 36.9% of alcohol advertisements were within 500 feet of a school, playground or church in 106 Louisiana census tracts and 114 Los Angeles, CA census tracts	5
McKee <i>et al.</i> (2011) ^a	US	Outdoor & public	There were 1701 storefront alcohol advertisements and 53 billboard or public transit advertisements per year from 2003 to 2005 in 450 census tracts in 10 US cities	6
Nyborn <i>et al.</i> (2009) ^a	US	Outdoor & public	There were 1.9 alcohol advertisements per subway car in Boston, MA and 18 296 impressions to 11–18-year-olds each day	5
Gentry <i>et al.</i> (2011) ^a	US	Outdoor & public	There were 1.7 alcohol advertisements per subway station in Boston, MA for a total of 185 212 impressions per day	6
Alcohol Justice (2013) ^b	US	Outdoor & public	14 of the 32 largest public transportation systems in the US continue to allow alcohol advertising	3
de Bruijn (2011) ^b	The Gambia, Ghana, Nigeria, Uganda	Outdoor & public	The density of billboards advertising alcohol can be up to 9 per 500 m of road in Uganda 27 advertisements detected near the center of Accra, Ghana 105 publicly viewable alcohol branded items within the center of Uyo, Nigeria	3

(Continues)

Table 3. (Continued)

Authors/organization (year of publication)	Country	Medium	Main findings	Methods criteria met
Kelly <i>et al.</i> (2008) ^a	Australia	Outdoor & public	25 alcohol advertisements per km ² within 250 m of schools	6
Mastro <i>et al.</i> (2002) ^a	US	Outdoor & public	66 outdoor alcohol advertisements within 5 miles of a single, Mid-western US high school	5
The Center on Alcohol Marketing and Youth (2004) ^b	US	Digital	611 800 in-depth visits to 55 alcohol branded websites by underage individuals in 2003	4
Lin <i>et al.</i> (2012) ^a	New Zealand	Digital	14.6% of 13–14-year-old New Zealand youth were aware of alcohol branded social media sites, 24.4% of downloadable screensavers, 11.7% of websites and 6.1% of e-mail advertising	5
Mart <i>et al.</i> (2009) ^a	World-wide	Digital	By 2009, there were 93 Facebook pages created for alcohol brands with 1.1 million fans plus 500 applications, 2200 sponsored events and 58 000 groups associated with alcohol	3
Jernigan <i>et al.</i> (2014) ^a	US	Digital	Brands popular among youth had in excess of 1 000 000 Facebook 'likes' and 100 000 user submitted comments	3
Wimpeny <i>et al.</i> (2014) ^a	UK	Digital	Median Facebook 'likes', YouTube subscribers and Twitter followers for 5 top UK brands was 122 486, 49, and 3310, respectively	4
McClure <i>et al.</i> (2016) ^a	US	Digital	59% of 15–20-year-olds reported seeing online alcohol advertising 6% reported going to an alcohol-branded website and 3% reported being an online fan of a brand	5
Nhean <i>et al.</i> (2014) ^a	US	Digital	1017 company-sponsored, alcohol-branded sites were located on Facebook	3

GRPs = gross rating points.

Table 4 Percentage of studies meeting each methodological criteria.^a

Questions	Content papers			Exposure papers		
	Peer-review (n = 31)	Non-peer-reviewed (n = 13)	Total (n = 44)	Peer-review (n = 42)	Non-peer-reviewed (n = 15)	Total (n = 57)
	Were inclusion and/or exclusion criteria for the advertisements included in the study specified?	100	53.8	86.4	95.2	73.3
Was a rationale for the use of the inclusion and/or exclusion criteria provided?	64.5	23.1	52.3	47.6	20.0	40.4
Was the method of advertisement collection specified?	54.8	38.5	50.0	92.9	86.7	91.2
Was a rationale for the advertisement sample size provided?	29.0	0.0	20.5	16.7	20.0	17.5
Was the length of time required to rate the advertisements specified?	25.8	15.4	22.7			
Were the characteristics of the raters provided?	74.2	7.7	54.5			
Were the advertisements rated using a validated instrument?	32.3	7.7	25.0			
Were a sufficient number of raters used to rate the advertisements?	29.0	0.0	20.5			
Was a measure of inter-rater reliability calculated and reported?	38.7	0.0	27.3			
Was the method of rating the advertisements specified?	45.2	7.7	34.1			
Were potential sources of bias explicitly identified?	25.8	7.7	20.5	35.7	13.3	29.8
Were study limitations identified?	74.2	7.7	54.5	78.6	20.0	63.2
Was statistical methodology utilized?	58.1	7.7	43.2	59.5	6.7	45.6

^aFrequencies based on Rater 1 ratings.

aged 15–20 reported hearing more alcohol advertisements (1.59) than 21–29-year-olds (1.27) in a typical week [94].

Outdoor and public advertisements

Eighteen studies conducted in nine different countries evaluated exposure to outdoor and public advertisements, which consist of billboards, in-store or point-of-sale posters and advertisements on the walls and vehicles of mass transit systems [65,78,87,95,101,102,111–119]. US youth reported seeing multiple billboards for distilled spirits each week [102], and a majority of Australian youth reported seeing alcohol-branded billboard advertisements [101]. In Scotland, in-store advertisements were among the top five forms of alcohol marketing seen by youth [87], and 91.4% of youths in Brazil reported seeing point-of-sale alcohol advertisements [78]. In Australia, Ghana, Nigeria, Uganda and the United States, multiple studies reported a substantial amount of alcohol advertising near locations with high concentrations of youth [65,111–119]. In areas with few outdoor alcohol advertisements, such as Bulgaria or Italy, large-sized billboards, visible for long distances, may be used [95]. Youth exposure may also occur on US mass transportation systems, including on subway cars, subway stations, buses and bus stops [114–116].

Digital media

Thirteen studies have investigated youth exposure to digital alcohol advertising [45,69,83,89,94,97,101,120–125]. There is high awareness of online alcohol marketing among youths in Australia, New Zealand and Ireland [89,101,120]. By 2009 high levels of alcohol marketing were detected on social media platforms [121], and the presence of alcohol marketing on these platforms has only increased over time [45,122,123,125]. Between January and June 2011, 99.5% of online alcohol advertisements complied with the industry's 30% threshold, according to the FTC [83].

Evaluation of study methods

Gaps in methodology of peer-reviewed papers and non-peer-reviewed reports are described in Table 4. In examining alcohol advertisement content and exposure, few studies provided rationales for the sample size used or described potential sources of bias. Conversely, nearly all studies identified inclusion and exclusion criteria. Peer-reviewed publications met significantly more methods criteria than non-peer-reviewed reports when researching content ($U = 27.5$, $P < 0.001$, $r = -0.68$) and exposure ($U = 523.0$, $P < 0.001$, $r = 0.50$) (Table 5).

Gaps in research coverage by geographic region and medium are evident (Table 5). Publications principally concerned countries in the Americas (58.3%), Europe (22.9%) and the Western Pacific (14.6%). Publications containing

information on television (56.3%) and magazine or newspapers (35.4%) were most prevalent.

DISCUSSION

Main findings

Our review demonstrates that alcohol advertisements consistently violate the content guidelines of alcohol marketing self-regulatory codes and contain themes that could be considered inappropriate for children, adolescents and other vulnerable populations, with little variation across time. Of the 19 code studies and 25 content analysis studies reviewed, all detected content that could be considered potentially harmful to youth.

Beyond content, exposure studies evaluated the extent to which vulnerable groups are likely to be exposed to alcohol marketing. Although several different methods have been used to measure alcohol advertising exposure, the 57 studies reviewed from 18 countries demonstrate high exposure to alcohol advertising and high awareness of alcohol advertising among youth.

Other findings

Alcohol marketing has used similar thematic elements consistently over time, suggesting that self-regulation has not impacted the content of alcohol advertising significantly. The use of physical success, health, humor and relaxation was documented in the 1980s, 1990s and 2000s [49,50,53,54]. The use of young, attractive or famous models was also documented across these periods. An important change that has occurred is the use of youth-oriented content, with cartoon characters in television advertisements and the availability of youth-oriented digital content being observed in more recent studies [58–63].

Although compliance with the alcohol industry's youth exposure guidelines has increased over time, the number of youth exposed to and aware of alcohol advertising has also increased, suggesting that current exposure thresholds may need to be lowered or the guidelines strengthened by using additional exposure metrics. For example, one study found that alcohol advertisements were more likely to appear in magazines with underage readers [77]; another study found that youth may be exposed to more advertisements than adults on a per-capita basis [105]. For outdoor advertising, IARD's *Guiding Principles* do not include restrictions on the proximity of outdoor advertisements to schools or other locations, and it is possible that fewer than 30% of the residents of the census tract where a school exists are under the legal purchase age [19]. Under such conditions, alcohol advertisements placed immediately adjacent to a school would not constitute a violation of the exposure guidelines. Moreover, digital alcohol-branded content may be easily accessible

Table 5 Comparison between peer-reviewed papers and non-peer-reviewed reports according to geographic location of study, communication medium investigated and methods criteria met.

	Peer-reviewed papers	Non-peer-reviewed reports	All publications
<i>n</i> (%)	71 (74.0)	25 (26.0)	96 (100)
Reports by WHO region (%) ^a			
Africa	1 (1.4)	1 (4.0)	2 (2.1)
Americas	46 (64.8)	10 (40.0)	56 (58.3)
Eastern Mediterranean	0 (0.0)	0 (0.0)	0 (0.0)
Europe	10 (14.1)	12 (48.0)	22 (22.9)
South-East Asia	1 (1.4)	1 (4.0)	2 (2.1)
Western Pacific	14 (19.7)	0 (0.0)	14 (14.6)
World-wide	1 (1.4)	1 (4.0)	2 (2.1)
Medium (%) ^a			
Television	37 (52.1)	17 (68.0)	54 (56.3)
Magazines/newspapers	25 (35.2)	9 (36.0)	34 (35.4)
Radio	7 (9.9)	6 (24.0)	13 (13.5)
Outdoor & public advertisements	18 (25.4)	9 (36.0)	27 (28.1)
Digital media	11 (15.5)	10 (40.0)	21 (21.9)
Movies	0 (0.0)	2 (8.0)	2 (2.1)
Methods criteria met ^b			
Content ^c	7.0 (5.0–8.5)	1.0 (0–3.5)	6.0 (4.0–8.4)
Exposure ^d	5.0 (4.0–5.5)	3.0 (2.0–3.5)	4.0 (3.1–5.0)

^aPercentages may not sum to 100% for each column, as a publication can contain information on more than one region or medium; ^bMedian(IQR); ^ccontent: $U = 27.5.0$, $Z = -4.49$, $P < 0.001$, $r = -0.68$; ^dexposure: $U = 523.0$, $Z = 3.798$, $P < 0.001$, $r = 0.50$.

to youth, as existing age-gating technology is ineffective [126,127], and youth may use false information to gain access to such content [127].

Implications and recommendations

To the extent that the current evidence suggests widespread circumvention of the spirit and the letter of alcohol marketing regulations, several alternatives should be considered. The first is a total ban or rigorous statutory regulation of alcohol marketing along the lines of the Loi Évin or Thailand's Alcohol Control Act, which states that no alcohol advertisement can contain information that would induce another person to drink [6,128]. If rigorous statutory regulation is politically unfeasible, improvements in current self-regulated exposure guidelines could be implemented as an interim step. These include stronger exposure and content guidelines, enhanced enforcement, stricter penalties for violators and an alternate code interpretation.

There are several ways in which the exposure and content guidelines of alcohol marketing self-regulated codes could be strengthened. The audience composition threshold for individuals under the legal purchase age could be reduced. As evidenced by the high rates of youth exposure, a rate benchmarked to, or near, the population proportion of underage youth is inadequate to prevent alcohol marketing exposure. This threshold should be based on the audience composition data available to the alcohol industry as

stated in their buying guidelines. For example, the US Beer Institute's advertisement-buying guidelines state that audience composition data can be available for the 12+ or the 18+ populations [129]. When information on the 12+ population is available, the threshold should be benchmarked to this rate, which is approximately 15% in the United States [130]. When information on the 18+ population is available, the threshold should be similarly benchmarked, which is approximately 5% in the United States.

For television and radio, if exposure guidelines specify exact times when alcohol advertisements can be broadcast, such as from 11:00 p.m. to 6:00 a.m., there should be no exceptions. However, caution should be taken with this approach. Instead of reducing the volume of alcohol advertising, alcohol advertisements may simply become more concentrated, thus increasing exposure to teens and young adults who are in the broadcast audience [93]. Moreover, to prevent youth exposure to digital content, systems that require validation of personal information, such as a driver's license number or passport number, should be implemented.

Stronger content guidelines can be developed to eliminate loopholes. Code regulations may be purposefully vague and multiple interpretations of the same regulation can result. For example, guidelines designed to protect underage populations often use the term 'primarily' to distinguish content that is generally attractive to all audiences versus content that is specifically attractive to those who

are underage [19,20,22,23]. The use of this term provides alcohol companies with a readily available justification for using content that is attractive to youth, but not overtly so.

Enhanced enforcement of advertising codes can occur through a pre-clearance mechanism, where a panel of health professionals and representatives of vulnerable populations would review all communications using reliable content rating procedures to identify code violations before advertisement dissemination [37,131]. Advertisement dissemination through any medium would be prohibited until panel approval is granted. Under current systems, code enforcement occurs primarily through complaints made by concerned citizens or watchdog groups after an advertisement has been published.

Penalties against code violators may be necessary for deterrence. Although IARD's *Guiding Principles* contain brief language on code implementation and a complaint process, penalties for violating the code are not discussed [19]. Because complaints and code enforcement occur after advertisement distribution, an advertising campaign may have concluded by the time a complaint is adjudicated, effectively eliminating advertisement removal as a deterrent. The institution of penalties, such as those described by the Loi Évin (i.e. monetary penalties, removal of existing advertising, banning future sales for repeat offenders) will be essential in systems that lack a pre-clearance mechanism [6].

An alternate perspective for guideline interpretation, one based on principles of developmental psychology and public health rather than legal definitions, is necessary. The harmful effects of alcohol advertising are probably mediated through the perceptions of the viewers. Evidence of this is available through a number of studies demonstrating the attractiveness of alcohol advertising to youth [3,132]. When alcohol advertisements are reviewed, the perception of advertisement content by public health professionals and members of vulnerable populations must be taken into account in the determination of code compliance. Such an interpretation may also decrease the impact of built-in guideline loopholes.

Studies of alcohol content require standardized methods, a sufficient number of raters and a standard advertising code [131]. Rating systems that are designed to build group consensus, such as the Delphi method, have been shown to identify effectively violations of the content guidelines of self-regulated alcohol marketing codes [32,37,131]. With the development of IARD's *Guiding Principles* and promotion of these guidelines as the benchmark for self-regulation, a standardized rating form could be developed that will apply to all locations where self-regulation predominates [19].

Studies of alcohol exposure require an objective, standardized measurement of self-reported advertisement exposure, suitable for multiple age groups, and a single,

standardized measure of advertisement placement to improve interstudy comparability. Comparable measurements must also be developed for outdoor and public advertisement exposure and for exposure to digital alcohol-branded content. Assessing exposure to digital content may pose a particular challenge as social media platforms can be accessed from smartphones or tablet apps, bypassing standard internet traffic monitoring systems. Research should also be expanded to increase geographic diversity. There are a number of WHO regions where data on alcohol advertising is non-existent.

Limitations

One limitation of this review is the inclusion of only English language papers and reports. There may be pertinent non-English publications that were overlooked due to language barriers. In addition, no attempt was made to perform a meta-analysis, although a methodological analysis was conducted. The disparate methodologies used in the reviewed publications are not conducive to a meta-analysis, and any results would be difficult to interpret. Other limitations pertain to the geographic locations and media covered by the available research (see Table 5). The lack of research in developing countries is particularly notable in light of the increased amount of alcohol marketing in these countries [133]. Another limitation is the relative lack of research on alcohol advertising in media other than television and print. Evaluation research on digital content and movies is needed to monitor increased industry attention to these media. Finally, we were unable to determine alcohol advertisement exposure to other vulnerable populations, such as pregnant women, minorities or people with alcohol dependence, as current literature focuses exclusively on youth exposure.

CONCLUSIONS

Despite methodological concerns the studies reviewed here, utilizing multiple research methods, demonstrate that a significant proportion of alcohol marketing contains content that may be attractive to youth and that youth are exposed disproportionately to alcohol marketing. Regarding the content of alcohol advertising, there were 19 studies that referenced an advertising code, and 15 concluded that self-regulation was ineffective. None concluded that self-regulation was effective. Regarding exposure to alcohol marketing, youth continue to be exposed to high rates of alcohol marketing even though the alcohol industry may be complying with their own exposure thresholds. Taken together, the findings of this review suggest that the current self-regulatory systems that govern alcohol marketing practices are not meeting their intended goal of protecting vulnerable populations. Based on the

precautionary principle, major modifications of the current system, or the implementation of statutory regulations in the interests of public health, are needed.

Declaration of interests

None.

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Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Appendix S1 Grading criteria for content and exposure studies.

Does industry self-regulation protect young people from exposure to alcohol marketing? A review of compliance and complaint studies

Jonathan K. Noel & Thomas F. Babor

Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington, CT, USA

ABSTRACT

Background and Aims Exposure to alcohol marketing is considered to be potentially harmful to adolescents. In addition to statutory regulation, industry self-regulation is a common way to protect adolescents from alcohol marketing exposures. This paper critically reviews research designed to evaluate the effectiveness of the alcohol industry's compliance procedures to manage complaints when alcohol marketing is considered to have violated a self-regulatory code. **Methods** Peer-reviewed papers were identified through four literature search engines: PubMed, SCOPUS, PsychINFO and CINAHL. Non-peer-reviewed reports produced by public health agencies, alcohol research centers, non-governmental organizations, government research centers and national industry advertising associations were also included. **Results** The search process yielded three peer-reviewed papers, seven non-peer reviewed reports published by academic institutes and non-profit organizations and 20 industry reports. The evidence indicates that the complaint process lacks standardization across countries, industry adjudicators may be trained inadequately or biased and few complaints are upheld against advertisements pre-determined to contain violations of a self-regulatory code. **Conclusions** The current alcohol industry marketing complaint process used in a wide variety of countries may be ineffective at removing potentially harmful content from the market-place. The process of determining the validity of complaints employed by most industry groups appears to suffer from serious conflict of interest and procedural weaknesses that could compromise objective adjudication of even well-documented complaints. In our opinion the current system of self-regulation needs major modifications if it is to serve public health objectives, and more systematic evaluations of the complaint process are needed.

Keywords Advertising, alcohol, alcohol industry, compliance, marketing, self-regulation.

Correspondence to: Thomas F. Babor PhD, MPH, Department of Community Medicine and Health Care, UConn School of Medicine, 263 Farmington Avenue, MC 6325, Farmington, CT, USA. 06030-6325. E-mail: babor@uchc.edu
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INTRODUCTION

Exposure to alcohol marketing is considered potentially harmful to adolescents [1–3]. For this reason, marketing regulations have been implemented in many countries to restrict exposure, control content and monitor compliance with advertising standards. In addition to statutory regulation, industry self-regulation is one of the most common ways to protect adolescents from alcohol marketing.

Considerable attention has been paid to alcohol advertisement content and exposure, yet relatively little research has been conducted on the procedures used by the alcohol industry to monitor, detect and remove advertisements when violations of a self-regulated alcohol marketing code occur. The International Alliance for Responsible Drinking

(IARD), an alcohol industry-funded organization, has promoted the Guiding Principles, which are intended to be a model alcohol self-regulatory marketing code [4]. The Guiding Principles also call for a transparent, readily accessible process for resolving complaints regarding potential violations of a self-regulated alcohol marketing code. However, the Guiding Principles do not outline a framework for a complaint resolution system, leaving it to individual countries or companies to design a system that is efficient (i.e. decisions are made before exposure to non-compliant advertisements occur) and effective (i.e. it identifies potentially harmful content in advertisements with a high degree of reliability and validity).

This paper reviews peer-reviewed papers and grey literature that provide information on the effectiveness of the

alcohol industry's compliance procedures to manage complaints when alcohol marketing is considered to have violated a self-regulatory code. The importance of such research is highlighted by the fact that the complaint process is the primary means to remove non-compliant advertisements from the exposure environment, although there are exceptions. This review was conducted to: (1) identify current complaint procedures and identify adjudicating bodies; (2) determine the effectiveness of existing processes at removing advertisements non-compliant with a self-regulatory marketing code; and (3) ascertain compliance rates as reported by alcohol or advertising industry sources.

METHODS

Four literature search engines, PubMed, Scopus, PsychINFO and CINAHL, were used initially to locate information on the alcohol code compliance review process using the search terms 'alcohol AND (marketing OR advertising) AND compliance'. Paper reference lists were also reviewed to identify additional relevant research papers that did not appear in the search results. Studies were selected for inclusion if they contained information on the (1) procedures used during the complaint process of a self-regulatory marketing system; (2) effectiveness of the complaint process at removing non-compliant marketing materials; or (3) compliance rate of the alcohol industry. There were no date restrictions. Studies were excluded if they were published in a non-English journal or were an editorial, opinion or review paper. Non-peer-reviewed literature produced by public health agencies, alcohol research centers, non-governmental organizations and government research centers was searched for reports focusing on alcohol, alcohol advertising and the alcohol advertising self-regulatory system. Reports generated by national industry advertising associations were also searched for relevant information. Information was abstracted by a doctoral student (J.N.) and verified by the project supervisor (T.B.).

RESULTS

PubMed, SCOPUS, PsychINFO and CINAHL returned 34, 76, 25 and 1183 search results, respectively. One relevant paper was located. Three peer-reviewed papers were located by scanning the reference list of a systematic review of alcohol advertisement content and exposure [5]. Seven non-peer-reviewed reports published by academic institutes and non-profit organizations and 20 annual reports published by alcohol advertising review organizations were also identified. Reports were obtained from the following organizations: the UK Advertising Standards Authority (ASA), Alcohol Concern, the Alcohol Marketing Communications Monitoring Body (AMCMB), the Alcohol Marketing Monitoring in Europe (AMMIE) project, the Association to

Reduce Alcohol Promotion in Ontario, the Australian Advertising Standards Board (AASB), the Australian Alcohol Advertising Review Board (AARB), the Distilled Spirits Council of the United States (DISCUS), the Enforcement of National Laws and Self-regulation on advertising and marketing of Alcohol (ELSA) project, the European Centre for Monitoring Alcohol Marketing (EUCAM), the European Forum for Responsible Drinking (EFRD), the Marin Institute (now Alcohol Justice) and the US Beer Institute.

Complaint process

Typically, a non-governmental organization, watchdog group or an independent citizen prepares a complaint according to a procedure dictated by the industry organization responsible for compliance review. In some cases, industry representatives have filed complaints against competitors' marketing practices [6]. These complaints may require a written letter or an online submission [7,8]. When a complaint is filed, the complainant is asked to describe why the advertisement violates specific sections of a particular industry self-regulation code. However, once the complaint is filed, the process and procedures vary from country to country and among different industry groups. In some cases, the complaint process has multiple stages. For example, the US Beer Institute requires multiple complaint submissions and confirmations that a complaint was intended to be submitted before a final decision by the Code Compliance Review Board (CCRB) can be made.

A complaint is heard by a review board, which often consists of industry-appointed representatives with a legal or business background. The size of the review board varies from only a few members to larger groups composed of more than 100 members. For instance, complaints made to the UK ASA are adjudicated by the ASA Council. The Council is comprised of 14 individuals; two-thirds are independent of the advertising industry while the remaining members have current knowledge of the advertising sector, although none has public health or substance use backgrounds [9]. The Italian Advertising Review Board consists of 15 individuals with expertise in legal matters, consumer affairs, advertising techniques and communications media [10]. The US Beer Institute uses a three-person panel consisting of a marketing professor, a lawyer and a media production expert, all appearing to have conflicts of interest [11], while the AARB uses a 122-member panel composed of individuals from public health, scientific research, medicine, alcohol and other drug treatment services, law, education, social services and marketing [12].

Complaint process effectiveness

Three peer-reviewed papers and eight non-peer reviewed reports that tested the effectiveness of existing complaint

processes at removing non-compliant alcohol marketing communications were located. All research published in the peer-reviewed papers was conducted in Australia. In 1986 and 1987, 16 advertisements determined to violate the advertising code by members of the public were submitted to the Advertising Standards Council, the predecessor to the AASB, and all but one of the complaints were rejected [13]. Between May 1998 and April 1999, 11 complaints were submitted on nine advertisements determined to contain code violations by a panel of university students [14]. It seems that no communications were received by the authors regarding whether or not the complaints were upheld, and it was assumed that the AASB never forwarded the complaints to the review committee. In 2004 and 2005, 14 advertisements pre-determined to contain code violations by an expert panel were submitted to the AASB, and none were upheld [15].

Research published in non-peer-reviewed reports was conducted in North America and Europe. In the European Union (EU), 199 complaints were issued regarding 84 alcohol advertisements to the respective Advertising Code Committees in Bulgaria, Denmark, Germany, Italy and the Netherlands [16,17]. Of the complaints filed, 71% were rejected, 24% were upheld and no decision had been made on 5% of the advertisements at the time of the report. Only five of 47 complaints (10.6%) stating that the advertisement was attractive to youth, as pre-determined by youth rating panels, were upheld. In Denmark, the Alcohol Policy Network submitted 59 complaints against alcohol marketing practices between 2000 and 2005, with more than 50% involving marketing to young people, and 37 were upheld [18]. In Canada, a voluntary pre-clearance process has existed since 1997, and in 1998 44% of 5200 advertisements were approved without modification, 44% were approved but changes were required and 12% were rejected [19,20]. In 2004, there were 230 complaints against Canadian alcohol advertisements and only 24 were upheld [19].

In a Marin Institute (now Alcohol Justice) report investigating 78 complaints on 93 advertisements made to DISCUS from 2004 to 2007, they determined that a majority of complaints (56%) were filed by alcohol-industry representatives, with individuals, third-party organizations and public officials filing all others [6]. Of all complaints, 43 (46%) were upheld and 35 advertisements were either removed from the market-place or the advertiser promised to comply with the DISCUS code in the future. Moreover, complaints filed by the alcohol industry may have been used for corporate gain. For instance, it appears that if a company representative is not on the DISCUS board, advertisements are three times more likely to be found non-compliant than if a company representative serves on the DISCUS board [6]. Complaints generated by industry members were also 12.7 times more likely to be upheld than complaints from

non-industry sources. Similar findings have been found in the United Kingdom, where the Portman Group dismissed a complaint against Absolute Vodka alleging that the cartoon characters used on the bottle were attractive to youth, but upheld a complaint against a small brewery which appears to have been similar [21].

Annual reports

Annual reports are often published by organizations that review complaints made against alcohol advertisements. The reports summarized here are from Australia, the European Union and the United States. Between 2006 and 2014 the US Beer Institute received 14 complaints from watchdog groups and independent citizens regarding non-compliance of beer advertisements to their Marketing and Advertising Code [22]. After review by the CCRB, only one advertisement was determined to contain a violation, an internet advertisement for the alcoholic-energy drink Sparks. It was removed from the market-place while all other complaints were dismissed unanimously. From 2008 to 2015, DISCUS received 40 complaints on 52 advertisements, with the majority of complaints being made by industry sources (67.5%) [23–28]. In all, 27 complaints were upheld, resulting in 15 advertisements being pulled from the market-place. In Canada only 19 complaints were reviewed in 2012, none of which were upheld [29].

Ireland's AMCMB has produced annual reports on code compliance of Irish alcohol advertisements since 2006. In 2006 there were 28 exposure guideline violations for advertisements placed on television [30]. By 2011, only one breach of the exposure guidelines was reported, despite more stringent exposure requirements approved in October 2008 [31]. The UK ASA utilizes a pre-clearance process before alcohol advertisements are disseminated. A compliance rate of 99.7% was found among all media in 2009 [32], slightly higher than digital advertisements from other sectors [33]. When complaints are made to the ASA by the public most are upheld at least partially, although no significant damages are imposed on the advertisers [20]. Between 2010 and 2012, the AASB received 304 complaints for 175 advertisements, but only 157 complaints were reviewed by the Adjudication Panel [34–36]. Of the complaints reviewed, 42 (26%) were upheld, at least in part. Another Australian organization, the AARB, received 200 complaints in 2012 and 2013, 104 of which were upheld completely and 32 were upheld in part [12]. The EFRD determined that 249 alcohol advertisements broadcast in 15 European countries in 2006 were non-compliant with local alcohol regulations, including 146 that violated self-regulated marketing codes and 103 that violated the Loi Évin in France [37]. However, only 50 advertisements were the subject of a complaint and only 15 complaints were upheld.

DISCUSSION

The purpose of this paper was to identify current complaint procedures in self-regulatory marketing systems, determine the effects of existing processes at removing non-compliant advertisements from the market-place and report industry compliance rates with existing marketing codes. Current complaint submission systems use non-standardized processes, and in our opinion adjudicators may be trained inadequately or be biased when reviewing advertisement complaints. Only a few systematic evaluations have been published, and these conclude that few complaints, if any, are upheld by industry review boards even for advertisements pre-determined to contain code violations. Industry compliance rates reported in annual reports are typically high, but it is not possible to say whether the complaint process is successful in removing potentially harmful advertising material or that the compliance rates are reliable in the absence of an independent 'gold standard'. Interestingly, the complaint process may be effective at allowing the industry to engage in anti-competitive behaviors, as complaints may be filed by competing companies.

Code violations can be prevalent [5], and to the extent that formal complaints amount to only a fraction of the advertisements that may have code violations, it is highly unlikely that the current complaint procedures utilized by the alcohol industry result in sufficient monitoring or advertisement modifications to have an impact on public health. Complaints where advertisements have been pre-determined to contain violations are often dismissed and, when upheld, actions against an advertiser typically include promises to comply in the future rather than actual changes in current practices. The literature and data we reviewed revealed no instances of actual penalties being imposed for admitted code violations, other than the removal of an advertisement from further broadcasting. Where financial penalties could be imposed, such as in Italy, potential fines have been characterized as absurdly low, only a few thousand euros, or so high that it would be impractical to implement [10].

The logical consequence of multiple submissions and confirmations required in some instances is that non-compliant advertisements are allowed to be broadcast long after the complaint was filed. When compliance determinations by review committees are finally made, the advertisement may have already been removed from the public for strategic purposes rather than compliance-related reasons. Moreover, according to Jeff Baker, former president of the US Beer Institute, the review panels may have no authority to enforce compliance should an advertisement remain publicly visible [38]. There is some evidence to suggest that a pre-clearance mechanism for alcohol advertisements, in addition to a complaint process, is likely to be more effective

than a post-marketing complaint process alone. There is insufficient evidence to determine system efficiency, however. In theory, the use of a pre-clearance procedure would eliminate many efficiency problems.

Another issue is the process of determining the validity of complaints. The industry-appointed review boards appear to have a major institutional conflict of interest in that they are appointed and paid by an industry that could lose considerable revenue if an advertisement complaint is upheld. It seems that most of the review panels are composed of individuals with no public health background. It also appears that none of the boards contain representatives of the vulnerable populations the codes are supposed to protect, and none of the boards were found to use objective review procedures specifically designed to detect code violations [39]. Even if the boards were constituted properly with qualified members, we were unable to find any industry-appointed board that used robust procedures to ensure reliable ratings. Recent research suggests that expert panels charged with using objective rating procedures need to have at least 15 members to achieve optimal levels of reliability [40].

Limitations

Research on the alcohol advertisement complaint process has a number of limitations. Currently, there are few peer-reviewed studies that have performed a systematic evaluation of the process, and these studies were conducted solely in Australia. Research that utilizes advertisements pre-determined to contain code violations is needed. Moreover, the lack of peer-reviewed research necessitated increased reliance upon non-peer reviewed reports from non-profit organizations and industry sources, which may be unreliable.

CONCLUSIONS

In our opinion, the process of determining the validity of complaints employed by most industry groups suffers from serious conflicts of interest and procedural weaknesses that could compromise objective adjudication of even well-documented complaints. Few studies have evaluated the industry's complaint process systematically and more research is needed. Nevertheless, the results of the current review of the complaint processes established to protect vulnerable populations suggest that the current system of self-regulation needs major modifications if it is to serve public health objectives.

Declaration of interests

None.

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Alcohol industry self-regulation: who is it really protecting?

Jonathan Noel¹, Zita Lazzarini¹, Katherine Robaina¹ & Alan Vendrame²

Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington, CT, USA¹ and Department of Psychiatry, Federal University of São Paulo, São Paulo, Brazil²

ABSTRACT

Self-regulation has been promoted by the alcohol industry as a sufficient means of regulating alcohol marketing activities. However, evidence suggests that the guidelines of self-regulated alcohol marketing codes are violated routinely, resulting in excessive alcohol marketing exposure to youth and the use of content that is potentially harmful to youth and other vulnerable populations. If the alcohol industry does not adhere to its own regulations the purpose and design of these codes should be questioned. Indeed, implementation of alcohol marketing self-regulation in Brazil, the United Kingdom and the United States was likely to delay statutory regulation rather than to promote public health. Moreover, current self-regulation codes suffer from vague language that may allow the industry to circumvent the guidelines, loopholes that may obstruct the implementation of the codes, lax exposure guidelines that can allow excessive youth exposure, even if properly followed, and a standard of review that may be inappropriate for protecting vulnerable populations. Greater public health benefits may be realized if legislative restrictions were applied to alcohol marketing, and strict statutory alcohol marketing regulations have been implemented and defended successfully in the European Union, with European courts declaring that restrictions on alcohol marketing are proportional to the benefits to public health. In contrast, attempts to restrict alcohol marketing activities in the United States have occurred through private litigation and have been unsuccessful. None the less, repeated violations of industry codes may provide legislators with sufficient justification to pass new legislation and for such legislation to withstand constitutional review in the United States and elsewhere.

Keywords Advertising, alcohol, alcohol industry, marketing, regulation, self-regulation.

Correspondence to: Jonathan K. Noel MPH, Department of Community Medicine and Health Care, UConn School of Medicine, 263 Farmington Avenue, MC 6325, Farmington, CT, USA 06030-6325. E-mail: jnoel@uchc.edu

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INTRODUCTION

The International Center for Alcohol Policies (ICAP), an international non-profit organization funded by the alcohol industry [now called the International Alliance for Responsible Drinking (IARD)], has promoted self-regulation as an effective means of controlling alcohol marketing practices [1]. Recent reviews have indicated that self-regulated alcohol marketing codes are violated routinely, alcohol advertisements regularly contain content appealing to vulnerable populations, and youth populations are exposed to disproportionately large amounts of alcohol advertising [2,3]. Moreover, the World Health Organization (WHO) has concluded that industry self-regulation may result in loss of governmental policy control [4].

In contrast to ICAP's policy agenda, some countries have implemented and defended statutory alcohol

marketing regulations successfully. Austria, Belgium, Finland, France, Germany and Ireland have banned spirits advertising on television [5]. France's Loi Évin restricts alcohol marketers to using only the name of the alcohol manufacturer, the brand name of the product and related product characteristics, and prohibits television advertisements for products having an alcohol content of greater than 2% [6]. The Advertising Act of Ukraine stipulates that alcohol advertisements appearing on television or radio can only be broadcast from 11 p.m.–6 a.m. [7]. Thailand's Alcoholic Beverage Control Act states that alcohol advertisements may not directly or indirectly promote consumption, imply that drinking alcohol is beneficial or show the product or its packaging [8]. Finland, as of 2015, has banned all Finnish alcohol producers from advertising on social media [9].

Although ICAP and other industry groups promote self-regulation, they do not state the purpose and basic

assumptions underlying the creation of their codes. This paper uses legal documents and precedents to examine these questions as well as highlights flaws in current self-regulated alcohol marketing codes, discusses potential limits on alcohol marketing regulations and identifies previous litigation against alcohol marketing practices.

Self-regulated alcohol marketing codes: assumptions and purpose

As currently constructed, self-regulated alcohol marketing codes contain a number of implicit and explicit assumptions that may reflect their purpose. For example, the adoption of marketing codes implies that restrictions on alcohol marketing are required. The inclusion of exposure restrictions for youth implies that individuals below the legal purchase age (LPA) should not be exposed to alcohol marketing, and ICAP's Guiding Principles, which serve as a 'model' self-regulatory alcohol marketing code, list pregnant women explicitly as a vulnerable population requiring protection [1]. We explored these assumptions and the purpose of the codes by investigating the genesis of current self-regulated alcohol marketing codes in the United States, the United Kingdom and Brazil.

United States

Discussions regarding the regulation of alcohol advertising in the United States began in the 1940s [10], and opponents of government regulation have used the First Amendment of the US Constitution successfully to assert commercial free speech rights on the basis that consumers need truthful information to make reasonable choices about advertised products (e.g. *44 Liquormart, Inc. v. Rhode Island*) [11]. The Twenty-First Amendment (granting states jurisdiction over alcohol beverage commerce) and the Fifth Amendment (prohibition on discrimination) have also been utilized as constitutional defenses.

In 1985, before the US House of Representatives Subcommittee on Telecommunications, Consumer Protection and Finance, Stephen K. Lambright, the then Vice-President of Anheuser-Busch stated: 'Rather than imposing either counter-advertising or a total ban, we would request that the Congress accept our commitment to vigorous industry self-regulation' [12]. During the hearing, Lambright, William O'Shea, President of the Brewer's Association of America, and John De Luca, President of the Wine Association, stated repeatedly that advertising has no effect on youth while also describing how their self-regulated alcohol marketing codes protect children. When legislative hearings were unable to establish a definitive causal link between advertising and youth alcohol consumption, self-regulation was advanced as the primary alternative [13], resulting in the beer, wine and liquor

sectors each having unique, self-imposed advertising codes of conduct.

In 1996, following a liquor advertisement aired by Seagram, the Distilled Spirits Council of the United States (DISCUS), the spirits industry's national trade association, ended a decades-long voluntary ban on the advertising of liquor products on television and radio, which had been in effect since 1936 and 1948 for radio and television, respectively. The action prompted fierce criticism. Representative Joseph Kennedy II introduced several bills attempting to restrict alcohol advertising (e.g. the Just Say No Act and the Comprehensive Alcohol Abuse Prevention Act) [14]; President Bill Clinton called on the Federal Communications Commission (FCC) to begin an investigation into liquor advertisements, and the FCC Chairman suggested that voluntary restraint was ineffective and a ban on liquor advertisements was needed [15]. He urged all television and radio stations to 'just say no' to liquor advertising. The FCC inquiry was expanded to include beer advertisements after the Stroh Brewery Co. aired an advertisement during a MTV show targeted at teenage girls [16].

To reassure critics concerned about alcohol abuse and under-age drinking, DISCUS revised its voluntary Code of Good Practice in 1996. In place of the television and radio advertising ban, the revised code listed 26 provisions aimed at promoting responsible advertising, including restrictions on the use of cartoon characters popular among children, although producers could create their own characters [17]. The Beer Institute implemented a voluntary marketing code applicable to beer advertisements a year later [16].

United Kingdom

In the United Kingdom, the industry-sponsored 'social aspect' organization the Portman Group introduced its Code of Practice on the Naming, Packaging and Promotion of Alcohol Drinks (referred to herein as the UK Code) in April 1996 in response to public and government concern over alcopops, sweet-flavored alcoholic drinks often packaged in ways appealing to youth [18]. A year later, a survey of 700 children in seven schools showed that 59% drank alcopops, prompting the government to order an 'urgent' investigation [19]. The ministerial group investigating alcopops issued a statement demanding 'swift action' by the industry and warned that, if not satisfied, the group was 'prepared to go further'. 'It is essential that we protect our children from being ensnared into the downward spiral of alcohol abuse and crime', the statement added [20]. At the same time, a second edition of the UK Code was released that included firmer restrictions on advertisements, including a ban on references to illegal drugs, linking alcohol with sexual prowess, using actors under

the age of 25 years and using artificially bright colors or child-like lettering. It also established an independent review panel [21]. The government steering group created to investigate the problem did not recommend an outright ban, in part because of the revamped UK Code. The code has since been revised five times, with the latest edition published in May 2013 [22].

Brazil

Although self-regulation of alcohol marketing predominates, the Brazilian mechanism differs from that used in the United States and United Kingdom. Instead of being created by the alcohol industry, self-regulation is defined, implemented and managed by the advertising industry's National Council for Self-Regulation in Advertising [Conselho Nacional de Autorregulamentação Publicitária (CONAR)] and their Code of Self-Regulation in Advertising (CONAR code), which all industries pledge to follow [23]. In the 1970s, the federal government attempted to promulgate a law that would have required each advertisement to receive an 'In Agreement' stamp before dissemination. The CONAR code emerged as the industry's response. The idea came from the UK model and gained momentum at the hands of the biggest names in Brazilian advertising. By 1978, during the Third Brazilian Advertising Congress, CONAR obtained federal recognition of the CONAR code, convincing regulators to shelve the censorship project and trust that Brazil's advertising was mature enough to self-regulate. Others have concluded that self-regulation in Brazil has ensured commercial free speech rights and defended the interests of the advertising industry [24,25].

In 1985, a military dictatorship was replaced by a democracy. The current federal constitution, enacted in 1988, introduced a series of individual and collective rights, such as freedom of expression, as a means to limit possible state abuse. The Constitution also determined that alcohol advertisements should be regulated by law [26], which occurred in 1996 [27]. However, the Brazilian Congress yielded to strong alcohol industry lobbying and defined alcoholic beverages for advertising purposes as those with an alcohol concentration greater than 13 degrees of alcohol using the Gay-Lussac method of measurement, thus effectively eliminating beer and some wines from regulation. Since then, more than two dozen bills have been submitted by various parliamentarians attempting to correct the definition of alcoholic beverages for advertising purposes [28]. In our opinion, all have been unsuccessful due to alcohol industry lobbying efforts, which includes financing parliamentary political campaigns and donating millions of dollars to politicians each election cycle. More recently, the Attorney General of the Republic filed a lawsuit in the Brazilian Supreme Court seeking to force the National Congress to correct

the concept of alcoholic beverages for advertising purposes so that it includes those with an alcohol concentration above 0.5 degrees Gay-Lussac; however, the lawsuit was ultimately dismissed by the Brazilian Supreme Court [29].

Language, loopholes and gaps

The language used in self-regulated alcohol marketing codes has been criticized for being vague and open to multiple interpretations, containing loopholes that undermine the effectiveness of guidelines at protecting vulnerable populations, having lax exposure guidelines and for the reference point used when determining code compliance [30]. Here, we use ICAP's Guiding Principles [1], the US Beer Institute's Advertising and Marketing Code [31], Diageo's Marketing Code [32] and correspondence received from the US Beer Institute during a complaint process to highlight what we believe are deficiencies.

Vagueness

In ICAP's Guiding Principles, Section 5: 'The effects of alcohol' contains guidelines that focus on prohibiting the portrayal of alcohol as enhancing abilities, whether social, sexual or academic [1]. Guideline 5.3 states, 'Alcohol beverage marketing communications should not... suggest that alcohol beverages can enhance physical, sporting, or mental ability'. There are at least two ways to interpret this guideline. An interpretation favoring the alcohol industry would be that a direct, explicit, causal link between the product and enhanced ability needs to be shown in order for this guideline to be violated. Conversely, an interpretation favoring public health authorities would be that any association between the product and any type of ability enhancement should be considered a violation because a viewer may perceive the association as having a causal impact on an individual's abilities and behavior.

Loopholes

In our opinion, the US Beer Institute's Advertising and Marketing Code contains a series of loopholes that undermine the impact and reach of the code. First, 'These guidelines do not apply to educational materials, [or] messages of a non-brand specific nature...' [31]. This implies that corporate social responsibility messages are not covered by this code, allowing companies to promote their products indirectly without restriction. The code also states that the 'guidelines do not apply to... materials or messages designed specifically to address issues of alcohol awareness, abuse, drunk driving, underage drinking, or over-consumption', without specifying the extent or type of anti-drinking statements necessary to meet this requirement [31]. The statement is particularly important due to the proliferation of 'responsible drinking' messages that appear at the end of television or radio advertisements,

and within the fine print of print advertisements. In the extreme, the industry may consider these messages sufficient to identify the entire advertisement as addressing excessive alcohol consumption and the entirety of the Beer Institute's code may then no longer apply. Furthermore, Diageo's Marketing Code appears to contain a significant loophole stating explicitly that their advertisements may be appealing to youth [32]. They simply prohibit themselves from creating advertisements that appeal primarily to this demographic.

Exposure guidelines

ICAP's Guiding Principles specify that alcohol advertisements should be placed in media only where at least 70% of the audience consists of legal drinkers [1]. This value matches the proportion of individuals above the legal drinking age in the United States according to the 2000 census [33]. The US Beer Institute code uses a standard of 71.6%, which uses the same value from the 2010 census [31,34]. These cut-offs are used under the premise that any programming that has an audience with a higher proportion of adults is unlikely to be attractive to youth, but there are several issues that these cut-off values do not consider.

First, the values are not adjusted for those minors who are highly unlikely to watch adult-oriented programming, specifically the under 5-year-old population, which accounted for 6.8% of the total US population in 2010 [34]. Moreover, advertisement buying guidelines for the industry may only require audience composition data for the 12+ or 18+ population when purchasing advertising space, excluding 0–11-year-olds or 0–17-year olds from exposure calculations [35]. Secondly, the lack of a maximum number of underage viewers allowed in an audience means that high levels of exposure can still occur even though the audience is well within the industry's threshold [36]. Thirdly, cut-off values based on the US population are not applicable to countries where the LPA is lower or in countries with different population demographics.

Standard of review

According to the US Beer Institute code, alcohol producers should use the perspective of a reasonable adult consumer when making marketing and advertising decisions [31], but this standard may be inappropriate. The reasonable adult standard assumes that all advertisements are perceived by a typical member of the population and disregards the exposure and perceptions of potentially vulnerable subgroups. Youth, for example, are listed explicitly as a vulnerable population in many codes, yet are expected to perceive advertisements as reasonable adults. It is plausible that other vulnerable populations, such as pregnant women, alcoholics or ethnic minorities, would also

perceive alcohol advertisements differently because the perceptions of risk may not be communicated using culturally appropriate methods for that demographic [37]. The guidelines also fail to define who a 'typical' person is, which may or may not be someone with a history of chronic disease, mental illness or substance abuse.

Statutory alcohol marketing regulations

If statutory regulations on alcohol marketing are enacted, legal challenges from the alcohol industry are likely to follow. In the United States, commercial free speech has been afforded substantial First Amendment protections since 1975 [38], and regulatory agencies have preferred to allow the market-place to self-regulate commercial speech since the 1980s [39]. However, commercial free speech is not absolute, although any regulation will be subject to the four-part 'Central Hudson' test (Table 1) [40]. In these cases, the government carries the burden of proof, and courts are instructed to use an intermediate level of scrutiny, although conservative justices have advocated using strict scrutiny when truthful information is involved [41,42]. US experiences are not always transferable to other countries, however. Indeed, severe restrictions on alcohol marketing have been implemented and upheld in other countries. In France, the *Loi Évin* stipulates a partial ban on alcohol advertisements with very few exceptions [7], and the effects of the law extend beyond brand-specific advertising [43]. *Loi Évin* inevitably restricts sports teams and stadium operators from contracting with alcohol companies and imposes additional costs on broadcast transmitters who must remove alcohol references before sports broadcasts are shown in France. These consequences are felt by entities within and outside of France. Consequently, the law has been challenged multiple times.

In *Bacardi-Martini SAS, Cellier des Dauphins v. Newcastle United Football Company Ltd*, Bacardi challenged the *Loi Évin* in the United Kingdom on grounds of interference with sponsorship contracts and that such interference was contrary to provisions within the European Community (EC) treaty [44]. EC Courts did not provide a definitive ruling on the matter, stating that the UK courts did not provide sufficient justification for how French legislation

Table 1 The four-part 'Central Hudson' test.

<i>Question</i>	
Part 1	Is the activity unlawful and is the speech false, deceptive or misleading?
Part 2	Is the government interest substantial?
Part 3	Does the regulation of commercial speech directly advance the state interest?
Part 4	Is the regulation no more extensive than necessary?

can influence their decisions. In *Commission of the European Communities v. French Republic*, the court determined that the Loi Évin was in conflict with the freedom to provide services provision, which is a fundamental right, but that this right may be limited for the purposes of protecting public health [45]. Furthermore, the Court expressly ignored the burden of extra costs imposed on broadcast transmission companies, choosing only to focus on the issue of party contracts, and showed deference to national legislative priorities. This rationale for upholding the Loi Évin in EC Courts provides a precedent for the expansion of strict, statutory regulations on alcohol marketing practices in EU member states. However, the Courts' deference to national priorities can also provide an avenue for EU regulations to be overturned which, for example, occurred in Sweden [46].

Legal challenges against alcohol producers

In the United States, a handful of lawsuits against alcohol producers have been filed seeking monetary or injunctive relief. These suits have met with little success. In *Guglielmi v. Anheuser-Busch*, Guglielmi sought a permanent injunction against Anheuser-Busch to modify their advertising practices [47]. The lawsuit was dismissed by the courts with prejudice. In *Kreft v. Adolph Coors*, a complaint alleging damages due to alcohol advertisements encouraging underage children to consume alcoholic beverages was dismissed because no injury to the plaintiffs was shown; the court awarded the defendants attorney fees [48]. Complaints against Zima, Anheuser-Busch and Coors have also been dismissed for either lack of standing or failure to show injury [49–52]. *Guglielmi* may have provided a basis for future public health litigation, however. Guglielmi stated that the lawsuit was in the 'public interest' yet no public agencies joined as plaintiffs, implying that state or federal agencies are required for litigation to proceed [47].

Shifting away from self-regulation

The presumption of self-regulated alcohol marketing codes is that subpopulations exist that are considered particularly vulnerable to alcohol marketing practices, and these populations should not be exposed to or be targeted by alcohol marketing. However, because youth exposure to alcohol marketing in countries where self-regulation predominates continues to be high and alcohol producers appear to violate the content guidelines of self-regulated alcohol marketing codes routinely [2], a plausible alternative explanation for the continued promotion of self-regulation by the alcohol industry is to delay statutory regulation, as suggested by the experiences in the United States, United Kingdom and Brazil. Indeed, we were unable to find documentation that alcohol producers stated explicitly that a

marketing code was being implemented to protect youth or other vulnerable populations.

Interestingly, self-regulation has worked for some industries. The forestry industry established the Forest Stewardship Council to promote responsible management of forests when governments failed to do so, and the fishing industry established the Marine Stewardship Council to protect global fish stocks [53]. These self-regulatory measures were adopted successfully because the industries determined that there was economic benefit from following voluntary guidelines. In contrast, self-regulated marketing codes implemented in the tobacco and breast milk substitute industries failed [53,54], leading ultimately to strict statutory legislation at the national and international levels [55,56]. Here, effective and enforced voluntary restrictions may have been seen as economically detrimental.

Repeated, blatant violations of self-regulated alcohol marketing codes can provide government regulators with an opportunity to use current laws to restrict marketing practices and provided legislators with a justification for passage of new laws, and 'legal scholars recognize that the failure of ethical norms to deter behavior that is widely regarded as unacceptable is a classic trigger for the imposition of legal norms' [57]. More bluntly, the alcohol industry invites direct legal regulation by ignoring the need for better adherence to the industry's own stated controls.

A number of countries have already imposed statutory restrictions on marketing activities, and in the European Union these restrictions have withstood legal challenges from the alcohol industry. However, any new restrictions will probably be met with additional legal challenges. Although tough marketing restrictions among EU member states may not violate EU treaties, legislation must still survive country-specific constitutional review. In the United States, the environment for passage of alcohol marketing restrictions is difficult. Alcohol regulations must be defined narrowly and tailored to address specific issues among specific populations. Moreover, any attempts at using the litigation process to restrict alcohol marketing activities will require public agencies at the local, state or federal levels to be plaintiffs in order for any such lawsuit to proceed.

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None.

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Alcohol marketing in the Americas and Spain during the 2014 FIFA World Cup Tournament

Jonathan K. Noel¹, Thomas F. Babor¹, Katherine Robaina¹, Melissa Feulner¹, Alan Vendrame² & Maristela Monteiro³

Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington, CT, USA,¹ Department of Psychiatry, Federal University of São Paulo, São Paulo, Brazil² and Alcohol and Substance Abuse, Pan American Health Organization, Washington, DC, USA³

ABSTRACT

Background and aims To identify the nature of visual alcohol references in alcohol advertisements during televised broadcasts of the 2014 FIFA World Cup Tournament matches and to evaluate cross-national differences according to alcohol marketing policy restrictiveness. **Design** Content analysis using the Delphi method and identification of in-game sponsorships. **Setting** Television broadcasts of the 2014 FIFA World Cup in Argentina, Brazil, Canada, Finland, France, Mexico, Spain and the United States. **Cases** Eighty-seven alcohol advertisements; 20 matches. **Measurements** Quantitative rating scales, combined with the Delphi rating technique, were used to determine compliance of the alcohol advertisements with the International Alliance for Responsible Drinking's (IARD) Guiding Principles. Recordings of five matches from four countries were also used to identify the number of in- and out-of-game alcohol brand appearances. **Findings** A total of 86.2% of all unique alcohol advertisements contained at least one violation of IARD's Guiding Principles, with violation rates ranging from 72.7% (Mexico) to 100% (Brazil). Countries with the least restrictive marketing policies had a higher prevalence of violations in guidelines designed to protect minors. There were 2.76 in-game alcohol brand appearances and 0.83 out-of-game alcohol brand appearances per minute. Brand appearances did not differ across countries or according to a country's marketing policy restrictiveness. **Conclusions** Self-regulation and statutory policies were ineffective at limiting alcohol advertising during the 2014 FIFA World Cup Tournament television broadcasts. Most advertisements contained content that violated the self-regulation codes, and there were high levels of within-broadcast brand appearances.

Keywords Advertising, alcohol, content, exposure, marketing, self-regulation.

Correspondence to: Thomas F. Babor PhD, MPH, Department of Community Medicine and Health Care, UConn School of Medicine, 263 Farmington Avenue, MC 6325, Farmington, CT, USA, 06030-6325. E-mail: babor@uchc.edu

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INTRODUCTION

Alcohol advertising has been identified as a contributory cause to youth alcohol initiation and increased alcohol consumption [1,2]. In response, United Nations (UN) Member States have implemented national-level marketing policies ranging from statutory bans to industry self-regulation [3]. In contrast to government controls, self-regulation is a system whereby the alcohol industry assumes a dominant role in the development, implementation and enforcement of the policy. These voluntary codes of practice are created typically by alcohol producers, trade associations, national advertising organizations and other bodies sponsored by the alcohol industry. These 'codes' contain similar themes and have been

summarized in the Alliance for Responsible Drinking's (IARD) *Guiding Principles: Self-Regulation of Marketing Communications for Beverage Alcohol* (Guiding Principles), an industry-sponsored initiative [4]. Additionally, some countries employ a coregulatory process in which government agencies provide oversight to industry self-regulation.

The Guiding Principles focus on alcohol advertisement content and exposure. The content guidelines contain five themes: responsible marketing communications, responsible alcohol consumption, health and safety, protection of minors and the effects of alcohol [4]. The exposure guidelines state that no alcohol advertisements should be broadcast or displayed where more than 30% of the audience is younger than the legal alcohol purchase age.

Increasingly, alcohol marketing self-regulation has been criticized for the inability to limit content that promotes hazardous drinking. In the United States, an evaluation of all unique beer advertisements broadcast during the 1999–2008 National Collegiate Athletic Association's basketball tournaments demonstrated that 35–74% of all beer advertisements contained one or more violations of the US Beer Institute's marketing code, depending on the code version and scoring algorithm used [5]. After industry modifications in 2006, code violations were reduced significantly because previously unacceptable content, such as portrayals of illegal activity, was now permitted [5–8]. In Brazil, five advertisements that were rated by teenagers to be highly appealing all contained one or more violations of the local code [9], and similar results have been found for Australian television and magazine advertisements [10–13]. Among all published studies, guidelines prohibiting content that targets children, associating alcohol with success and promoting excessive alcohol consumption are consistently violated [14].

There has also been a proliferation of alcohol branding, particularly during sports programming. In the United States from 2000 to 2002, there were 7.7 minutes of alcohol advertisements per sporting event and 2.6 minutes of advertisements per college sporting event [15]. In the United Kingdom there were 1579 unique brand appearances in 420 hours of television reviewed, and nearly 60% occurred during sports programming [16]. During the EURO2012 football tournament, there were 1.24 alcohol references per minute of broadcast [17].

Previously, studies of the alcohol industry's voluntary codes of practice have been conducted in only a few developed countries. Moreover, no study has investigated intercountry differences in alcohol advertisement content or alcohol brand appearances within programs. The present study evaluates alcohol advertisements and other marketing activities recorded in eight countries during the 2014 FIFA World Cup Tournament. The aim was to evaluate compliance of advertisement content with an international marketing code proposed by the alcohol industry and to estimate the number of alcohol brand appearances within matches. We hypothesized that countries with greater marketing restrictions would have fewer code violations and less intragame alcohol branding.

METHODS

Sample

The FIFA World Cup Tournament was selected because it was expected to be one of the largest sporting events in history. The tournament was televised in 214 countries,

and 3.2 billion people were estimated to have watched at least 1 minute of a tournament match [18]. In addition, Budweiser was an official 2014 World Cup sponsor [19].

Researchers in the following eight countries were recruited to record country-specific broadcasts of at least the last 16 matches of the 2014 FIFA World Cup Tournament. Countries were selected to represent a variety of alcohol marketing controls in the Region of the Americas and other relevant regions (e.g. Europe) of interest to the funder and based on the availability of resources and technological capabilities to conduct the study.

- Argentina: alcohol marketing in Argentina is self-regulated and must conform to a Code of Ethics drafted by the Chamber of Industries of Foods Products and enforced by the Council for Self-Regulating Advertising of Argentina [20].
- Brazil: the National Council of Advertising Self-Policy (Conselho Nacional de Auto Regulação Publicitária) enforces a self-regulated marketing code for beer products; beverages of higher alcohol content (i.e. distilled spirits, wine) are restricted by federal legislation [21].
- Canada: alcohol marketing is regulated by the Code for Broadcast Advertising of Alcoholic Beverages, which was promulgated by the Canadian Radio–Television and Telecommunications Commission, and is supported by a voluntary pre-clearance mechanism maintained by the alcohol producers [22].
- Finland: television alcohol advertisements are banned between 7 a.m. and 9 p.m. Television advertisements for products with greater than 1.2% alcohol by volume are also banned. The content of allowable advertising is strictly controlled [23].
- France: the Loi Evin prohibits television advertisements for products with greater than 2% alcohol. Advertising for products with less than 2% alcohol is allowed but restricted to the name of the producer, the product brand name and product characteristics [24].
- Mexico: alcohol marketing is limited by the General Law of Health and the Federal Radio and Television Law, which restrict when alcohol advertisements can be broadcast and the type of content they can contain [25].
- Spain: alcohol marketing is regulated by a federal law that prohibits advertisements from targeting minors, encouraging excessive consumption, or associating alcohol consumption with success, positive health effects or resolution of conflicts [26].
- United States: beer, wine and distilled spirits marketing are each governed by unique self-regulatory codes that contain guidelines on the content and placement of advertisements, although the codes have significant overlap [27–29].

Policy restrictiveness

Marketing policy restrictiveness was assessed using 2012 data from the World Health Organization's (WHO) Global Health Observatory database. Information on advertising restrictions for beer, wine and distilled spirits in 10 different media was abstracted and scored based on the criteria developed by Esser & Jernigan [30]. Self-regulation/voluntary restrictions or no restrictions, partial restrictions and total bans were coded as 0, 1 and 2, respectively. Countries were then categorized into one of five groups based on the total number of accumulated points. Countries were classified as least restrictive (0 points), slightly restrictive (1–15 points), restrictive (16–30 points), very restrictive (31–45 points) or most restrictive (46–60 points).

Advertisement recording and processing

Collaborating investigators in each country were instructed to record each match, the half-time show and at least 30 minutes of the pre- and post-game shows, respectively. Once complete, recordings were transferred to the University of Connecticut School of Medicine for processing via a cloud storage service. Full match recordings were available from all countries except Argentina, which only provided alcohol advertisements. All unique alcohol advertisements were identified from each country, abstracted into individual video files and stored on a cloud storage network.

Advertisement rating procedure

Because of between-country variation in alcohol marketing policies and national marketing codes, IARD's Guiding Principles were chosen as the standard code to compare all advertisements. The Guiding Principles are intended to apply to all alcoholic beverages and to all media. In addition, they have been endorsed by all major transnational alcohol producers [4].

Three language-specific panels (English, Spanish and Portuguese) were created to evaluate the advertisements. The English panel ($n = 14$) comprised eight American raters and six Canadian raters who viewed advertisements from Canada and the United States (English-language advertisements only). The Spanish panel ($n = 14$) comprised two American raters, four Argentinian raters, five Mexican raters, two Spanish raters and one Uruguayan rater who viewed advertisements from Argentina, Mexico, Spain and the United States (Spanish-language advertisements only). The Portuguese panel ($n = 12$) comprised 12 Brazilian raters who viewed advertisements from Brazil. In this context, the word 'expert' refers to individuals who have professional training or other experience with substance use disorders, alcohol marketing or public health, or who

have expertise in protecting vulnerable populations. Experts rated each advertisement using a web-based rating questionnaire that was used in previous research [6]. The questionnaire was designed originally to evaluate the content guidelines of the US Beer Institute Code [8] and was subsequently modified slightly to cover the content guidelines in the Guiding Principles.

Three types of questions and response formats were used in the questionnaire. Five-point Likert scales measured the viewers' agreement or disagreement with statements of fact and opinion (e.g. 'This advertisement portrays abstinence or moderate consumption in a negative way'). These items were rated using the following response categories: strongly disagree, disagree, neither disagree nor agree, agree and strongly agree. A second type of measurement utilized age perception items, designed to measure the viewer's perception of the actor's age (e.g. 'How old do you think this actor is?'). A third measurement was designed to assess the viewer's perception of the amount of drinking taking place (e.g. 'How many drinks do you estimate this person is likely to consume in the situation shown in the advertisement?').

Advertisements were rated using a modified Delphi technique, a procedure designed to build group consensus around policy-relevant decisions that have no clear objective referent [31,32]. This procedure has been used previously to rate alcohol advertisements [5,8]. It utilized two successive ratings. During round 1, all advertisements were rated independently by each rater. During round 2, all advertisements were rated again, but each rater was given their panel-specific mean rating from round 1, the frequency of each response for Likert scale items, the range of responses for continuous items and comments (if any) provided by other panel members. Participants began the second rating session approximately 1 month after round 1 was completed. Participants were compensated with a \$100 gift card for completing both rounds of ratings. Good-to-excellent item-level inter-rater reliability was observed for the English [intra-class correlation coefficients (ICCs) = 0.52–0.98], Spanish (ICC = 0.58–0.97) and Portuguese (ICCs = 0.45–0.92) panels. The brand, alcohol producer and type of beverage (beer, wine, distilled spirits or hard cider) were recorded by study staff for each included advertisement.

Code violations were calculated using a previously defined scoring algorithm [5]. Briefly, individual ratings were first dichotomized to indicate the status of an item-specific violation. Then, a sub-guideline violation was indicated if any item-specific violations that pertain to a sub-guideline were recorded. A guideline violation existed if one or more sub-guidelines that pertain to a guideline existed. An advertisement was coded as containing a violation when 50% or more of the raters indicated that a guideline violation existed.

Alcohol brand appearances

The frequency of alcohol brand logos was assessed in five matches broadcast in four countries (i.e. Brazil, Canada, Mexico and the United States, $n = 20$). Countries and matches were selected based on the quality of the match recording. Brand logos appearing during the recordings were assessed using methodology applied previously to European Football Championship matches, which included identifying each unique brand logo occurrence, identifying where the logo occurred during the broadcast (i.e. pitch-side; interview boards; within the pre-, half- or post- game show; on-screen scoreboard, fans or other) and when the brand logo appeared (i.e. pre-match, first half, half-time, second half, pre-extra time 1, extra time 1, time between extra time 1 and 2, extra time 2, pre-penalty kicks, penalty kicks or post-match) [17,33]. This procedure was performed by two graduate students at the University of Connecticut School of Medicine. There was excellent inter-rater reliability ($ICC = 0.953$). The mean number of brand appearances detected by the raters was used for the analysis.

Statistical analysis

Differences in overall guideline and sub-guideline violation rates by policy restrictiveness category, alcohol producer and beverage type were assessed using the Freeman–Halton extension of Fisher's exact test. χ^2 tests could not be performed due to low expected cell counts in many cells. The comparison between alcohol producers was performed between AB InBev, SABMiller, Heineken and all other producers. AB InBev, SABMiller and Heineken each created more than 15% of all unique advertisements broadcast. No other alcohol producer created more than 5% of unique advertisements broadcast. A comparison of beverage types was performed among beer, distilled spirits and all others. Wine and hard cider were combined due to low numbers of unique advertisements.

Differences in overall, in-game and out-of-game alcohol brand appearances per minute were assessed using the independent-samples Kruskal–Wallis test. Differences were assessed by country, alcohol policy restrictiveness and match. Brand appearances based on tournament round were not assessed due to an insufficient number of matches assessed. Statistical analysis was performed using IBM SPSS Statistics for Windows, version 21.0 (Armonk, NY, USA). Statistical significance was set at 0.05 a priori.

RESULTS

Overall, 87 unique advertisements were obtained. Eighty-four of these were for 39 unique alcohol brands produced by 20 alcohol companies (Supporting information,

Table S1). Three advertisements for alcohol beverage stores were also included in the sample. No advertisements were identified from Finland or France, and these countries were excluded from further analysis. Brands with the greatest number of advertisements in the sample were Tecate (eight advertisements), Budweiser (seven) and Corona (six). AB InBev (27), SABMiller (13) and Heineken (13) produced the most unique advertisements. The greatest number of advertisements were for beer (62 advertisements) and distilled spirits (13).

Overall, 86.2% of unique advertisements were found to contain at least one code violation (Table 1) and, on average, each advertisement contained 2.4 guideline violations and 4.7 sub-guideline violations. Guiding Principle 5 (the effects of alcohol, 85.1%) and three (health and safety, 79.3%) were each violated by the majority of unique advertisements broadcast. A majority of advertisements also presented alcohol as necessary for social success (83.9%), as a stimulant, sedative or tranquilizer (73.6%), as a means of removing social or sexual inhibitions (67.8%) or as a method to enhance physical, sporting or mental ability (64.4%). Moreover, 39.1% of advertisements portrayed excessive alcohol consumption, and 17.2% of advertisements used actors that appeared to be under the legal alcohol purchase age.

For policy restrictiveness the United States, consisting of both English and Spanish language advertisements, was categorized as least restrictive (0 points). Canada (12 points) was categorized as slightly restrictive and Argentina (24 points), Brazil (30 points), Mexico (24 points) and Spain (26 points) were categorized as restrictive. Finland (39 points) and France (36 points) were categorized as very restrictive. No differences were detected in the overall violation rate based on the restrictiveness of alcohol marketing policies (Table 2). However, advertisements from countries with slightly restrictive or restrictive marketing policies violated Guideline 1 (responsible marketing communications) more often than advertisements from countries with the least restrictive marketing policies ($P < 0.001$). Conversely, advertisements from countries with the least restrictive marketing policies violated Guideline 4 (minors) more often than advertisements from countries with slightly restrictive or restrictive marketing policies ($P = 0.033$).

There was no significant difference in the overall violation rate between alcohol producers ($P = 0.090$), although significant differences were detected in four of the five Guiding Principles guidelines (Table 3). It appears that Guideline 1 was violated most often by advertisements for Heineken brands ($P = 0.027$) and Guideline 4 was violated most often by advertisements for AB InBev and SABMiller brands ($P = 0.007$). Despite statistically significant differences in the violation rates of Guidelines 3 ($P = 0.001$) and 5 ($P = 0.046$), the majority of advertisements from

Table 1 Overall and guideline-specific prevalence of code violations by country.^a

Guideline	Description	Argentina	Brazil	Canada	Mexico	Spain	United States ^b	Total
Overall		6 (85.7)	10 (100)	7 (87.5)	8 (72.7)	8 (88.9)	36 (85.7)	75 (86.2)
G 1	Responsible marketing communications	0 (0)	5 (50.0)	3 (37.5)	2 (18.2)	4 (44.4)	1 (2.4)	15 (17.2)
SG 1.1	be legal, decent, honest and truthful and conform to accepted principles of fair competition and good business practice	0 (0)	1 (10.0)	0 (0)	0 (0)	4 (44.4)	0 (0)	5 (5.7)
SG 1.2	be prepared with a due sense of social responsibility, not using themes, images, symbols, or portrayals likely to be considered offensive, derogatory or demeaning	0 (0)	3 (30.0)	0 (0)	1 (9.1)	0 (0)	0 (0)	4 (4.6)
SG 1.4	respect human dignity and integrity	0 (0)	3 (30.0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (3.4)
SG 1.5	avoid any association with violent, aggressive, hazardous, illegal or antisocial behavior	0 (0)	2 (20.0)	3 (37.5)	0 (0)	0 (0)	1 (2.4)	6 (6.9)
G 2	Responsible consumption	2 (28.6)	10 (100)	1 (12.5)	2 (18.2)	6 (66.7)	19 (45.2)	40 (46.0)
SG 2.1	portray only moderate and responsible consumption	2 (28.6)	10 (100)	1 (12.5)	1 (9.1)	5 (55.6)	15 (35.7)	34 (39.1)
SG 2.2	avoid condoning or trivializing excessive or irresponsible consumption or intoxication	0 (0)	7 (70.0)	0 (0)	1 (9.1)	3 (33.3)	5 (11.8)	16 (18.4)
SG 2.3	avoid portraying abstinence or moderate consumption in a negative way	0 (0)	3 (30.0)	0 (0)	0 (0)	0 (0)	1 (2.4)	4 (4.6)
G 3	Health and safety aspects in marketing communications	6 (85.7)	10 (100)	6 (75.0)	5 (45.5)	8 (88.9)	34 (81.0)	69 (79.3)
SG 3.1	suggest that alcohol beverages can prevent, treat or cure illness or resolve personal problems	4 (57.1)	9 (90.0)	3 (37.5)	2 (18.2)	6 (66.7)	12 (28.6)	36 (41.4)
SG 3.2	present alcohol beverages as a stimulant, sedative, or tranquilizer	6 (85.7)	10 (100)	6 (75.0)	5 (45.5)	8 (88.9)	29 (69.0)	64 (73.6)
SG 3.3	depict or be addressed to at-risk groups, e.g. pregnant women	3 (42.9)	6 (60.0)	2 (25.0)	3 (27.3)	6 (66.7)	11 (26.2)	31 (35.6)
SG 3.4	portray or encourage drinking prior to or during activities requiring sobriety or a high degree of skill or precision, such as controlling a motor vehicle or operating machinery	0 (0)	1 (10)	0 (0)	0 (0)	0 (0)	2 (4.8)	3 (3.4)
G 4	Minors	2 (28.6)	1 (10.0)	0 (0)	0 (0)	0 (0)	12 (28.6)	15 (17.2)
SG 4.1	avoid the use of themes, icons, music, games or characters that appeal primarily to minors	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
SG 4.2	avoid showing minors (or people likely to be perceived as minors) drinking alcohol beverages	2 (28.6)	1 (10.0)	0 (0)	0 (0)	0 (0)	12 (28.6)	15 (17.2)
G 5	The effects of alcohol	6 (85.7)	10 (100)	7 (87.5)	7 (63.6)	8 (88.9)	36 (85.7)	74 (85.1)
SG 5.2	present high alcohol strength as a principal basis of appeal	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
SG 5.3	suggest that alcohol beverages can enhance physical, sporting or mental ability	4 (57.1)	9 (90.0)	6 (75.0)	3 (27.3)	6 (66.7)	28 (66.7)	56 (64.4)
SG 5.4	present alcohol beverages as necessary for social success or acceptance	6 (85.7)	10 (100)	7 (87.5)	6 (54.5)	8 (88.9)	36 (85.7)	73 (83.9)
SG 5.5	present alcohol beverages as a means of removing social or sexual inhibitions, achieving sexual success or making an individual more sexually attractive	4 (57.1)	9 (90.0)	6 (75.0)	4 (36.4)	8 (88.9)	28 (66.7)	59 (67.8)

^aNumber of advertisements with a violation (%), Finland and France excluded because no advertisements were broadcast. ^bEnglish and Spanish language advertisements.

Table 2 Overall and guideline-specific prevalence of code violations by policy restrictiveness.^a

Guideline	Description	Least restrictive (n = 42) ^b	Slightly restrictive (n = 8) ^c	Restrictive (n = 37) ^d	P
Overall		36 (85.7)	7 (87.5)	32 (86.5)	1.00
G 1	Responsible marketing	1 (2.4)	3 (37.5)	11 (29.7)	< 0.001
G 2	Responsible consumption	19 (45.2)	1 (12.5)	20 (54.1)	0.107
G 3	Health and safety aspects	34 (81.0)	6 (75.0)	29 (78.4)	0.862
G 4	Minors	12 (28.6)	0 (0)	3 (8.1)	0.033
G 5	The effects of alcohol	36 (85.7)	7 (87.5)	31 (83.8)	1.00

^aNumber of advertisements with a violation (%), very restrictive excluded because no advertisements were broadcast. ^bUS (English and Spanish language advertisements); ^cCanada; ^dArgentina, Brazil, Mexico and Spain.

Table 3 Overall and guideline-specific prevalence of potential code violations by alcohol producer.^a

Guideline	Description	A-B InBev (n = 27)	SABMiller (n = 13)	Heineken (n = 13)	All others (n = 31)	P
Overall		27 (100)	11 (84.6)	11 (84.6)	26 (83.9)	0.090
G 1	Responsible marketing	2 (7.4)	1 (7.7)	6 (46.2)	6 (19.4)	0.027
G 2	Responsible consumption	17 (63.0)	5 (38.5)	4 (30.8)	14 (45.2)	0.213
G 3	Health and safety aspects	27 (100)	10 (76.9)	7 (53.8)	25 (80.6)	0.001
G 4	Minors	9 (33.3)	4 (30.8)	0 (0)	2 (6.5)	0.007
G 5	The effects of alcohol	27 (100)	11 (84.6)	10 (76.9)	26 (83.9)	0.046

^aNumber of advertisements it appears contained a violation (%).

all producers seem to have violated these guidelines (53.8–100% for Guideline 3; 76.9–100% for Guideline 5).

There was no significant difference in the overall violation rate based on beverage type ($P = 0.142$), although some significant differences were found at the guideline level (Table 4). Advertisements for beer brands violated Guideline 2 ($P = 0.041$) more often than advertisements for distilled spirits or other product types. More than 75% of the advertisements for each product type violated Guidelines 3 and 5.

Overall, there were 1.90 brand appearances per minute of broadcast (Table 5). There were 2.76 in-game brand appearances per minute overall, with broadcasts ranging from 2.58 (Brazil) to 2.93 (Canada) appearances per minute. There were 0.83 out-of-game brand appearances overall, with broadcasts ranging from 0.57 (United States) to 1.08 (Canada) brand appearances per minute. The

majority of brand appearances (88%) came from pitch-side, with fans (7%) a distant second. Significant differences between countries were detected in the number of brand appearances in the following areas: overall on-screen ($P = 0.010$), in-game on-screen ($P < 0.001$), out-of-game on-screen ($P = 0.022$), out-of-game pitch-side ($P = 0.046$) and interview boards ($P = 0.009$).

There were no significant differences in overall alcohol brand appearances when classifying countries by alcohol marketing policy restrictiveness ($P = 0.632$; Supporting information, Table S2). Countries with slightly restrictive policies had more on-screen brand appearances per minute compared to other countries ($P = 0.016$) and countries with restrictive policies had the most brand appearances per minute attributable to interview boards ($P = 0.004$).

There were several significant differences in brand appearances based on match (Supporting information,

Table 4 Overall and guideline-specific prevalence of code violations by beverage type.^a

Guideline	Description	Beer (n = 62)	Distilled spirits (n = 13)	All others (n = 9)	P
Overall		57 (91.9)	10 (76.9)	8 (88.9)	0.142
G 1	Responsible marketing	14 (22.6)	1 (7.7)	0 (0)	0.219
G 2	Responsible consumption	34 (54.8)	5 (38.5)	1 (11.1)	0.041
G 3	Health and safety aspects	51 (82.3)	10 (76.9)	8 (88.9)	0.801
G 4	Minors	13 (21.0)	0 (0)	2 (22.2)	0.169
G 5	The effects of alcohol	56 (90.3)	10 (76.9)	8 (88.9)	0.329

^aNumber of advertisements with a violation (%).

Table 5 Overall, in-game and out-of-game alcohol brand appearances by country.^a

Location	Total	Brazil	Canada	Mexico	United States	P-value
Overall						
Total	1.90 (0.54)	1.70 (0.41)	2.14 (0.77)	1.92 (0.51)	1.86 (0.49)	0.765
Pitch-side	1.68 (0.53)	1.40 (0.44)	1.96 (0.70)	1.65 (0.49)	1.70 (0.46)	0.336
Fans	0.13 (0.07)	0.17 (0.07)	0.12 (0.07)	0.14 (0.08)	0.10 (0.01)	0.374
On-screen	0.02 (0.01)	0.01 (0.01)	0.03 (0.01)	0.03 (0.02)	< 0.01 (< 0.01)	0.010
Other	0.02 (0.02)	0.02 (0.02)	0.01 (0.01)	0.01 (0.01)	0.03 (0.03)	0.225
In-game						
Total	2.76 (0.99)	2.58 (0.92)	2.93 (1.08)	2.81 (1.31)	2.74 (0.94)	0.904
Pitch-side	2.64 (0.92)	2.46 (0.87)	2.80 (1.00)	2.66 (1.19)	2.64 (0.90)	0.902
Fans	0.12 (0.08)	0.11 (0.05)	0.11 (0.09)	0.14 (0.12)	0.10 (0.05)	0.821
On-screen	< 0.01 (< 0.01)	0.00 (0.00)	0.02 (< 0.01)	0.00 (0.00)	0.00 (0.00)	< 0.001
Other	< 0.01 (< 0.01)	0.00 (0.00)	< 0.01 (< 0.01)	0.00 (0.00)	0.00 (0.00)	0.392
Out-of-game						
Total	0.83 (0.35)	0.81 (0.28)	0.88 (0.25)	1.08 (0.43)	0.57 (0.30)	0.162
Pitch-side	0.52 (0.26)	0.38 (0.17)	0.66 (0.21)	0.69 (0.28)	0.33 (0.17)	0.046
Fans	0.16 (0.09)	0.22 (0.12)	0.14 (0.06)	0.15 (0.07)	0.12 (0.09)	0.557
Interview boards ^c						
Total	0.09 (0.13)	0.15 (0.08)	0.02 (0.05)	0.16 (0.21)	0.01 (0.02)	0.009
On-screen	0.03 (0.03)	0.02 (0.02)	0.04 (0.01)	0.05 (0.03)	< 0.01 (< 0.01)	0.022
Other	0.05 (0.06)	0.04 (0.04)	0.02 (0.03)	0.02 (0.03)	0.11 (0.08)	0.129
Commercials ^{b,c}						
Total	3.65 (3.21)	5.70 (2.39)	3.20 (1.48)	4.20 (5.02)	1.50 (2.06)	0.155

^aAppearances per minute, mean (standard deviation); ^bnumber per broadcast; ^conly occurred out-of-game.

Table S3). The Argentina versus Belgium match had the greatest number of overall ($P = 0.014$), overall pitch-side ($P = 0.019$), total in-game ($P = 0.001$), in-game pitch-side ($P = 0.001$) and in-game fans ($P = 0.023$) brand appearances per minute. No significant differences were detected in out-of-game brand appearances (P s = 0.238–0.848).

DISCUSSION

Violations of IARD's Guiding Principles were highly prevalent in alcohol advertisements broadcast during the 2014 FIFA World Cup Tournament. These advertisements depicted alcohol as contributing to social success, sexual attractiveness and enhanced physical or mental ability, in addition to portraying excessive alcohol consumption. Although differences were noted among brands, there were no significant differences in the overall violation rate based on marketing policy restrictiveness among countries where alcohol advertising was broadcast. In contrast, two countries with highly restrictive legislative policies (Finland and France) were found to be free of all alcohol advertisements on commercial television stations used to broadcast the 2014 World Cup matches. Moreover, among the countries that provided recordings of sufficient quality, brand appearances per minute did not differ by policy restrictiveness. Taken together, these results indicate that self-regulatory structures, or partial statutory restrictions, on alcohol marketing content are ineffective in protecting young people and other vulnerable populations from exposure to potentially harmful alcohol marketing content.

In contrast, the qualitative findings from France and Finland suggest strict legislative policies against TV advertising can prevent exposure to this type of alcohol marketing.

The code violation rates reported here are higher than those reported in other research. Studies of television advertisements conducted in Australia and the United States have reported rates from 46.2 to 74% [5,11,13], although the results are consistent with the types of violations reported previously. There are several non-mutually exclusive explanations for the high code violation rate of the advertisements evaluated. High violation rates may indicate that the industry's promotion of marketing self-regulation is more of a lobbying or public perception tool than a concerted effort to restrict the content of alcohol advertising. For example, increases in Budweiser's market share in 2010 were attributed to its sponsorship of the 2010 FIFA World Cup Tournament [34], and Carlsberg estimated that each World Cup match results in 21 million additional pints of beer being sold in pubs across the United Kingdom [35]. Moreover, for several countries, the reported rates serve as a baseline violation rate that may not be comparable to previously published studies. Indeed, this is the first study to report code violation rates for every included country that broadcast alcohol advertising except the United States and the first to include alcohol advertising from non-high-income countries.

The consistent effort to portray alcohol as a psychoactive substance and associate alcohol with mental, physical, sexual and social success across country and policy

restrictiveness categories may be a result of significant consolidation within the alcohol industry, which now consists of a small number of competing companies that market their products aggressively [36]. These multi-national producers may be using similar strategies to position their products across countries and across cultures, while simultaneously disregarding local marketing policies.

In addition to the commercial messages, alcohol brand images were present consistently throughout the World Cup match broadcasts analyzed, primarily in the form of pitch-side images and fans' drinking from branded containers. Using data reported by Kantar Media, we estimate that approximately 325 million youth aged under 16 years and 850 million young adults 16–34 years watched at least 1 minute of the 2014 World Cup and were exposed to such images [37]. While a simple brand logo conforms to IARD's Guiding Principles, the contexts in which these logos are deliberately placed raise significant concerns. Pitch-side logos appearing during game play may be attempts to associate the advertised brands indirectly with physical or athletic success. This association may be in violation of the Guiding Principles' Sub-Guideline 5.3, which states that advertising 'should not suggest that alcohol can enhance physical or sporting ability' [4].

Displaying alcohol brand logos on branded drinking cups and clothing raises an additional concern. Because of the variability in the legal purchase age (LPA) across countries, it is plausible that an individual drinking from a branded cup is over the LPA in the country where the match is played (e.g. 18 years old in Brazil) but younger than the LPA in another country (e.g. 21 years old in the United States). Additionally, even if the individuals are over the LPA, it is plausible that they do not meet Guiding Principles' Sub-Guideline 4.2, which states that alcohol advertising 'should avoid showing minors or people likely to be perceived as minors' [4]. We are not implying that alcohol companies are responsible for the decisions of a broadcasting company, but they should be held accountable for creating an environment where possible violations of the Guiding Principles could occur.

Limitations

This study illustrates the challenges associated with implementing a public health surveillance system to monitor alcohol marketing in multiple countries simultaneously. Because system fidelity was not 100% and country-specific broadcasts were not selected randomly, the sample may not be representative of global alcohol advertising practices, and generalization to other regions may be limited. However, the sample covers countries differing in population, size and income. The advertisements also cover three major language groups (i.e. Spanish,

Portuguese and English). Intercountry differences or differences between restrictiveness categories may be confounded by cultural or socio-economic factors; however, country-specific advertisements were often rated by experts from other countries, which may diminish this effect. Unfortunately, differences in the content of alcohol advertisements could not be compared statistically across all policy restrictiveness categories because alcohol advertisements were absent from countries with the most restrictive policies (Finland and France).

The experts who evaluated the advertisements could be biased against the alcohol industry, thus overestimating the prevalence of violations, although we believe this to be unlikely. There were several sub-guidelines of the Guiding Principles with which all or nearly all advertisements were compliant, and a minority of advertisements violated catchall sub-guidelines, such as Sub-Guideline 3.3, which prohibits depicting or addressing at-risk groups [4]. Furthermore, results of the second round of advertisement ratings were more conservative than the preliminary ratings, indicating that the raters may have re-assessed their perceptions during the Delphi process. Low item-level inter-rater reliability was detected for a limited number of questions used during the Delphi rating process, although we believe this is unlikely to affect the results. Multiple questions are used to determine whether a single guideline or sub-guideline has been violated, and because a violation was defined based on agreement between raters, disagreement will result in underestimation of violation rates.

CONCLUSIONS

Within alcohol advertisements broadcast during the 2014 FIFA World Cup Tournament, it appears that violations of ICAP's Guiding Principles were highly prevalent, and there was a significant amount of brand appearances during the non-commercial section of match broadcasts. Common violations of the Guiding Principles included associations with success, promoting alcohol as a psychoactive substance, and displaying or promoting excessive alcohol consumption. In-game brand appearances may also violate the Guiding Principles by associating alcohol brands with athletic success and individuals under the LPA. In our opinion these results indicate that self-regulation and partial restrictions are ineffective at limiting alcohol marketing content and that stricter policies may be needed.

Declaration of interests

None.

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Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Table S1 Ad characteristics.

Table S2 In-Game and Out-of-Game alcohol brand appearances by policy restrictiveness.

Table S3 In-Game and Out-of-Game alcohol brand appearances by match.

The marketing potential of corporate social responsibility activities: the case of the alcohol industry in Latin America and the Caribbean

Daniela Pantani¹, Raquel Peltzer³, Mariana Cremonete³, Katherine Robaina⁴, Thomas Babor⁴ & Ilana Pinsky^{1,2}

Federal University of São Paulo, Department of Psychiatry, São Paulo, Brazil,¹ The National Center on Addiction and Substance Abuse, New York, NY, USA,² National University of Mar del Plata, CONICET, Mar del Plata, Argentina³ and Department of Community Medicine and Health Care, University of Connecticut Health Center, Farmington, CT, USA⁴

ABSTRACT

Aims The aims were to: (1) identify, monitor and analyse the Corporate Social Responsibility (CSR) practices of the alcohol industry in Latin America and the Caribbean (LAC) and (2) examine whether the alcohol industry is using these actions to market their products and brands. **Methods** Nine health experts from Argentina, Brazil and Uruguay conducted a content analysis of 218 CSR activities using a standardized protocol. A content rating procedure was used to evaluate the marketing potential of CSR activities as well as their probable population reach and effectiveness. The LEAD procedure (longitudinal, expert and all data) was applied to verify the accuracy of industry-reported descriptions. **Results** A total of 55.8% of the actions were found to have a marketing potential, based on evidence that they are likely to promote brands and products. Actions with marketing potential were more likely to reach a larger audience than actions classified with no marketing potential. Most actions did not fit into any category recommended by the World Health Organization; 50% of the actions involving classroom and college education for young people were found to have marketing potential; 62.3% were classified as meeting the definition of risk management CSR. **Conclusion** Alcohol industry Corporate Social Responsibility activities in Latin America and the Caribbean appear to have a strategic marketing role beyond their stated philanthropic and public health purpose.

Keywords Advertising, alcohol industry, alcohol marketing, Caribbean, corporate social responsibility, Latin America.

Correspondence to: Pantani Daniela, Federal University of São Paulo, Department of Psychiatry, Rua Borges Lagoa, 570, 1° andar, Vila Clementino, São Paulo, SP 04038-000, Brazil. E-mail: daniela.pantani@gmail.com

INTRODUCTION

Corporate social responsibility (CSR) activities have been employed by the alcohol industry for more than two decades, but since 2010 they seem to have expanded among the transnational producers and their partners [1]. The creation of the World Health Organization's (WHO) Global Strategy to Reduce the Harmful Use of Alcohol (WHO, 2010) was an important milestone for WHO Member States, and seems to have contributed to the exponential growth of CSR activities. On several occasions, the industry has designated themselves as 'legitimate stakeholders in government and public health initiatives' in the sense of suggesting partnerships with WHO and civil society organizations to contribute to the effort to reduce the harmful use of alcohol [2,3].

Accordingly, in 2012, the International Center for Alcohol Policies (ICAP), a social aspects and public

relations organization (SAPRO), which operated until 2015 on behalf of the alcohol industry, disseminated a set of five commitments to develop CSR programmes to ostensibly support the Global Strategy. They included the reduction of underage drinking, strengthening voluntary codes of marketing practice, providing consumer information, responsible product innovation, drinking and driving countermeasures, and support to retailers to reduce the harmful use of alcohol [4]. ICAP also launched a web-based compendium of more than 3550 actions funded by alcohol producers, trade associations and SAPROs all over the world. The foundation of the International Alliance for Responsible Drinking (IARD) in 2015 incorporated ICAP's activities into the new organization to give the major alcohol producers more control over the strategy [5].

This research is based on the theory that companies can engage in three forms of CSR: ethical, altruistic and

strategic [6,7]. The ethical responsibility of a business is the idea of avoiding harm even when the firm cannot earn money from it. It can be argued that being ethical is mandatory for any company, because causing damage to society is not an acceptable outcome for any business. However, there are numerous examples in history of how companies are, in fact, putting society in danger, including pollution, deforestation and corporate-induced diseases related to the consumption of alcohol, tobacco and overprocessed foods that are highly promoted by marketing [8,9]. Altruistic responsibility, in turn, involves philanthropic actions without necessarily having any connection to the core business of a corporation. Philanthropy is one of the oldest forms of CSR, and perhaps the one that could fulfil CSR goals, because it goes beyond mitigating corporate externalities and preventing damage. However, philanthropic or humanitarian actions are normally out of the scope of companies because they demand the use of many extra resources. Finally, strategic responsibility aligns philanthropy with profit, meaning that it can bring financial benefits for 'perceived socially responsible behavior' [6].

It is not easy to define the motivations that lie behind the adoption of a CSR programme [10]. In the case of the alcohol industry it seems important, however, to investigate the impact of these actions on public health, in contrast to their potential for enhancing corporate image and marketing products and brands—called here 'marketing potential'. In this regard, several studies have investigated the use of responsible drinking messages (e.g. 'drink responsibly'), one of the first forms of CSR in the field. They found that the messages create a favourable image of alcohol brands without having any influence on excessive drinking [11–13]. Similarly, actions related to self-regulation marketing codes raise concerns about industry vested interests, as there is consistent evidence that self-regulation is not an effective way to prevent exposure to potentially harmful advertising content, especially among teenagers [14–17].

This study is part of a broader research project that aimed to identify, monitor and analyse the CSR practices of the alcohol industry in Latin America and the Caribbean (LAC). Our purpose was to examine the extent to which the alcohol industry is using these actions to market their products and brands and to create a favourable corporate image. Experts from three South American countries evaluated CSR activities with regard to their content, marketing potential, likelihood of conforming to the WHO Global Strategy target areas, evidence of effectiveness and potential to influence alcohol policy.

METHODS

The 'Producers' Commitment' database¹ is maintained by IARD and collects summaries of activities conducted by national and multi-national alcohol companies and SAPROS. The activities, called 'industry actions', were conducted, according to IARD, in support of the WHO Global Strategy. Nine public health experts from Argentina, Brazil and Uruguay analysed all industry actions ($n = 218$) from LAC, using IARD's information. Summary descriptions for three actions were missing, leaving 215 actions in which all variables were rated.

A standardized protocol was created and comprised 17 categories: the year that the activity began and ended, the sponsoring company, partners, country(ies) where it took place, whether there was government involvement, whether there was an industry-reported evaluation and, if so, the evaluation type, WHO Global Strategy area (according to sponsoring company and to raters), the potential of the action to cause harm to target groups, advertising and marketing potential, potential for policy impact, direct economic benefit to company, CSR potential, population reach, type of activity and estimated effectiveness. For the latter, raters used a set of 71 activities that were already evaluated in the literature [17,18] on a four-point scale of effectiveness (0 to +++), plus nine activities observed commonly in the alcohol industry CSR strategy but that have not been evaluated in policy research.

Experts were trained in the protocol by rating the same 35 initiatives selected randomly from the database. They compared their responses to achieve consensus where discrepancies were observed. After the first round, minor changes were made in the codebook in order to adapt it to the LAC context. A second round of another 35 randomly selected initiatives was then conducted. After achieving an acceptable level of inter-rater reliability (IRR; $\kappa \geq 0.5$), raters were divided into three teams and each received one-third of the actions to code.

We also analysed whether the summary descriptions provided by IARD were sufficient to establish the validity and the reliability of the information. As there was no 'gold standard' for this purpose, researchers adopted the LEAD (longitudinal, expert and all data) standard [19] used in psychiatry to evaluate the validity of a diagnostic assessment instrument. 'Longitudinal' means that the information should not be limited to a single moment but should, rather, be based on monitoring the action over time to gather information about the past and the present. 'Expert' means the evaluation is performed by one or more experts in the field of alcohol control, who make an independent

¹Until the completion of this paper, and after data collection, the industry performed two administrative changes. First, the creation of IARD resulted in layout and information changes in the database. Secondly, the website that hosted the database (<http://initiatives.producerscommitments.org>) was shut down at the beginning of April 2016.

assessment based on available data and the scientific literature. Finally, 'all data' implies the systematic use of multiple sources of information to evaluate the subject, such as interviews, attending industry-sponsored events, documents, videos, websites, etc. The criterion for ending the search was data saturation. Raters were trained in the procedure and IRR was acceptable ($\kappa \geq 0.5$).

Additionally, inclusion criteria were created to guarantee the feasibility of the procedure: (a) activities that started after 2010 (the year of the WHO Global Strategy) and (b) activities that had started before 2010 but were still active until the beginning of data collection. As a result, the LEAD procedure was applied to 150 activities. Agreement among raters before and after LEAD was acceptable in most categories²: partners ($\kappa = 0.69$), government involvement ($\kappa = 0.62$), industry-reported evaluation ($\kappa = 0.32$) and evaluation type ($\kappa = 0.41$), harm potential ($\kappa = 0.88$), marketing potential ($\kappa = 0.86$), policy impact ($\kappa = 0.69$), WHO Global Strategy area [$\kappa = 0.48$ (95% intraclass coefficient = 0.37–0.58)], CSR potential ($\kappa = 0.65$) and population reach ($\kappa = 0.69$). Considering the high level of agreement for marketing potential, data analyses were run based upon the entire sample ($n = 215$).

Marketing potential was evaluated by analysing whether the action could promote a specific brand or a product. Available responses were 'none' or 'possible'. Actions rated as 'possible' involved giving away merchandising material or marketing a specific product or brand. Experts were instructed to rate the activities conservatively using the evidence in the scientific literature. Activities undertaken by trade organizations or SAPROs were not rated as having marketing potential.

Finally, the evaluation of CSR potential was based on current literature [6,7] and considered four types of corporate responsiveness. Coders could rate the actions as (a) not having a social or environmental responsibility interpretation or not reflecting positively on the company ('none'); (b) 'altruistic' responsibilities that reflect giving back time or money to contribute solely to the wellbeing of a community or society, such as charity work or philanthropy that could have little or no impact on company's operational strategies; (c) 'risk management', which assumes that corporate externalities exist and refers to the company's needs to mitigate them and respond to social demands, such as responsible drinking messages or safe-rides campaigns; and (d) 'strategic', which allows the company to give back to the society and at the same time they can have a return on the investment in terms of resources or public relations. Coders were provided with examples and indicators for each type of CSR to minimize subjective bias.

RESULTS

The majority of actions were found to have marketing potential (55.8%), according to the raters. More than sixty per cent (62.3%) were classified as meeting the definition of risk management CSR (Fig. 1). A smaller number (37.5%) were classified as strategic CSR. Of the 69 Actions classified as strategic CSR, 45 (65.2%) were also considered to have marketing potential. Similarly, of the 133 actions considered to have risk management CSR, 54.9% had marketing potential.

In terms of estimated population reach, our findings revealed that actions with marketing potential were more likely to have a larger reach than actions classified as 'none' (Fig. 2). More than 80% of the actions with large population reach, for example national media campaigns promoting designated drivers, or actions that could present a large cumulative effect in a population, were likely to promote alcoholic beverage brands or products.

We next analysed whether those activities could fit into any of 10 target areas defined by the WHO Strategy to reduce the harmful use of alcohol [20]. A significant proportion of activities with marketing potential were categorized by both the industry ($P < 0.001$) and the raters ($P < 0.001$) under the area of drink-driving (35.8%). This included actions such as designated driver campaigns, ride services, breathalyzer donations, taxi discounts, etc.

Table 1 gives an overview of the activities in relation to other variables in the study. Major producers were more likely to carry out actions with marketing potential. AB InBev conducted 52.5% of them. Considering the potential to impact national or local policies, 3.3% of actions that had policy impact were evaluated as having marketing potential ($\chi^2 = 14.07$, d.f. = 1, $P < 0.0001$; Cramer's $V = 0.26$).

Regarding activity type, Table 2 shows that 25.8% of the activities with marketing potential were classified as miscellaneous, non-evidence-based interventions, such as events targeted to corporate employees, industry-funded research and drink-driving countermeasures different from those described in the literature (breathalyzer donation, for instance). Nearly a quarter (24.2%) were classified as media campaigns, such as conversations through blogs and social media. Additionally, 50% of the actions involving classroom and college education for young people were found to have marketing potential.

The majority of actions were estimated on the basis of the research evidence to either lack effectiveness (33%) or to have insufficient research to judge their probable impact (62.8%). Only 10 activities (4.6%) were rated as having any level of effectiveness (limited, moderate or

²Agreement for economic potential was not calculated, because all actions were coded as not having direct gain based on industry-reported descriptions, nor for activity type due to the high number of categories.

Figure 1 Corporate Social Responsibility (CSR) approach and marketing potential ($\chi^2 = 11.14$; d.f. = 2; $P = 0.004$; Cramer's $V = 0.23$)

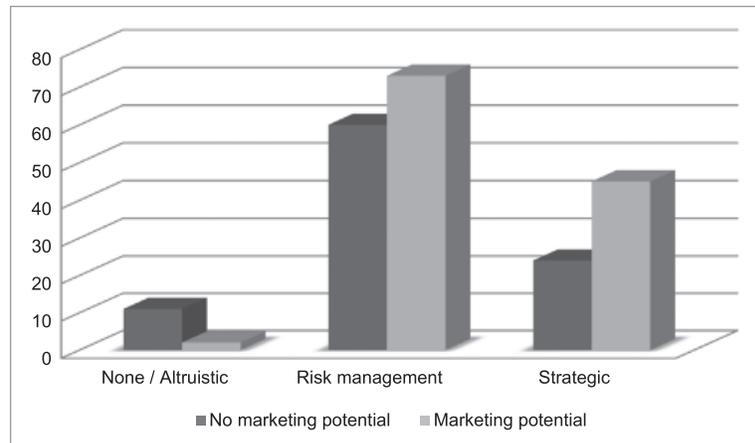
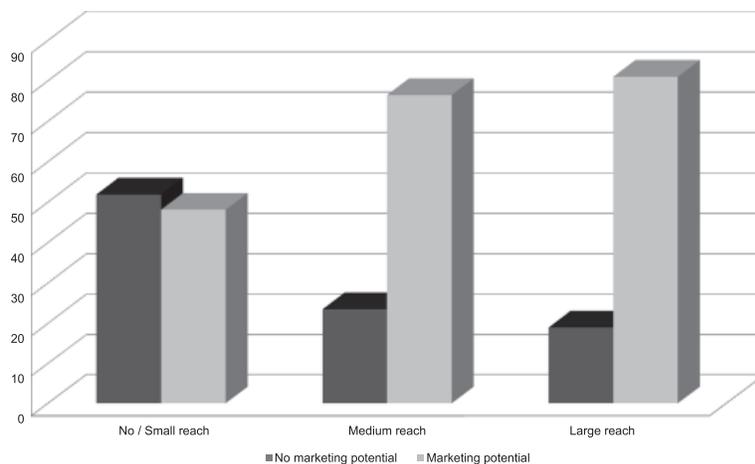


Figure 2 Marketing potential and estimated population reach ($\chi^2 = 15.10$; d.f. = 2; $P < 0.001$; Cramer's $V = 0.26$)



high). Among those, four also had marketing potential. The association between evidence of effectiveness for the actions and marketing potential, however, was not statistically significant ($P = 0.483$). Similarly, raters evaluated 51 actions (23.7%) as having the potential to cause harm from a public health perspective based on available scientific evidence, 29 (56.9%) of which also had advertising potential. Examples of actions with harm potential are safe-ride programmes (e.g. party buses) similar to those which have been found to increase heavy drinking and 'responsible drinking' programmes for young children (see Supporting information, Appendix S1). There was no association, however, between the potential for damage and whether the activity had marketing potential ($P = 0.873$).

Finally, most activities with advertising potential (62.5%) did not include a process or outcome evaluation, as reported by the industry sponsor. The majority of the actions that presented any type of evaluation, however, had marketing potential (78.9%). We found the lack of evaluation was associated with the potential for marketing ($\chi^2 = 16.83$, d.f. = 1, $P < 0.0001$; Cramer's $V = 0.28$).

CASE STUDIES

Qualitative findings are described below to illustrate actions with possible marketing potential:

- *Curtisom* (Portuguese slang for *Enjoy the Sound*): Conducted by AB InBev in Brazil, this initiative aimed to provide event structure and merchandising materials with brand logos to bars in poor communities so they could promote concerts and parties. According to the company, the CSR component was present through the addition of a '+ID' logo in the merchandising material and the exhibition of responsible drinking videos during the parties. Raters could not find any depiction of responsible drinking material in the documents analysed, which included photographs and videos.
- *Guardian Angel and Digital Application (app)*: An action reported by Diageo in Colombia, it consisted of a designated driver campaign with print and video materials, followed by the development of a mobile app to help consumers to reach cabs when they drink. A 15% discount was given in the taxi ride for drinkers of Diageo's brands who consumed in registered venues. Diageo also conducted

Table 1 Overview of actions with no or possible marketing potential ($n = 215$).

Variables	No marketing potential (%)	Possible marketing potential (%)	P-value	Cramer's V
Producer				
AB InBev	27 (28.4)	63 (52.5)	0.000	0.50
Diageo	7 (7.4)	15 (12.5)		
SAB Miller	10 (10.5)	15 (12.5)		
CCU	4 (4.2)	10 (8.3)		
Other national producer	1 (1)	9 (7.5)		
Other transnational producer	10 (10.5)	8 (6.7)		
Trade associations and SAPROs	36 (37.9)	0 (0.0)		
WHO target area (raters' evaluation)				
None	83 (87.4)	70 (58.3)	0.000	0.36
Drink-driving	5 (5.3)	43 (35.8)		
Other	7 (7.4)	7 (5.8)		
Policy impact potential				
None	77 (81.1)	116 (96.7)	0.000	0.26
Possible/high	18 (18.9)	4 (3.3)		
Potential for harm				
None	73 (76.8)	91 (75.8)	0.863	
Possible/high	22 (23.2)	29 (24.2)		
Estimated population reach				
None/small	83 (87.4)	77 (64.2)	0.001	0.26
Moderate	8 (8.4)	26 (21.7 %)		
Large	4 (4.2 %)	17 (14.2)		
CSR potential				
None/altruistic	11 (11.6)	2 (1.7)	0.004	0.23
Risk management	60 (63.1)	73 (60.8)		
Strategic	24 (25.3)	45 (37.5)		
Effectiveness				
None/unknown	90 (94.7)	116 (96.7)	0.483	
Effective (limited, moderate)	5 (5.3)	4 (3.3)		

a version of the mass media campaign (without the app) in Uruguay.

- *Chofer Designado (Designated Driver)*: This mass media campaign was conducted through television, radio and press by Florida Bebidas, a company that retails seven beer brands in Costa Rica. Free ride services were also provided to consumers during parties, but only to drinkers who could prove their state of inebriation through a test applied by the driver.
- *Global (Be)er Responsible Day*: This action was undertaken by AB InBev in four LAC countries: Argentina, Brazil, Bolivia and Paraguay. It consisted typically of a 1-day annual event to 'celebrate alcohol responsibility initiatives'. In Argentina, AB InBev ran the event for an entire week by distributing stickers with legal age enforcement, breathalyzer donations for educational purposes, television and radio campaigns to promote responsible drinking and designated driver actions through a partnership with the Rugby league. In Brazil, the company engaged employees and partners, such as non-governmental organizations (NGOs) that work with children and teenagers in economically disadvantaged urban areas, to distribute posters at point

of sale (POS) and ran educational activities. In Bolivia, employees visited POS and conducted a national media campaign. In Paraguay, employees and local celebrities visited POS wearing special shirts and badges to distribute stickers and brochures to reinforce the legal drinking age.

- *Taxi*: This was a television campaign conducted by AB InBev in Uruguay about safe rides. According to the company, it was the first time that responsible drinking advertising had been conducted in the country.
- *Responsible Consumption Messages at the Starts With You (SWU) Music Festival*: Undertaken by Heineken in Brazil to promote preventive measures during a music festival, it promoted the slogan 'Enjoy Heineken Responsibly' in merchandising material and provided identification bracelets for all consumers over legal drinking age. It also included drink-driving messages and bartender training to comply with the law of not selling to minors.

DISCUSSION

Reducing the impact of marketing is considered by the WHO as an important measure to control the harmful

Table 2 Most frequent types of activities with marketing potential.

<i>Activity type</i>	<i>Frequency (%)</i>
'Other' non-evidenced-based interventions	25.8
Media campaigns	24.2
Promotional events/RD message secondary to marketing	13.3
Classroom and college education	5.8
Designated driver campaigns and safe rides	6.6

RD = responsible drinking.

use of alcoholic beverages [20]. We found that while the alcohol industry has been claiming to undertake CSR strategies in support to the WHO Global Strategy, more than half the actions were considered to have the potential to sell alcohol products and promote brands. Even more troublesome, from the small percentage of actions that were considered to have some level of effectiveness 40% also had marketing potential, which may undermine any attempt to control alcohol problems.

Because these marketing activities are embedded in CSR actions, the general public may not perceive them as advertising and, as a result, may not be aware of their ability to promote products. Additionally, the blurred line between CSR and marketing puts these actions in a position where they are not entirely under the scrutiny of civil society and governments regarding marketing regulation, especially when they present smaller population reach and their marketing components could not be accessed easily [21].

Most activities, regardless of their marketing potential, were considered as not corresponding to any Global Strategy area, or coders were not able to classify them due to insufficient information. Based on IARD's descriptions, raters considered that among those that could meet the WHO description, drink-driving was the area with the most actions. As illustrated by the qualitative data, designated driver programmes, mass media campaigns and ride services were the actions conducted most often. Scientific evidence of designated driver and safe-ride programmes, however, has shown limited effectiveness [22]. Furthermore, the majority of the actions presented one or more components that indicated marketing potential, such as the addition of brand logos, the offer of ride services only upon consumption of alcoholic beverages and the use of drink-driving messages secondary to the marketing strategy. Our findings suggest that those activities are in conflict with the public health objectives, as in their implementation they are endorsing and promoting alcohol products.

Similarly, half the actions involving classroom education for young people were found to have marketing potential. Those activities were typically school-based programmes that included minors or interventions with

college students to increase knowledge about alcohol consumption. One of the goals of the school programmes is to delay the onset of drinking, and in the case of college individuals the programmes are conducted in response to the amount of heavy drinking identified. Even if designed, implemented and evaluated correctly, school-based programmes can have no efficacy and even be counterproductive in terms of behaviour change and reducing substance abuse [23]. The inclusion of marketing components as seen in the present study could result in the direct opposite of public health objectives, such as the increase of drinking behaviours and the stimulation of early initiation of alcohol consumption.

The ratings of CSR strategies revealed that enhancing corporate image was not the only expected outcome for the alcohol companies. Although the definition of CSR lacks rigour in the scientific literature, applying the concept to make direct endorsement of brands is a different purpose from mitigating corporate externalities, responding to social pressures or giving back to society. The enhancement of corporate image and the establishment of the 'implicit contract' with the society to legitimate the firms' operations are considered normally as indirect consequences of 'doing the right thing'. Our findings suggest that the alcohol industry might be using CSR to maximize profit.

The findings also suggest the need for public health authorities and policymakers to monitor CSR strategies and evaluate their potential as another form of marketing, and to take into account possible conflicts of interests when they are encouraged to develop partnerships with the alcohol industry. Furthermore, civil society's representatives, researchers and health professionals should evaluate carefully whether it is acceptable to jeopardize public health objectives and allow science to act as a potential marketing strategy in exchange for funding or other types of sponsorship.

Study limitations include the dependence upon industry-reported information. Despite several attempts by the researchers to access information, many companies still treat their programmes' evaluations and results as proprietary and do not allow public access. This fact could partially explain the level of agreement below 0.5 in some variables, such as 'industry-reported evaluation', 'evaluation type' and 'WHO category'.

Declaration of interests

None.

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Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Appendix S1 References related to Risk of Harm Potential.

When evidence is not enough: a case study on alcohol marketing legislation in Brazil

Alan Vendrame

Department of Psychiatry, Federal University of São Paulo, São Paulo, Brazil

ABSTRACT

Aims This case study identifies the influence and mechanisms that the alcohol industry in Brazil has been able to bring to bear to maintain self-regulation in the marketing of beer and many wines set against a trend of increasing alcohol consumption in Brazil, particularly among young people and women. It identifies the forms of power and strategies used by the alcohol industry in Brazil that may be useful for other countries to consider in seeking to move from self-regulation to state regulation of alcohol marketing. **Method** A review was conducted of recent legal documents and court cases, as well as the activities of alcoholic beverage industries. **Results** Because of an exemption, Brazilian law had established that both beer and many wines are not alcoholic beverages for marketing purposes. These beverages are subjected to industry self-regulation codes. Research shows that beer and wine marketing often violates industry codes, with little or no enforcement of penalties for non-compliance. Attempts to include beer and wine in the legal definition of alcohol have been opposed by the alcohol industry, and the courts have delegated responsibility to the legislature. The recent legal activities surrounding alcohol sales during the 2014 World Cup games in Brazil provide evidence of the alcohol industry's influence on the legislative process. **Conclusion** The alcohol industry in Brazil plays a significant role in the formulation of public policies on alcohol, especially regarding the regulation of marketing. This power is exercised by strong lobbying of government officials responsible for public policies.

Keywords Adolescent, alcohol, alcohol marketing, alcohol use, public health law, self-regulation.

Correspondence to: Alan Vendrame, Department of Psychiatry, Federal University of São Paulo, São Paulo, Brazil. E-mail: aven2@uol.com.br
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INTRODUCTION

The alcohol industry in Brazil plays a significant role in the formulation (or lack of formulation) of public policies on alcohol, and in particular the regulation of alcohol marketing [1]. Within this context, epidemiological studies conducted in the last few years in Brazil have shown that the consumption of alcoholic beverages, especially among young people and women, is increasing. Alcohol consumption has been increasing in these populations since these studies began (2004) [2–5].

The most recent data (II LENAD: Second Brazilian National Alcohol and Drugs Survey) revealed that between 2006 and 2012, the proportion of young women experimenting with alcohol before age 12 had increased from 1 to 4%; for young women aged 12–14 years, there was an increase from 7 to 13%; and the increase was

from 28 to 32% for young women aged from 14 to 17 years [5]. The proportion of women who consume five or more drinks per episode increased from 14% in 2006 to 27% in 2012 and the frequency of drinking alcohol increased at least once a week from 27% in 2006 to 38% in 2012. The difference in consumption levels of alcohol between males and females has been decreasing progressively [5].

In the case of adolescents, data from the II LENAD have shown an increase in abstinence (people who have not drunk alcohol in the past 12 months) from 66% in 2006 to 74% in 2012. However, the average age at which regular consumption of alcohol has remained stable among boys and throughout this time has risen significantly among girls, from 69% in 2006 to 74% in 2012. Furthermore, binge drinking among adolescents aged 14–17 years increased by 7.5%, and the increase was 29% in the female population [5].

MARKETING AND EXCESSIVE ALCOHOL CONSUMPTION

Brazil has become a strategic country for the alcohol industry for two important reasons: the economic stability in the last few years and the significant number of young abstinent people in the population [1,6]. Thus, marketing has become an instrument used strategically by the alcohol industry for the acquisition of new consumers and to encourage the regular consumption of alcohol.

According to research on the effects of alcohol marketing, the damage arising from alcohol advertising in children and adolescents occurs through the level of exposure to the messages advertised. Children and adolescents who are more exposed to advertising initiate alcohol consumption at an earlier age and have a tendency to consume in a more abusive pattern than those who were not exposed [7,8]. According to longitudinal studies, this influence occurs gradually, and it involves a chain of factors (e.g. parents' pattern of use, peer pressure) that can influence someone to initiate consumption or to drink excessively [9].

In countries where alcohol advertising is permitted there are two types of regulation methods: through the law (legal control) and through self-regulation (industry ethical control). In some cases both patterns can operate simultaneously. As illustrated in Fig. 1, the system adopted for alcohol regulation in Brazil is a hybrid of these two systems. The Federal Constitution (1988) determines that the alcohol marketing should be regulated through law [10], but in 1996 the National Congress decided that alcoholic beverages for advertising purposes had to have an alcohol concentration higher than 13 on the Gay-Lussac scale [11] (approximately equal to 13% alcohol by volume). This excluded for marketing purposes most



Figure 1 Overview of Brazilian regulatory system for alcohol marketing

wines and beer, the beverages that are the most commonly consumed in Brazil.

LACK OF REGULATION

To the extent that Brazilian law establishes for marketing purposes that both beer and wine are not alcoholic beverages, this constitutes a conceptual error from both medical and scientific viewpoints. As these alcoholic beverages were excluded from legal regulation, regulatory control has fallen to the Brazilian Advertising Self-Regulation Council (CONAR). The CONAR is a non-governmental organization, created in 1980 by advertisers who feared that the government would take legal action to prohibited marketing. The system's objective was to promote the ethical control of marketing by means of a self-regulation code and by the use of an ethical counsel that would determine whether or not the established rules were obeyed.

The rules and restrictions contained in the CONAR Code, like other countries that adopt this system, were derived from two principles: to protect children and adolescents by prohibiting marketing directed to this audience and to prohibit marketing that induces abusive and irresponsible alcohol consumption. As a result of this, a series of restrictions are enforced in order to control the content of alcohol marketing.

Numerous studies conducted in Brazil using a public health perspective show that self-regulation of alcohol marketing is ineffective [1,12,13]. The self-regulation code is followed by the alcohol industry voluntarily, but there is no effective way to enforce the rules when they are violated [13]. Beer advertisements often carry a message that encourages excessive alcohol consumption, and there is evidence that messages are also directed at children and adolescents [1,13].

Similar evidence was found in other countries where self-regulation is used for controlling alcohol marketing [12,14]. For example, a study conducted to evaluate advertising code violations using the US Beer Institute Guidelines for responsible advertising concluded that (due to considerable code violations on alcohol advertisements) the alcohol industry's current self-regulatory framework was ineffective at preventing content violations [14].

In practical terms, the alcohol industry does not encounter significant limitations when defining the content and the target audience of their advertising in Brazil, despite occasional modifications in the rules of self-regulation [13]. This situation can be explained from the alcohol industry's global strategy to influence marketing regulations. The alcohol industry usually defends self-regulation against statutory regulation by emphasizing the industry's responsibility and the effectiveness of self-regulation, arguments that are not supported by evidence [15].

In this context, an effective and low-cost measure to protect vulnerable populations from the alcohol marketing and also to prevent excessive alcohol consumption would be to include beer and wine in the legal definition of alcohol, thus allowing statutory control of marketing communications. However, this approach is opposed by the alcohol industry [15–17].

Since 1996, dozens of bills that were designed to re-define the legal concept of alcohol for marketing purposes have not been passed by the National Congress [13]. In contrast, measures that benefit the alcohol industry are approved quickly with little or no difficulty in comparison to the time-consuming and bureaucratic process that other bills must undergo. One example was the request to allow the sale and consumption of alcohol in football stadiums during the FIFA World Cup of 2014 [17]. The sale and consumption of alcohol in football stadiums were prohibited in the 1990s due to the violence and subsequent deaths among rival football fans. Legislators understood that, among other factors, these behaviours were related directly to the consumption of alcohol. In the year prior to the World Cup, AB Inbev, one of the largest brewers in the world, the leading brewer in Brazil and one of the main sponsors of FIFA 2014, managed to influence the National Congress to approve a bill allowing the sale and consumption of alcoholic beverages during World Cup events [17].

THE LAWSUIT AT THE SUPREME COURT: CONSTITUTIONAL ISSUES ON ALCOHOL MARKETING REGULATION

Given the lack of regulatory control over the marketing of beer and wine and the increasing alcohol consumption among youth and other vulnerable groups, the Republic's General Attorney concluded that the National Congress had made an 'unconstitutional omission' due to the blocking of legislative bills that aimed to correct the legal definition of alcohol for marketing purposes. In 2012, the Attorney General filed a lawsuit of unconstitutionality by omission (ADO22) with the Brazilian Supreme Court (Supremo Tribunal Federal: STF).

In general terms, the Attorney General argued that [18]: (1) studies conducted in Brazil have shown that the alcohol industry's self-regulated marketing codes are ineffective at preventing potentially harmful content from appearing in alcohol marketing, and beer advertisements are directed mainly towards children and adolescents; (2) lack of regulation and control of beer is a public health issue, as the evidence shows that there is an association between exposure to alcohol marketing and the early initiation of alcohol consumption as well as subsequent excessive drinking; (3) there is a constitutional duty to regulate alcohol marketing, and the National Congress, when it defined alcohol for marketing purposes as a concentration

superior to 13 degrees Gay-Lussac (roughly 13% alcohol by volume), included a conceptual error in the Brazilian law; and (4) the STF should recognize its institutional omission and request the National Congress to correct its legal definition of alcohol as it applies to marketing because of the need to obey the intent of the Federal Constitution.

The type of action proposed by the Attorney General allows non-governmental organizations to represent interests related to the trial and to join in the process as *amicus curiae* (friend of the Court), whose participation is limited to presenting technical arguments on which the court can base its decision. The figure of *amicus curiae* on the Brazilian Supreme Court is similar to the one provided by the Court Rules of the Supreme Court of the United States (Rule 37, *Brief for an Amicus Curiae*) [19].

In case ADO22, ABERT (Brazilian Association of TV and Radio Broadcasting) and CERVBRASIL (Brazilian Association of Beer Industries) presented arguments against correcting the legal definition of alcohol and ABP (Brazilian Psychiatric Association) and ABEAD (Brazilian Association of Alcohol and Drug Studies) presented arguments in favour of the change.

BEER MARKETING AND THE STF: WHEN EVIDENCE IS NOT ENOUGH

After 2 years of legal transactions, the STF decided against the public health viewpoint [18]. Weeks after the judgement, the court ruled regarding the arguments formulated by ABP and ABEAD. Only the ABP was accepted as *amicus curiae*; the STF argued that the ABEAD represented the same interests as the ABP, in such a way that their arguments were unnecessary. Conversely, ABERT and CERVBRASIL, both of which had common interests, were included as *amicus curiae* in the ADO22 and both were allowed to present their arguments [18].

The action was judged unfounded by all the judges from STF, because the court understood that if the judiciary accepted the arguments of the Attorney General by the ABP there would be a conflict among powers, as the judiciary would be exercising legislative authority, which is considered the National Congress's exclusive right. With this argument of a possible interference in the right of another power, the STF did not analyse the question at hand, disregarding all the evidence presented, even if this decision favoured one specific sector of the economy (the alcohol industry) which resulted in damage to society and public health [18].

In this case, the STF lost an important opportunity to establish public policies based on evidence. The ADO22's decision contradicts similar cases dealing with questions of omission conducted by the National Congress in their legislative activity. A historical series published by the STF itself shows that, from 1992 to 2009, 30 actions that concerned

institutional omission by the Legislative Power [18] were judged pertinent by the court. In declining the opportunity to correct the legal definition of alcohol for publicity purposes, the court contravened previous precedent by declaring that the issue was a matter for the National Congress exclusively.

Due to the binding character of STF's decision, alcohol marketing regulation in Brazil cannot be litigated in any other court at any level in the country. All the judges are obliged to sustain the decision of ADO22. In other words, the matter of correcting the legal definition of alcohol for advertising purposes and, thus, the inclusion of beer and most wine marketing under statutory control, became exclusively a responsibility of the National Congress.

FINAL CONSIDERATIONS

In Brazil, official data estimate that the country spends 7.3% of its Gross National Product per year on problems related to the use of alcohol, from its medical treatment to the loss of work productivity derived from its use [20], amounting to approximately US\$93 billion. In the last 4 years, the SUS (public health system) identified 313 000 hospitalizations due to alcoholism, with an annual cost of US\$249 million. Twenty per cent of treatment in general care alone is due to alcohol abuse, and 50% of psychiatric treatment has a connection with the abuse of alcohol [20].

The social cost of alcohol is extremely damaging for Brazilian society, even when taking into account how much society raises in tax revenue from the production and commercialization of alcohol. As a comparison, AB Inbev is the largest taxpayer in Brazil, generating approximately US\$3.8 billion annually for the government [18] versus US\$93 billion spent on alcohol problems.

Since the STF decision, the possible inclusion of beer and wine in the legal control of alcohol marketing now depends exclusively upon the will of the National Congress.

A scenario where the National Congress intervenes is highly unlikely, given that the alcohol industry is one of their main campaign donors. For the 2014 Congress and Presidential elections alone, the alcohol industry donated US\$60.7 million to the main candidates and parties. Apparently, this mechanism of financial support enhances the influence of the alcohol industry in the formulation of alcohol policies and maintenance of their business interests.

This case study demonstrates that, in order to protect their own economic interests against any attempt of statutory control over alcohol marketing where self-regulation is used around the world, the alcohol industry exercises a strong lobby to influence policymakers.

Declaration of interests

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France's Évin Law on the control of alcohol advertising: content, effectiveness and limitations

Karine Gallopel-Morvan¹, Stanislas Spilka^{2,3}, Carine Mutatayi², Alain Rigaud⁴, Franck Lecas⁴ & François Beck²

EHESP School of Public Health, EA 7348 MOS, Rennes, France,¹ OFDT (French Monitoring Centre on Drugs and Drug Addiction), Saint-Denis La Plaine Cedex, France,² INSERM U1178—Santé mentale et santé publique, Maison de Solenn, Paris, France³ and ANPAA (National Association for the Prevention of Alcoholism and Addiction), Paris, France⁴

ABSTRACT

Aims To assess the effectiveness of the 2015 version of the French Évin Law that was implemented in 1991 with the objective of protecting young people from alcohol advertising. **Design** Data were obtained from survey questions measuring exposure and receptivity to alcohol advertisements that were introduced for the first time in the 2015 European School Survey Project on Alcohol and Other Drugs (ESPAD). **Participants and setting** A representative sample of 6642 10th–12th grade students (mean age 17.3 years) were interviewed in 198 schools in France by a self-administered questionnaire. **Measurements** Information was collected on alcohol advertising exposure in different media (outside billboards, internet, etc.) and receptivity to recent advertisements (attractiveness, incentive to drink, etc.). **Findings** The majority of students declared that they had been exposed at least once a month to alcohol advertisements in supermarkets (73.2%), in movies (66.1%), magazines and newspapers (59.1%), on billboards in streets (54.5%), and on the internet (54.1%). Concerning the last recalled advertisements, 27.8% remembered the beverage type, 18.2% the brand, 13% felt like having a drink after having seen the advertisement and 19.6% found the advertisement attractive (boys ranked significantly higher than girls for all these indicators; P -value < 0.05). **Conclusion** The 2015 version of the French Évin law does not appear to protect young people effectively from exposure to alcohol advertising in France.

Keywords Advertising, alcohol, Évin law, marketing, regulations, youth.

Correspondence to: Karine Gallopel-Morvan, EHESP School of Public Health—EA 7348 MOS, Avenue Professeur Léon Bernard, 35043 Rennes, France. E-mail: karine.gallopel-morvan@ehesp.fr

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INTRODUCTION

Although alcohol and wine are rooted in French culture, drinking patterns have changed in recent decades: consumption of pure alcohol has decreased from 25 l per inhabitant in 1960 to 12 l in 2014 [1]. However, in 2014, 8.4 million people aged 18–75 years reported regular alcohol consumption: on the Alcohol Use Disorders Identification Test (AUDIT-C), 31% were classed as occasional-risk drinkers and 8% as chronic-risk drinkers [2]. Binge drinking behaviours (six or more drinks in a single session) increased significantly from 54% in 2010 to 60% among the male 15–24 age group [3]. For 15–16-year-old students, heavy episodic drinking (HED, five or more drinks on one occasion) has also increased: in 1999, the figure for HED in the past 30 days was 33% compared to 44% in 2011 [4].

Alcohol abuse has serious consequences in France: it accounts for 49 000 deaths per year [5], it is a factor in

road traffic crashes, homicides and domestic violence, and its social cost was estimated to be €120 bn in 2010 [6].

Since 1960, the French government has implemented a range of alcohol control policy measures that has almost certainly played a role in decreasing alcohol-related harm over the last 40 years. These include prohibiting the sale of alcohol to under 18s, banning so-called 'happy hours' unless non-alcoholic beverages are also offered at promotional prices, reducing the authorized blood alcohol concentration (BAC) to 0.5 g/l for drivers and restricting alcohol advertising under the Évin Law. This paper focuses on the Évin Law that was passed in 1991 to protect young people from alcohol advertising [7]. It will first present the history of this law, its content and its development over the last 25 years. It will then examine how effective the law was in 2015 for protecting young people from alcohol advertising through the questions included in the French section of the European School Survey Project on Alcohol

and Other Drugs (ESPAD), from a representative sample of 6642 10th–12th-grade students.

THE ÉVIN LAW AND ALCOHOL: CONTENT, HISTORY, EVOLUTION AND EFFECTIVENESS

Current content

The Évin Law applies to any drinks over 1.2% alcohol by volume and contains three core measures. The first prohibits alcohol advertising through media targeted at young people, but other less intrusive media are allowed. Situations in which alcohol advertising is permitted are set out in the law: adult press, radio (between 12 a.m. and 5 p.m. on weekdays, between midnight and 7 a.m. on Wednesdays), billboards, online (internet and applications, except when young people are targeted and provided that the advertisements are not intrusive), inside points of sale (POSS) (with a maximum sign requirement of 0.35 m² and tastings: e.g. at wine fairs), on leaflets and mailshots, alcohol delivery vehicles, special events (traditional fairs, etc.), wine museums and on objects used for alcohol consumption (e.g. glasses). Any medium not listed in the Évin Law is banned: on television, in cinemas, festivals, cultural and sporting events (sponsoring), etc.

The second measure controls advertising content in authorized situations: product information must only contain factual/informative data and objective qualities (e.g. proof, origin, composition and means of production). Consequently, attractive advertisements with positive, evocative images and/or text associating alcohol with pleasure, glamour, success, sport, sex, opinion leaders, etc. are not allowed.

The third measure requires the health warning 'Alcohol abuse is dangerous for health' to appear on all alcohol advertisements.

History

The history of the Évin Law began in the 1980s, when a few doctors and some non-governmental organizations (NGOs) campaigned against the alcohol advertisements to which children were exposed on television [8]. This led to the passing of the Barzach Law, which came into force on 30 July 1987, that regulated advertisement content, required advertisements to carry a moderation message and set out the media in which the advertisement of alcoholic beverages was banned (television, children's magazines, sport stadiums and sporting events) [9]. Advertisements were authorized in the other media not listed under the law, which meant that the alcohol industry still had many other ways to advertise their products. In a bid to toughen this law, a group of five professors of medicine (Albert Hirsch, Claude Got, Maurice Tubiana, Gérard Dubois and François Grémy, dubbed 'the five wise men'

by the press) got together to rally public opinion and challenge the candidates of the 1988 presidential campaign [10]. They also met with politicians, including Claude Évin, who at the time was the campaign director for François Mitterrand. When Mitterrand was elected in 1988 and Claude Évin appointed Minister for solidarity, health and social protection, the latter called upon 'the five wise men' to draw up a report on alcoholism, tobacco use and road traffic collisions. The report recommended concrete measures, including a total ban of tobacco advertising and a partial ban of alcohol advertising [11]. These proposals met with strong opposition from economic actors, certain ministers (including the adviser to the President of the Republic), parliamentarians and senators with a constituency in wine-producing regions. The main counter-arguments were that there was very little evidence of the link between alcohol advertising and alcohol consumption (the scientific literature on this subject was limited at the time), and countries that had implemented bans had seen an increase in alcohol consumption [12]. The rallying of public opinion and journalists in a bid to overcome government hostility, along with the support of Claude Évin and other ministers, led finally to the adoption of the Évin Law, which was passed in January 1991.

Evolution

Since 1991, this law has been attacked and weakened constantly by active lobbying from alcohol and wine producers and retailers. For example, billboard advertising had been restricted initially to production and sale settings, but was permitted everywhere from 1994 ('zone of production' amendment; [13] p. 38). In 1991, plans to set up a special fund that would use 10% of alcohol advertising expenditure to finance preventative action never materialized. In 2009, the Bachelot Law [14] allowed online alcohol advertising (with the exception of sport websites and websites targeting young people), despite the fact that the internet is the most popular medium among young people, and despite strong opposition from NGOs [15]. In 2015, the Évin Law was weakened once again following intense lobbying from wine producers [16]: alcoholic drinks with a certification of quality and origin, and linked to a production region or to cultural, gastronomic or regional heritage, are no longer subject to the Évin Law's advertising restrictions. This means that producers of drinks with these characteristics (e.g. cider, beer, wine, whisky and vodka) will be able to use media that were previously banned (on television, in cinemas) or restricted (on the radio, in the press, etc.). Arguments for this amendment were based on the difficulty of referring to wine in the press (which, it must be pointed out, was not prohibited under the Évin Law) and the subsequent difficulties encountered in the promotion of

this French product—complications that were damaging to wine tourism, foreign trade and jobs [17]. This provision will come into force with the 2016 Health-Care System Law [18].

Effectiveness of the Évin Law for legally restricting exposure to alcohol advertising

Very few studies have evaluated the effectiveness of the restrictions on exposure to alcohol advertising proposed under the Évin Law. To our knowledge, only Cogordan, Kreft-Jais & Guillemont (2014) have studied the impact on alcohol consumption of social and economic factors (e.g. level of income, employment rate of women) and of different measures introduced in France after 1970 (e.g. a ban on the sale of alcohol to under-16s, advertising restrictions under the Évin Law, the legal limit of 0.5 g/l BAC for drivers) [19]. The authors concluded that compared to social factors, policy measures did not appear to have any significant impact for reducing alcohol consumption. However, the combined impact of the ban on the sale of alcohol to minors and the advertising restrictions under the Évin Law were linked to a decrease in alcoholic beverage consumption over time. Besides this study—which did not analyse the isolated effect of advertising restrictions—there is a lack of research on the effectiveness of the advertising restrictions set out in the Évin Law. To fill this gap, an experimental pool of questions on advertising exposure was included for the first time in the 2015 French European School Survey Project on Alcohol and Other Drugs (ESPAD). The introduction of these questions was prompted by (i) the debate that took place in France in 2015 between health sector actors and the alcohol industry, with the latter attacking the above-mentioned alcohol advertising restrictions, and (ii) research that highlighted a dose–response relationship between exposure to alcohol promotion and the onset of drinking and heavier drinking [20,21].

METHOD

From 1995, the ESPAD survey has been collecting data on substance use among students in over 30 European countries every 4 years [22]. The French ESPAD survey is coordinated by the French Monitoring Centre on Drugs and Addictions (OFDT) and is subject to approval by CNIL, the French data protection authority.

Design and sample

In 2015, French students were interviewed in classrooms by professional investigators from a leading market research company. Students completed a self-reported anonymous questionnaire during a 1-hour session under

the investigator's supervision. A parental consent letter was sent to all parents. A balanced random survey [23] was performed to select 198 schools in France on the basis of education type (senior high school and vocational school), location (rural or urban area) and sector (public or private). Two classes per school were sampled in which all the students were surveyed. To improve the representativeness of the sample and to minimize possible bias related to the proportion of absent students (13%) and non-participating classes (6%), data were re-weighted by margin calibration.

Final results are based on a nationally representative sample of 6642 valid surveys from 10th–12th-graders; 50.6% of respondents were female and the mean age was 17.3 (standard deviation 1.05).

Measures and analysis

The ESPAD survey includes 317 questions on substance use (e.g. prevalence of alcohol, tobacco and illicit substance use) and demographic variables (gender, age, etc.). In addition, the French Alcohol Marketing Exposure Scale (FAMES) was introduced in the 2015 survey to assess whether French adolescents were exposed and receptive to alcohol advertising. Students were asked how often (never/rarely in the year/one or two times per month/at least once a week/almost every day) in the last 12 months, they had seen or heard advertising or other marketing items on alcoholic beverages from the following list: outside billboards, public transport, advertisements or promotions in supermarkets, magazines and newspapers, radio, internet, gifts with an alcohol brand logo, alcohol brands in movies and video games, sport events and concerts. These media were chosen because they are likely to reach young people, be located in different social settings and be listed as authorized/not authorized under the Évin Law. Alcohol advertising on television and in cinemas is totally banned and well controlled by the Conseil supérieur de l'audiovisuel (an authority to protect audiovisual communication freedom) and, as such, these two media were not addressed. Other questions focused on the last advertisement for alcoholic beverages that respondents had seen or heard: recency (less than a week ago/less than a month ago/more than a month ago), perceived target of the advertisement (adults or young people of their age), beverage type/brand recall and persuasiveness (incentive to drink after having seen/heard the advertisement, advertisement attractiveness). The FAMES scale was pre-tested in focus groups on 47 10th-grade students to check question consistency (whether questions were understandable, not misleading, easy to answer, etc.).

Data analysis was carried out using SAS software and consisted in frequency estimates over all categorical variables. The χ^2 test (Rao-Scott chi-square test) was used

Table 1 Percentage of alcohol marketing exposure by gender during the last 12 months in the 2015 French ESPAD.

	Never	Rarely in the year	1 or 2 times per month	At least once a week	Almost every day
Males	4.8	6.0	19.2	36.7	33.3
Females	3.0	7.1	24.6	38.8	26.5
All	3.9 (a)	6.6	21.9 ^a	37.8	29.8 ^a

^aSignificant differences between males and females (*P*-value < 0.05).

to assess differences between gender groups, taking into account the cluster effects (school and class).

RESULTS

Declared exposure

Among respondents, 29.8% said that they had been exposed to alcohol advertisements almost every day during the last 12 months, boys being significantly more exposed (or receptive to exposure) than girls (33.3 versus 26.5%, for overall media) (Table 1). The proportion of students who were non-exposed or quasi-hermetic to advertising was less than 5%, boys more often than girls (4.8 versus 3.0%).

The major places of exposure were supermarkets: 73.2% of students claimed that they had seen advertising or promotions at least once during the last month (one or two times per month, at least once a week, almost every day) (Table 2). They also declared that they were exposed at least once a month through alcohol brand presence in movies (66.1%), magazines and newspapers (59.1%), billboards in streets (54.5%), internet (54.1%), on the radio (49.6%) and billboards on public transport (39.6%) (Table 2). Exposure was also frequent during sporting events or concerts (36.4%) through alcohol brand presence in video games (23.0%) and gifts (16.8%). More

Table 3 Percentage of recency of the last advertisement students have seen or heard in the 2015 French ESPAD.

	Less than a week ago	Less than a month ago	More than 1 month ago
Males	57.4	23.4	19.2
Females	47.2	28.1	24.7
All	52.2 ^a	22.7 ^a	22.1 ^a

^aSignificant differences between males and females (*P*-value < 0.05).

than 10% of students said they were exposed to advertisements almost every day in supermarkets through billboards in streets, on the internet or in magazines and newspapers.

Impact of recent advertising

The last advertising that students recalled dated back to less than a week for half of them (52.2%), less than a month for a quarter (22.7%) and more than a month for the remainder (22.1%) (Table 3). Boys ranked significantly higher than girls for the item 'less than a week ago'.

For advertisement recall, 39.4% of students who had seen advertising during the last 12 months recalled it enough to remember the beverage type (27.8%), the brand (18.2%), felt like having a drink after having seen or heard the advertisement (13%) or found it attractive (19.6%) (Table 4). Boys ranked significantly higher for all impact indicators studied (memory of beverage type, memory of brand, perceived attractiveness of the last advertising seen or heard, incentive to drink after having seen the advertisement). The more recent the advertising, the greater the incentive to drink: students were twice as likely to feel like having a drink after an advertisement that dated back to less than a week ago.

Two out of 10 students (19.4%), females more often than males, considered that the last advertisement they remembered was targeted at people of their age group

Table 2 Percentage of alcohol marketing exposure by settings and media during the last 12 months in the 2015 French ESPAD.

	Never	Rarely in the year	1 or 2 times per month	At least once a week	Almost every day
Supermarkets (advertising or promotion)	10.8	16.0	30.3	29.1	13.8
Billboards in streets	19.9	25.5	24.7	18.2	11.6
Internet	23.6	22.3	24.4	18.4	11.3
Magazines and newspapers	20.0	20.9	28.5	19.8	10.8
Radio	29.8	20.6	21.1	18.7	9.8
Alcohol brand presence in movies	13.6	20.3	34.6	22.5	9.0
Sport events and concerts	39.2	24.4	18.3	11.3	6.8
Billboards on public transport	35.7	24.8	20.6	12.5	6.5
Alcohol brand presence in video games	58.0	19.0	12.4	6.7	3.9
Gifts with a logo of an alcohol brand	55.2	28.0	11.2	4.0	1.6

Table 4 Percentage of recall and perceived effects (attractiveness, incentive) of the last advertisement for alcoholic beverages by gender among adolescents exposed during the last 12 months in the 2015 French ESPAD.

	<i>Males</i>	<i>Females</i>	<i>All</i>
Recalled the last advertisement that they had seen or heard	45.6	33.6	39.4 ^a
Recalled type of drink	34.2	21.8	27.8 ^a
Recalled brand	24.0	12.7	18.2 ^a
Felt like having a drink	15.4	10.8	13.0 ^a
Found the advertisement attractive	23.0	16.3	19.6 ^a
Did not recall	49.9	63.0	56.6 ^a
Did not answer	4.5	3.4	4.0 ^a

^aSignificant differences between males and females (P -value < 0.05).

Table 5 Percentage of target of the last recalled advertisement as perceived by students, by gender in the 2015 French ESPAD.

	<i>Males</i>	<i>Females</i>	<i>All</i>
Adults	34.2	23.6	28.6 ^a
People of your age group	17.6	21.0	19.4 ^a
Don't know	28.0	23.5	25.7 ^a
Don't remember	20.2	31.9	26.3 ^a

^aSignificant differences between males and females (P -value < 0.05).

(Table 5), whereas 28.6% thought that this advertisement addressed adults.

DISCUSSION AND CONCLUSION

Opinion is divided on the Évin Law, and it has been referred to as both a model [24] or an ineffective and under-evaluated measure [25,26]. As other countries (Ireland, Scotland, Estonia) are considering the implementation of a similar law, this paper will provide a useful source of reference for policymakers to determine if it could be considered a good model to follow.

According to the results of the first experimental FAMES survey, we can conclude that there is wide-ranging and frequent exposure to alcohol advertising among the French representative sample of 10th–12th-graders, over all investigated media and particularly for males. Recalled advertisements may also have a persuasive impact in terms of recall, incentive to drink and advertisement attractiveness.

In particular, students felt highly exposed to alcohol advertisements and promotions in supermarkets. This is worrying, as previous research has shown an association between exposure to in-store advertisements and alcohol use [27,28]. As the FAMES scale does not allow different

types of POS advertisements to be identified (shelf edging, display packs and stands, promotional stands, etc.), it is not possible to detail the specific in-store promotions to which young people were exposed and whether or not they are authorized under the Évin law. Future studies should monitor and identify the advertisements used currently in French POSs and examine their impact upon young people. Students also said that they were exposed to alcohol advertisements in public spaces through outside billboards that were banned originally under the 1991 Évin Law. Regarding online, magazine, newspaper and radio advertisements, these are authorized under the law unless they target young people. Our survey reveals that young people are still exposed to these types of media. There are various explanations for this finding. On one hand, young people have access (voluntarily or involuntarily) to adult-orientated media. On the other hand, previous monitoring surveys have concluded that the Évin Law was not always enforced and that some alcohol advertisements were still displayed in youth-targeted media. For instance, advertisements are displayed on music and event websites that are accessed widely by young people (e.g. MinuteBuzz, Deezer and Soonnight) [29]. Online advertising is a decisive exposure point, because young people spend a great deal of time on the internet. In addition, exposure to alcohol advertising on websites and social networks is correlated positively with alcohol-related perceptions and alcohol behaviours in minors [30,31]. FAMES highlighted that students were highly exposed to alcohol brands in movies. This result is consistent with previous studies that reveal a trend in alcohol brand placements in popular US movies that are released internationally [32]. This alcohol brand presence is problematic, as it can influence adolescents' incentive to drink [33,34]. In France, paid-for product placement in movies is not allowed, but enforcement of this restriction is complicated because it is difficult to prove the existence of a commercial contract. Finally, students reported exposure during sport events or concerts, even if official sponsorship is forbidden under the Évin Law.

To summarize, different conclusions can be drawn from all these results. First, had the Évin law not evolved since 1991 and remained closer to its founding principles, young people in France would not have been exposed to outdoor billboard and Internet advertising (authorized in 1994 and 2009, respectively). One way for France to prevent this kind of exposure in the future would be to reinstate the Évin Law as it was in 1991 with regard to outdoor billboards, and to follow the model of Finland with regard to the internet (in 2015 the country issued a statutory ban on digital marketing for alcohol products). Secondly, our survey reveals that restrictions proposed in the Évin Law for magazine and internet site headlines (alcohol advertisements authorized in the adult press or on internet sites) or the use of 'safe harbour' hours on the radio are not

effective measures to protect young people as they are still exposed to alcohol advertisements in these media. To prevent this exposure, it is recommended to ban access to these media completely (as Finland did for the internet) or to strengthen controls in France to ensure that these restrictions are enforced [29].

Although our findings are interesting, certain limitations need to be considered. First, FAMES is an exploratory scale, and even though it had been pre-tested it needs to be improved for future surveys (for instance, the question on POS advertisements should be more detailed). Secondly, exposure was measured only through declarative responses. Future surveys should be combined with the monitoring of alcohol advertisements to examine their presence objectively in the students' environment. Thirdly, as it is very likely that young people's advertisement exposure and receptiveness vary according to their own prior experience with alcohol, it would be worthwhile exploring this relationship in more depth. Finally, it must be noted that FAMES was implemented only once as a baseline and only in France in 2015. Future surveys need to be conducted in France to compare the effectiveness of the Évin law after the changes adopted in 2016 [18]. Questions on advertising exposure and receptivity could also be extended to future surveys in other countries to compare exposure in areas with more or less marketing restrictions.

Despite these limitations, our paper highlights that French students declare significant exposure to alcohol advertisements in 2015. However, this does not mean that the Évin Law is useless and ineffective.

First, the 1991 version of the Évin Law would clearly have been more effective than the 2015 version for protecting young people from exposure to advertisements. If countries want to learn from the French experience, they would be advised to base their future policies on the 1991 version of the law. They must also be prepared to counteract lobbying from the alcohol industry aimed at weakening alcohol control policies and marketing regulations [35–37].

Secondly, the Évin Law has been often flouted [38]. Since 1991, legal procedures have regularly condemned illegal alcohol advertisements: until 2015, the French NGO ANPAA (Association nationale de prévention en alcoologie et addictologie/National Association for the Prevention of Alcoholism and Addiction) won more than 80% of its 60 prosecutions brought to court. Therefore, it is recommended that countries develop controls and monitoring measures to ensure that advertising restrictions are respected.

Thirdly, until 2015, the Évin Law protected young people from alcohol advertisements on television and in cinemas. For example, under the law it was impossible for an American brand of beer to sponsor the 1998 Football

World Cup in France [39], no alcohol advertisements were broadcast on French television channels during the 2014 Football World Cup and no alcohol advertisements appeared in cinemas, thereby protecting minors from exposure to such advertisements. The evolution of the Law in 2016 means that alcohol promotion can be seen once again on French television screens, and this is a cause of concern [40].

Fourthly, due to the content regulation of the Évin Law, young people are less exposed to attractive advertisements associated with personal, sexual and social success [39].

Fifthly, a law is better than industry self-regulation or voluntary pledges that have turned out to be either not respected or ineffective [41–43].

Finally, laws such as the Évin Law are easy to apply and provide an inexpensive option for governments [44].

Declaration of interests

None.

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Vulnerability to alcohol-related problems: a policy brief with implications for the regulation of alcohol marketing

Thomas F. Babor, Katherine Robaina, Jonathan K. Noel & E. Bruce Ritson

Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington, CT 06030, USA

ABSTRACT

Background and Aims The concern that alcohol advertising can have detrimental effects on vulnerable viewers has prompted the development of codes of responsible advertising practices. This paper evaluates critically the concept of vulnerability as it applies to (1) susceptibility to alcohol-related harm and (2) susceptibility to the effects of marketing, and describes its implications for the regulation of alcohol marketing. **Method** We describe the findings of key published studies, review papers and expert reports to determine whether these two types of vulnerability apply to population groups defined by (1) age and developmental history; (2) personality characteristics; (3) family history of alcoholism; (4) female sex and pregnancy risk; and (5) history of alcohol dependence and recovery status. **Results** Developmental theory and research suggest that groups defined by younger age, incomplete neurocognitive development and a history of alcohol dependence may be particularly vulnerable because of the disproportionate harm they experience from alcohol and their increased susceptibility to alcohol marketing. Children may be more susceptible to media imagery because they do not have the ability to compensate for biases in advertising portrayals and glamorized media imagery. **Conclusion** Young people and people with a history of alcohol dependence appear to be especially vulnerable to alcohol marketing, warranting the development of new content and exposure guidelines focused on protecting those groups to improve current self-regulation codes promoted by the alcohol industry. If adequate protections cannot be implemented through this mechanism, statutory regulations should be considered.

Keywords Adolescents, advertising, alcohol, children, cue-reactivity, marketing, regulation, sex and gender, vulnerability.

Correspondence to: Thomas F. Babor, Department of Community Medicine and Health Care, UConn School of Medicine, 263 Farmington Avenue, MC 6325, Farmington, CT 06030-6325, USA. E-mail: babor@uchc.edu

INTRODUCTION

From a public health perspective, vulnerability denotes susceptibility to poor health or illness, which can be manifested through physical, mental and social health outcomes. Although definitions of vulnerability vary [1,2], for the purposes of this review, two forms of vulnerability are considered: (1) susceptibility to alcohol-related harm and (2) susceptibility to the effects of marketing.

Age and pregnancy status are recognized in the responsible marketing codes adopted by the alcohol and marketing industries as vulnerability characteristics. Some self-regulated alcohol marketing codes, for example, prohibit the use of actors who are or appear to be under the legal purchase age, presumably to protect youth from exposure to role models of the same age. Similarly, some codes prohibit the depiction of pregnant women.

Increased vulnerability to the harmful effects of alcohol and alcohol marketing may also be defined by a variety of

personal attributes and individual difference factors, such as a family history of alcohol dependence, certain personality characteristics and disorders as well as psychiatric syndromes such as alcohol dependence, which may make former drinkers more likely to experience alcohol craving in response to alcohol marketing.

In addition to being vulnerable to the effects of alcohol, some populations (e.g. children) may be especially vulnerable to the effects of alcohol marketing (e.g. [3]). For example, young children may be more susceptible to media imagery because they do not have the ability to compensate for biases in advertising portrayals and glamorized media imagery. For this reason, child advocates [4] and business ethicists [1] question the ethics of marketing practices targeted to children because it is considered unfair to take advantage of groups who cannot defend themselves.

The purpose of this paper is to evaluate critically the concept of vulnerability as it applies to the marketing of alcohol products to populations defined by five types of

personal and social characteristics: (1) age and developmental history; (2) personality characteristics; (3) family history of alcoholism; (4) female sex and pregnancy risk; and (5) drinking history and alcohol dependence.

AGE AND DEVELOPMENTAL HISTORY

Children and adolescents satisfy both criteria for a vulnerable population. Evidence shows that the architecture of the brain changes significantly and predictably during adolescence. During childhood, the volume of gray matter in the cortex increases and then declines, with the maximum gray matter volume occurring during early adolescence [5]. The decline in the volume of grey matter is accompanied by a flourish of axonal growth and refinement of cortical connections. Superfluous neurons are pruned and the structure of the adult brain gradually takes shape. This winnowing of neurons is influenced by, among other factors, the adolescent's interactions with and experiences in the outside world.

Behavioral controls, judgement and the capacity to postpone gratification do not develop fully until the grey matter of the prefrontal cortex and its connections are well established, which is completed in the mid-20s [6]. This process contrasts with the development of the limbic system, which occurs at a much earlier age. It has been hypothesized that risky impulsive behaviors result from the dissociation in development between the limbic system and the prefrontal cortex, rendering adolescents particularly prone to risky behavior such as binge drinking [7]. This may explain why alcohol-related risky behavior resulting in injury, accidents, crime and harm to others is common at this age.

Brain structures subserving socio-emotional processing are very prominent at this time, and may constitute targets for advertising, especially on social media, that emphasize bonding with friends and identification with a particular product. In late adolescence the adolescent boy or girl becomes acutely self-aware, and the judgement of peers and 'fitting in' are paramount. Because of this, alcohol may fit into the social awareness paradigm, which confers adaptive benefits as well as hazards [8].

Cross-sectional studies have shown that there are significant differences in the brain structure and function of adolescents who drink heavily and those who do not [9]. Although the dilemma of cause and effect has yet to be clarified fully, overall, heavy drinking during adolescence has been associated with lower cognitive ability and abnormal brain development. Alcohol also appears to affect the ability of young people to control their emotions and behaviors, which could lead to long-term academic, occupational and social functioning problems. Early onset of very heavy drinking is thought to increase the likelihood of developing alcohol disorders later in life, due potentially

to lasting effects on brain function [7]. Although more research is needed in this area, the existing evidence is sufficient to raise serious concern [10].

Developmental theory and research suggest strongly that young children may be more susceptible to media imagery because they do not have the ability to compensate for biases in advertising portrayals and glamorized media imagery (e.g. [3]). This view is supported by research showing that prior to the age of 8 years most children do not possess the necessary cognitive skills to differentiate commercial advertising from other sources of information [11,12]. Even older children and adolescents who understand the purpose of advertising may not act regularly on that knowledge because they lack the ability to weigh long-term health consequences of alcohol consumption against short-term rewards [13].

Specific to alcohol, a study examining adolescents' age perceptions of characters in several beer commercials [14] found that 40% of respondents perceived at least one underage person in the advertisements; 19% of the rated commercials contained characters perceived to be underage users or intended users of alcohol, and younger adolescents were more inclined to perceive underage characters as users of the product. In a reciprocal relationship, young people who have initiated alcohol use earlier than their peers may be more vulnerable to the effects of alcohol marketing. One study found that underage drinkers tend to be more adept than same-age non-drinkers at recognizing and identifying alcohol product brand imagery in television advertisements [15], and a separate study determined that young adults (aged 18–21 years) who drink heavily perceive heavier drinking by characters portrayed in alcohol advertisements and are less likely to label this drinking as excessive [16].

PERSONALITY CHARACTERISTICS AND OTHER INDIVIDUAL DIFFERENCE FACTORS

Personality disorders (e.g. attention deficit hyperactivity disorder and conduct disorder) and personality traits such as sensation-seeking and impulsiveness have been linked to early onset of drinking and progression to alcohol dependence [17]. There is also evidence of an association between high reward sensitivity and hazardous drinking [18,19]. Several of these personality characteristics, particularly sensation-seeking, have been implicated in a variety of other problem behaviors, such as illicit drug use, risky driving, driving while intoxicated and high-risk sexual activity.

Such individuals may be particularly susceptible to role models who exhibit deviant behaviors, portrayed sometimes in alcohol advertisements as well as movies that contain alcohol product placements. Despite the consistent

association of these characteristics with early onset of drinking and with later alcohol abuse (e.g. [20]), it is not possible at this time to specify the nature of the vulnerability with sufficient diagnostic accuracy to include it as a target of marketing controls.

FAMILY HISTORY OF ALCOHOL DEPENDENCE

Adult children of alcoholics meet one of the proposed criteria of a vulnerable population. They are uniquely susceptible to alcohol use. Parental problem drinking is a significant health risk to children and adolescents [21]. Children of parents who drink excessively are more likely to have substance use disorders, engage in criminal behavior and have severe psychiatric disorders, including suicidal ideation, depression and psychological disturbances. In addition to genetics, parental modeling has been identified as a primary mechanism that increases the risk of early-onset adolescent drinking in children whose parents display heavy alcohol consumption patterns [22]. In a longitudinal study that followed children from 1st to 8th grade, parental alcohol use was a significant risk factor for a female child's intention to drink [23].

A longitudinal study on the intergenerational transmission of alcoholism found that the effect of higher levels of maternal drinking and current paternal alcohol use disorders on childhood onset of drinking was mediated by disclosure of negative alcohol experiences [24]. That is, greater disclosures were associated with earlier alcohol initiation among children. Moreover, positive and negative alcohol expectancies in children are influenced by parental alcohol expectancies, with adoption of expectancies apparent by age 12 [25].

There is insufficient evidence to suggest that adult children of alcoholics either are or are not vulnerable to alcohol marketing. One study found no differences in perceptions between participants who did and who did not have a family history of alcohol problems [16]. No other studies were located on this topic.

WOMEN AT RISK FOR AN ALCOHOL-EXPOSED PREGNANCY

A woman is at risk for an alcohol-exposed pregnancy (AEP) if, in the last month, she (1) drank alcohol; (2) had vaginal intercourse with a male; and (3) did not use contraception [26]. Current research is insufficient to determine if these women should be considered a vulnerable population. There are two primary health concerns regarding alcohol use in this population. First, harm to the woman must be taken into consideration. Women typically have increased vulnerability to alcohol-related harm because of lower body weight, smaller liver capacity

to metabolize alcohol and a higher proportion of body fat [27]. A recent meta-analysis that included 23 prospective studies of nearly 500 000 participants concluded that moderate and heavy drinking women may have an increased risk of mortality compared to moderate and heavy drinking men [28], while the risk of liver cirrhosis was higher among women compared to men with the same level of alcohol consumption in a separate meta-analysis [29]. Alcohol use is also a risk factor for breast cancer, with some studies showing risk beginning at one to two drinks per day [30–32].

Secondly, alcohol consumption during pregnancy must be considered. Women who drink while pregnant risk giving birth to a child with physical, learning and behavioral problems, including fetal alcohol spectrum disorder (FASD) [33–39]. Alcohol can disrupt fetal development at any stage of pregnancy, including the early stages before a woman may know she is pregnant. Studies confining exposure to early gestation have concluded that facial malformations representative of FASD result from ethanol exposure during the embryonic period, specifically the first 3–8 weeks of gestation [40]. Other studies have documented decreased height (length) and weight that persist into young adulthood [41], increased rates of spontaneous abortion [42], increased craniofacial abnormalities [43,44], psychiatric disorders as young adults [34] and neurobehavioral deficits [45–49]. Although studies focusing on low to moderate alcohol consumption during pregnancy have shown inconsistent results [50], the public health and medical community generally recommends that women abstain from drinking alcohol during pregnancy.

High rates of alcohol use during pregnancy have been reported in the United States (17.9%), the Russian Federation (51.9%) and Barcelona, Spain (45%), with binge drinking rates of 2.7 and 20.2% reported in the United States and Russian Federation, respectively [51–53]. In the Western Cape of South Africa, 43% of women reported alcohol consumption during pregnancy [54] and rates of FAS documented in one such community are the highest in the world: 65.2–74.2 per 1000 children in the first-grade population [55]. An analysis of 865 meconium samples from pregnant women in Uruguay revealed that 47.3% were positive for alcohol, while only 35% disclosed drinking while pregnant [56]. These findings suggest that many pregnant women are not following medical advice not to consume alcohol during pregnancy, if they receive any advice at all.

The issue is compounded further by high rates of unintended pregnancies, during which a woman may expose her developing fetus to alcohol unintentionally before recognition of pregnancy. Using multiple data sources to estimate the incidence of all live births, abortions and miscarriages for all major geographic regions, a study by

Sedgh, Singh & Hussain [57] found that 85 million of the 213 million pregnancies (40%) that occurred world-wide in 2012 were unintended. In Latin America and the Caribbean, the rate was 56%. While 42% of unintended pregnancies in Latin America and the Caribbean end in induced abortion, and 39% in North America, more than a quarter of all live births are from unintended pregnancies.

Little research has been conducted to determine if women, particularly those at risk for an AEP, are susceptible to alcohol marketing. In a study of US college students, women perceived greater alcohol consumption by the main characters in three of five alcohol advertisements viewed [16]. A study utilizing street interviews determined that men and women describe beer, wine and spirits in different ways [58]. However, the first study did not link gender with other behavior patterns and the second study did not attempt to show that different perceptions of alcohol marketing indicates susceptibility to the marketing message. Therefore, while alcohol consumption poses significant risks to a fetus and may pose increased risk to women, it is premature to consider this subset of women vulnerable in terms of alcohol marketing messages.

HISTORY OF HEAVY DRINKING AND SUSCEPTIBILITY TO RELAPSE IN RECOVERING ALCOHOLICS

Evidence supports defining alcoholics and other heavy drinkers as a vulnerable population. Long-term excessive use of alcohol has been linked to liver disease, heart disease, cancer, learning and memory problems, mental health problems and social problems [59]. The World Health Organization estimates that more than 3 million deaths per year globally are attributable to the harmful use of alcohol [60].

Some studies have shown that heavy or problem drinkers respond differently in response to alcohol cues than light or social drinkers on measures of psychophysiology [61,62], attentional bias [63,64], cognitive processing [65], urges to drink [19,66] and positive affect [63,67]. In one experiment, 'moderate social drinkers' exposed to alcohol advertisements in magazines showed increases in skin conductance to a significantly greater extent than did 'light social drinkers' [68].

Alcohol-related images in cue-reactivity studies have been found to increase craving or urges to drink in heavy alcohol users compared to 'neutral' or control cues [69,70,66,67,71]. This may occur because heavy alcohol users are subject to attentional biases [72]. Individuals whose goal is to consume alcohol are easily distracted by alcohol-related stimuli and will either dismiss or pay significantly less attention to non-alcohol-related cues. The degree of attentional bias an individual exhibits is associated positively with drinking status, with heavy drinkers

having significantly greater biases than non-drinkers or social drinkers, and there is evidence to suggest that attentional bias plays a causal role in triggering alcohol use in relapse and in maintaining alcohol dependence [73–75]. Moreover, craving and alcohol-related attentional bias may create a positive feedback loop whereby alcohol-related stimuli become more salient as cravings increase and cravings increase as greater attention is paid to alcohol-related stimuli [73].

Using functional neuroimaging as a tool to understand reactivity to alcohol-related cues, a meta-analysis identified greater neural activation after exposure to alcohol-related stimuli in heavy alcohol users in the ventral striatum and ventral anterior cingulate cortex [76]. Activity in the ventral striatum was correlated positively with severity of dependence, amount of drinking, impaired control and magnitude of craving. In another study [77], teenagers with alcohol use disorders showed greater brain activation to pictures of alcoholic beverages than control youths, predominantly in areas linked to reward, desire and positive affect. The degree of brain response was highest in youths who reported greater desire to drink and who consumed alcohol more frequently.

Importantly, cue-reactivity is predictive of alcohol consumption and relapse after treatment in alcoholics [78]. For example, participants in an alcohol treatment program who exhibited increased cue-elicited alcohol craving had higher odds of relapse [79], and among alcoholics undergoing in-patient treatment 8–10% of the variance in alcohol consumption after discharge was explained by the desire to drink after cue-reactivity sessions [80].

IMPLICATIONS FOR THE REGULATION OF ALCOHOL MARKETING

What moral responsibilities do marketers of alcoholic beverages have when they consider marketing to vulnerable groups? Do both types of vulnerability need to be present for protection to be afforded, or would the first type be a sufficient criterion? These are some of the questions this essay has attempted to answer. Table 1 provides a box score summary to the evidence for two types of vulnerability in five groups of drinkers. The table indicates that both types of vulnerability are present in at least two groups.

The risks of alcohol consumption in young people are well recognized and are reflected in various forms of 'permitted age' legislation around the world, including regulations and industry self-regulations on exposure of children and adolescents to alcohol marketing. It is now clear that these prohibitions are based soundly on a demonstrable biological vulnerability that shows that the brain is not biologically mature until early adult life.

Many cultures have established laws about the age at which young people are permitted to drink or be served

Table 1 Evidence for two types of vulnerability in five groups of drinkers.

	<i>Susceptibility to alcohol-related harm</i>	<i>Susceptibility to the effects of marketing</i>
Children and adolescents	x	x
Individuals with sensation-seeking and impulsiveness traits	x	?
Adult children of alcoholics	x	
Women at risk for an alcohol exposed pregnancy	x	
Alcoholics and other heavy drinkers	x	x

alcohol. This shows that society has been aware of the dangers attendant on adolescent drinking both to the drinker and to public order. Vulnerability is well recognized, but the biological underpinning of this conventional wisdom adds another dimension to our appreciation of the risks and shows that the brain itself matures later than has been commonly thought. The brain evolves throughout adolescence and into early adult life. The impulsiveness and risk-taking evident in many adolescents, coupled with the relatively late development of critical faculties, has a neurochemical substrate. The architecture and activity of the brain are very malleable over these years, and alcohol can impair successful maturation. This makes the young person uniquely vulnerable to the blandishments of marketing in all its forms. An additional reason for restraint is that the psychoactive effects of alcohol on the immature brain are particularly potent, with damaging consequences to self and others.

Social learning theory [81] provides insights into the link between advertising, purchase behavior, onset of drinking and heavy drinking. In addition to social modeling of drinking behavior and the frequent association of social reinforcement with drinking, learned alcohol expectancies are another factor thought to mediate the relationship between vulnerability factors, alcohol marketing and alcohol-related problems. These expectations have been found to affect the early onset of drinking, behavior during intoxication and the development of alcohol abuse [82]. Other evidence indicates that marketing can affect young people's alcohol expectancies in a way that facilitates positive and negative affect regulation [83].

Beyond groups defined by age and developmental history, one other group—alcoholics—may be particularly vulnerable because of the disproportionate harm they experience from alcohol and their increased susceptibility to alcohol marketing. This group meets the two proposed criteria that define vulnerability for marketing purposes, thereby warranting an expanded definition of vulnerability as it applies to alcohol marketing.

More research is needed to expand the definition to women at risk of an AEP, adult children of alcoholics or other populations based on psychological characteristics. For example, extensive research demonstrates the dangers of alcohol consumption during pregnancy, which was

reiterated in a 1981 US Surgeon General's advisory urging women who are pregnant or who might become pregnant to abstain from alcohol use, and by the US Secretary of Health and Human Services [84], the Centers for Disease Control and the Substance Abuse and Mental Health Services Administration (SAMHSA) [51]. However, there is insufficient evidence to suggest that women who may become pregnant are uniquely susceptible to alcohol marketing, even though non-pregnant women of child-bearing age may benefit from the same protections provided to pregnant women regarding alcohol advertising.

Additional research should include observational and experimental studies. Similar to existing studies on the effects of alcohol marketing exposure, longitudinal cohort studies of youth and adults that are designed specifically to identify vulnerable and potentially vulnerable populations can determine if changes in alcohol consumption and alcohol-related consequences due to marketing exposures are greater in these populations. New experimental research can parallel the cue-exposure research performed on populations of alcoholics and heavy alcohol users. For example, trials can be implemented to determine if vulnerable or potentially vulnerable populations have greater alcohol cravings after exposure to alcohol marketing and if these populations show attentional bias towards such materials.

The populations discussed in this paper are not insignificant. World-wide, 16.0% of the 15+ population were heavy episodic drinkers in 2010 [60]. Historically, one in eight Americans were children of alcoholics [85], and recent evidence suggests that 20% of the Swedish populations have parents with alcohol problems [86]. Moreover, approximately 2 million women in the United States are at risk for an alcohol-exposed pregnancy [26].

In conclusion, this review suggests that new content and exposure guidelines should be drafted to improve current self-regulation codes by expanding them to vulnerable groups of adults. To the extent that both theory and empirical research suggest that populations defined by age and developmental history may be particularly susceptible to alcohol marketing, there are ample grounds for strengthening the protections used in many countries that limit exposure to potentially harmful marketing content, especially in light of evidence showing that industry self-regulation measures

are ineffective in protecting age vulnerable groups from exposure to potentially harmful content [87]. If adequate protections cannot be implemented through this mechanism, then statutory regulation should be considered.

Declaration of interests

None.

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International codes and agreements to restrict the promotion of harmful products can hold lessons for the control of alcohol marketing

Jane Landon¹, Tim Lobstein², Fiona Godfrey³, Paula Johns⁴, Chris Brookes¹ & David Jernigan⁵

UK Health Forum, London, UK,¹ Public Health Advocacy, Institute of Western Australia, Shenton Park, WA, Australia,² European Association for the Study of the Liver, Brussels, Belgium,³ Alliance for the Control of Tobacco Use, Rio de Janeiro, Brazil⁴ and Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA⁵

ABSTRACT

Background and aims The 2011 UN Summit on Non-Communicable Disease failed to call for global action on alcohol marketing despite calls in the World Health Organization (WHO) Global Action Plan on Non-Communicable Diseases 2013–20 to restrict or ban alcohol advertising. In this paper we ask what it might take to match the global approach to tobacco enshrined in the Framework Convention on Tobacco Control (FCTC), and suggest that public health advocates can learn from the development of the FCTC and the Code of Marketing on infant formula milks and the recent recommendations on restricting food marketing to children. **Methods** Narrative review of qualitative accounts of the processes that created and monitor existing codes and treaties to restrict the marketing of consumer products, specifically breast milk substitutes, unhealthy foods and tobacco. **Findings** The development of treaties and codes for market restrictions include: (i) evidence of a public health crisis; (ii) the cost of inaction; (iii) civil society advocacy; (iv) the building of capacity; (v) the management of conflicting interests in policy development; and (vi) the need to consider monitoring and accountability to ensure compliance. **Conclusion** International public health treaties and codes provide an umbrella under which national governments can strengthen their own legislation, assisted by technical support from international agencies and non-governmental organizations. Three examples of international agreements, those for breast milk substitutes, unhealthy foods and tobacco, can provide lessons for the public health community to make progress on alcohol controls. Lessons include stronger alliances of advocates and health professionals and better tools and capacity to monitor and report current marketing practices and trends.

Keywords Alcohol, codes, global, international, marketing, policy, treaties.

Correspondence to: Jane Landon, UK Health Forum, Fleetbank House, 2–6 Salisbury Square, London EC4Y 8JX, UK.

E-mail: jane.landon@ukhealthforum.org.uk

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INTRODUCTION

The World Health Organization's Global Action Plan for the Prevention and Control of Non-Communicable Diseases (NCDs) 2013–2020 calls on Member States to achieve 'at least 10% relative reduction in the harmful use of alcohol, as appropriate, within the national context' [1]. It identifies the restriction or banning of alcohol advertising and promotion among the 'best buys', i.e. cost-effective, high-impact and feasible interventions.

Recognizing that controls on alcohol promotion are a challenge for national governments which they may not be able to address alone, public health advocates have called for restrictions on alcohol marketing at international

or global level. A code of practice on alcohol control has been proposed by Taylor & Dhillon [2], although there are differing opinions about whether a non-binding code or a binding treaty such as the WHO Framework Convention on Tobacco Control (FCTC) is needed [3]. Voluntary measures by the alcohol industry are examined in other papers and found to be largely ineffective [4–6].

In this paper we look at the codes and treaties to restrict marketing of products which might be deemed equivalent to the restrictions needed for alcohol, focusing on the FCTC [7], the joint WHO–United Nations Children's Fund (UNICEF) International Code of Marketing of Breastmilk Substitutes (the Code, which should be read in conjunction with subsequent Resolutions of the World Health

Assembly) [8], and the WHO set of Recommendations on the Marketing of Foods and Non-Alcoholic Beverages to Children (the Recommendations) [9]. The lessons they hold for the international control of alcohol marketing are discussed in terms of the key determinants that led to the development of these treaties and codes and their implications for alcohol policy setting and accountability.

THE WHO FRAMEWORK CONVENTION ON TOBACCO CONTROL

The FCTC entered into force in 2005 as the first and only treaty to be negotiated under the World Health Organization, and it is acknowledged as the most powerful tool that the international community has developed to date for tobacco control [10]. The FCTC set a floor for government action in tobacco control, with signatories committed to strategies for reducing supply as well as demand for tobacco products. In addition to price and tax measures, it included controls on advertising, marketing and sponsorship and reducing the physical availability of tobacco products.

The FCTC followed increasing recognition of the high costs to human health and national productivity resulting from tobacco use: the WHO estimated in 1999 that at least 3.5 million lives were being lost annually, a figure predicted to rise to 10 million by 2030, with 70% of deaths occurring in developing countries. In the same year the World Bank estimated that by 2030 some 500 million people would have been killed by tobacco, half of them in productive middle life. It also showed that tobacco control measures were cost-effective and that concerns they would reduce tax revenues, decrease employment and impoverish smokers were unfounded [11]. The increasing opportunity for an international convention led to the development of the Framework Convention Alliance, a global network of non-governmental organizations working on aspects of tobacco control. The Alliance was one of the principal non-state actors in the process, indicating the important role of civil society in policymaking (and recognized in the text of the FCTC).

The process of negotiation and capacity building was supported financially and cost £34 million, excluding WHO staff and secondments [2]. Resources were made available to the WHO Tobacco Free Initiative from the United Nations Foundation and the United Nations Fund for International Partnerships, used primarily for capacity building for non-governmental organizations [12].

THE INTERNATIONAL CODE OF MARKETING OF BREASTMILK SUBSTITUTES

The Code was adopted in 1981 and, along with subsequent World Health Assembly Resolutions, aims to 'contribute to the provision of safe and adequate nutrition for infants, by

the protection and promotion of breastfeeding and by the proper use of breast milk substitutes, when these are necessary, on the basis of adequate information and through appropriate marketing and distribution' (Article 1) [8]. The Code is non-binding and is intended for implementation by governments (in national legislation) and by companies (in policies and practices). Measures in the Code include restrictions on product labelling, display, special offers, contacts with mothers and gifts to professionals.

The decision to draft a Code in 1979 followed a series of reports, inquiries and world-wide consumer boycotts, highlighting the practices of infant formula companies marketing their products in areas without access to clean water and with low levels of literacy, and the consequent toll of infant deaths and disease. A US Senate Subcommittee on Health and Scientific Research, under Senator Edward Kennedy, proposed in 1978 an International Code to regulate the marketing of commercial infant feeding products—a decision which triggered the WHO/UNICEF drafting process. Various estimates have been made in different countries for the costs and consequences of falling rates of breastfeeding and in some cases to put a value on human breast milk as a natural resource. In 2001, the US Department of Agriculture calculated that if breastfeeding in the United States reached the US Surgeon General's targets of 75% at birth and 50% at 6 months, cost savings of treatment for three childhood illnesses alone would reach US\$3.6 billion [13].

The International Baby Food Action Network (IBFAN), an international network of activists, played a central role in the Code negotiations, and continues to monitor the implementation of the Code into national legislation and to publish reports on violations of Code by leading producers. Code drafting involved consultation between governments, infant feeding experts, the baby food industry and non-governmental organizations. According to the breastfeeding counsellor and campaigner, Gabrielle Palmer [14], WHO and UNICEF 'fell into the role of mediators between the pressure groups and the baby food industry, rather than defenders of infant and young child health' (p. 257). Palmer suggests that this reflected the sensitivity of WHO to possible pressure from the US government in particular, which was motivated to protect business interests. The subsequent shift of the US from initiating to rejecting the Code 'brought to light the corporate/political fusion of US politics' (p. 258).

THE WHO SET OF RECOMMENDATIONS ON THE MARKETING OF FOOD AND NON-ALCOHOLIC BEVERAGES TO CHILDREN

Following increasing recognition of the links between unhealthy dietary patterns and rising levels of non-

communicable disease [15–17] and their costs [18] the WHO 2004 Global Strategy on Diet, Physical Activity and Health [19] included a recommendation that the private sector should ‘practise responsible marketing... particularly with regard to the promotion and marketing of foods high in saturated fats, trans-fatty acids, free sugars, or salt, especially to children’ (p. 14). In 2007, under President George W. Bush, the US delegation to the World Health Assembly’s Executive Board would only support unspecific action ‘to improve marketing, including voluntary changes in promotional practices’ [20] but in 2010 a much more supportive endorsement of marketing controls was made by the US delegate who stated explicitly that this was a priority for her Government, and ‘in particular for the First Lady, who has raised awareness of childhood obesity and the importance of healthy eating’ [21].

Adopted by the World Health Assembly in 2010, the set of Recommendations on the Marketing of Foods and Non-Alcoholic Beverages to Children [6] were drafted following extensive consultation with health advocates and industry stakeholders. In the World Health Assembly Resolution adopting the set of Recommendations, Member States were urged to ‘identify the most suitable policy approach given national circumstances and develop new and/or strengthen existing policies...’ [22]. No specific measures were defined, apart from restricting marketing ‘where children gather’. The WHO Director-General was asked to provide technical support to Member States, leading in 2012 to a non-binding Framework for implementing the Recommendations [23] giving guidance on how to define the terms and scope of a policy and the roles of stakeholders, with key principles for effective monitoring, evaluation and enforcement mechanisms. Private sector parties are included specifically as ‘stakeholders’. Although the Framework states the need to ‘protect the public interest and avoid any conflict of interest’, it does not say how this should be ensured.

LESSONS FOR PUBLIC HEALTH ADVOCACY

Policy initiation

The descriptions above highlight the importance of a body of evidence indicating a significant health burden and economic costs associated with the marketing of specific products. Pressure to take action can stem from civil society, and especially from networks of advocates and health professionals, and may then be championed by political actors—which may be especially potent if the champions are from the United States, as has been the case with Senator Edward Kennedy and First Lady Michelle Obama. However, the networks of advocates and professionals provide the underlying capacity for action, including both policy

drafting and subsequent monitoring of policy implementation.

Policy development

Taylor and others have commented how the process of negotiating the FCTC itself stimulated global coordination and accelerated national policy change [24]. Wipfli *et al.* [25] suggest that the increase in domestic policy adoption is similar to other processes of ‘rapid diffusion’ such as those found in environmental policy. Wipfli *et al.* [26] demonstrated the important role of tobacco control networks such as GLOBALink, showing that membership of these networks—alongside national income level—was the most significant determinant of early FCTC ratification. Not only was network membership related to the number of policies adopted, but also how closely these policies incorporated public health best practices.

Using quantitative evaluations of treaties on trade, finance, human rights, conflict and the environment, Hoffman & Röttingen [27] suggest that international treaties are most successful in achieving economic objectives and least successful in realizing social goals, but that new global health treaties could be effective if they incorporate (a) incentives for those with power to act on them, (b) institutional mechanisms designed specifically to bring edicts into effect and (c) the engagement of strong coalitions of interests advocating for the adoption and implementation of measures.

Role of industry

A distinctive feature of the FCTC is the exclusion of the tobacco industry from any interaction with public health policymakers, researchers and practitioners under Article 5.3, which states that the ‘parties should interact with the tobacco industry only when and to the extent strictly necessary to enable them to effectively regulate the tobacco industry and tobacco products’ [28]. The acknowledged importance of preventing the tobacco industry from influencing the negotiation of the FCTC was a consequence of the accumulating evidence that tobacco companies had, for a long time, sought to conceal what they knew about the harmful effects of smoking, and were actively pursuing strategies to ‘discredit and impede’ tobacco control activities at WHO [29].

The exclusion of industry interests in the formation of the FCTC marks a striking difference in approach to tobacco compared to infant feeding, food and alcohol products by the WHO, where engagement with companies is accepted as necessary for policy development. Gilmore & Fooks [30], commenting on the involvement of alcohol companies in financing the Global Fund for AIDS, tuberculosis and malaria, point to evidence ‘that suggests tobacco

and alcohol companies... use remarkably similar strategies in their efforts both to market their products and prevent and delay effective public health policies, in some instances working collectively to this end' (p. 71). In a systematic review of alcohol industry efforts to influence policy debates concerning marketing regulations, new specific marketing policies or broad alcohol policy which included marketing regulations, Savell *et al.* conclude that there are considerable commonalities between tobacco and alcohol industry political activity [31].

Self-regulation

For regulating the marketing of food and beverages to children at national level, governments have shown a preference for industry self-regulation or industry co-regulation overseen by a government-approved body [32], despite concerns over the lack of evidence for the effectiveness of these approaches [33]. In all the cases studied, the anticipation or threat of regulatory controls on marketing led to pre-emptive proposals from the industry peak bodies: the tobacco industry offered voluntary or self-regulatory schemes in the face of local state-proposed regulation [34] and in response to the FCTC [35]; the baby food companies reinterpreted the Code with their own version which did not contain all the elements of the original [36]; and food companies have offered national, regional and global pledges to restrict their marketing to children voluntarily [37] or through co-regulatory approaches (e.g. in the United Kingdom, Spain and Denmark).

Monitoring

International instruments are a potentially important means to strengthen monitoring of national regulation and surveillance of corporate practices. Article 21 of the FCTC requires Parties to submit periodic reports on implementation to the Conference of Parties. This obligation was supported by the creation in 2006 of a permanent Convention Secretariat within WHO, located in Geneva. Monitoring of the Code on Marketing of Breastmilk Substitutes has not enjoyed the same commitment of resources. What is known today about the extent of regulation and company practices is primarily from civil society reporting activity. From 1985, the IBEAN Code Documentation Centre (ICDC) has produced a series of reports on country implementation and company infringements. Within the Director-General's regular biennial report, WHO includes information on the status of compliance with the Code, based on reports received from Member States. According to a founder of IBEAN, Annelies Allain [38] this mechanism of WHO reporting has been inadequate and ineffective: 'The reports have failed to explain which governments have adopted laws, what kind of laws they

are and whether all provisions of the Code are included' (p. 29). Civil society has also provided capacity building: since 1991, the ICDC has run a training programme for governments to assist them in translating the Code into national legislation.

Several frameworks have been suggested for food and beverage accountability. The Access to Nutrition Index (ATNI) has run a series of surveys of larger food multinational corporations using a set of criteria that are based around the companies' own statements of policy, but backed by some independent sampling of company practices [39]. The framework consists of rating each company on scales based on the companies' commitments, practices and disclosure within a series of categories: governance, products, accessibility, marketing, life-style support, product labelling and engagement with other stakeholders and regulators.

Monitoring for accountability

A broader approach has been developed by the International Network for Obesity/NCD Research, Monitoring and Action Support (INFORMAS), which has developed a set of modules for monitoring government policies and practices, private sector policies and practices, and a set of seven specific aspects of food environments: food composition, labelling, promotional marketing, public sector food catering, retail supply, prices and trade and investment policies [40]. It is intended that data collected from these monitoring activities will be the first step ('taking account') of an accountability framework which takes the form of a four-step cycle of accountability proposed by Kraak [41,42] (see Fig. 1). The second step, 'sharing account', consists of dissemination and participatory deliberation with stakeholders, followed by 'holding account' in which incentives and disincentives can be applied to enhance progress to meeting health targets, and lastly 'responding to the account' which includes strengthening policies and improving monitoring itself, leading forward to next accountability cycle.

For alcohol, in addition to the target of 10% reduction in harmful alcohol use, the WHO NCD Global Monitoring Framework includes three alcohol-related indicators: annual alcohol consumption by people aged more than 15 years; the prevalence of heavy episodic drinking among adolescents and adults; and alcohol-related morbidity and mortality among adolescents and adults [43]. These are clearly 'downstream' indicators of alcohol use and not indicators of the main drivers of consumption, namely alcohol production, pricing, promotion and availability, or the regulatory environment which might limit alcohol marketing and consumption. Only by monitoring such upstream indicators might there be some means of holding industry and regulators to account for their actions.

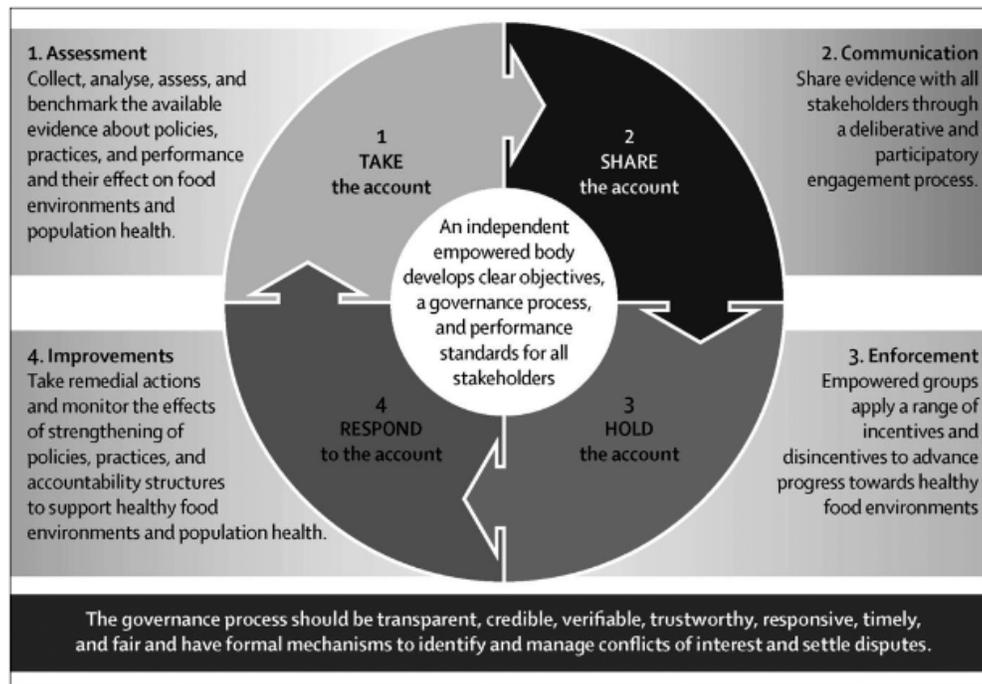


Figure 1 A framework for accountability in policy monitoring. Adapted from Kraak [41] with permission

NEXT STEPS: A TREATY OR A NON-BINDING CODE FOR ALCOHOL MARKETING?

Several authors have considered the merits of a possible Framework Convention on Alcohol Control (FCAC). Taylor & Dhillon [2] suggest that although coordinated international action is needed urgently, an FCAC would not be politically feasible in the current economic climate, and caution that a failed legal strategy 'could delay meaningful action for years to come'. Instead, they recommend a gradual process, starting with the development of a non-binding code of practice 'in areas of critical concern with wide political consensus, such as the marketing of alcohol to children, leading eventually to a comprehensive binding treaty' (p. 453). Similarly, Liberman [44] suggests that even if an FCAC is 'ultimately our instrument of choice', non-binding instruments can both enable international cooperation and stimulate action at national level, and he cautions that health treaties can present opportunity costs in terms of displaced resources, political will and attention.

A powerful argument made against non-binding instruments is that these carry little weight in negotiations of trade agreements globally, regionally and bilaterally, with the effect that public health considerations are not represented in these negotiations [45]. Only when codes, such as the infant formula code, are translated into national regulation does the issue become one which becomes referable to the World Trade Organization (WTO) on the grounds of creating a barrier to trade. Restrictions

on infant formula marketing can be justified on the basis of public health, and also that they do not discriminate between national and overseas producers. In the case of restricting the advertising of unhealthy foods to children the evidence for direct health effects is more tenuous, but the non-discrimination argument still applies, and to date there has been no referral to the WTO of a country imposing restrictive regulations. An alcohol code should fit into the same frame: if marketing controls or pricing requirements are introduced into national regulation they would be open to WTO referral and would need defending on grounds of health and non-discrimination: for further discussion see Mitchell & Casben [46].

A global code?

Taylor and colleagues have advanced a proposal for a WHO/UNICEF Global Code of Practice on the Marketing of Unhealthy Food and Beverages to Children which would include both alcohol and food marketing [47]. They argue that neither the WHO set of Recommendations on food marketing nor the WHO Global Strategy to Reduce Harmful Use of Alcohol address the global nature of the marketing challenge adequately and that there are sufficient parallels between the marketing practices for food and for alcohol to justify a single instrument. Key features of their proposed Code are a set of minimum global standards, provisions to enable information exchange and strong institutional and monitoring mechanisms. Taylor and colleagues argue that the merits of a non-binding code over a treaty include a faster and less cumbersome process than treaty

negotiation as well as the potential to ‘engage all relevant actors in the negotiation and implementation processes’ (p. 5).

Others disagree that an approach which engages with the alcohol industry could succeed. Room argues that the alcohol industry has more in common with the tobacco industry than the food industry—producing primarily one range of products ‘where public health and commercial interests are largely opposed’ and that thus, ‘effective cooperation is not in its shareholders’ interest’ [48]. Taylor *et al.* acknowledge the weaknesses of industry-led voluntary pledges to restrict marketing practices, and places emphasis on civil society participation in the process to ‘seek greater accountability from industry and governments, and potentially discourage coercion by wealthy nations and powerful corporate interests’ (p. 5). The reported experience of developing the WHO International Code of Marketing for Breastmilk Substitutes suggests that this is an unrealistic expectation of civil society’s influence or capacity. In this case the infant formula companies were engaged in a dual strategy: on one hand participating in the Code negotiations, and on the other hand seeking to undermine it behind the scenes.

If a Framework Convention on Alcohol Control remains a distant prospect in the current environment of low political will and economic concerns, an incremental approach starting with non-binding measures merits attention and may, as Ziegler has suggested, raise global awareness, stimulate national action and create a tipping point for transnational legal measures at a later stage [49]. The broad consensus that alcohol marketing and underage drinking are critical areas of concern suggests that a global code on alcohol marketing is a feasible starting point.

CONCLUSIONS

Legally binding global health treaties and non-binding codes have been developed to restrict the marketing of tobacco, breast milk substitutes and unhealthy foods. This paper has highlighted the key determinants that lead to the development of treaties and codes for public health, which include evidence of a public health crisis; rising costs of inaction; increasing civil society advocacy; public health capacity building; and the need to exclude or manage conflicting interests. Treaties and codes set norms for public health, and serve to support individual governments in strengthening their own legislation, assisted by technical support from international agencies. A binding treaty for alcohol control is unlikely to be achieved in the near future, but steps can be taken towards the development of market controls through the creation of alliances of advocates and health professionals, and creating the tools and the capacity to monitor current marketing practices and how these are evolving world-wide.

Declaration of interests

None.

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Trade law and alcohol regulation: what role for a global Alcohol Marketing Code?

Andrew D. Mitchell & Jessica Casben

Melbourne Law School, The University of Melbourne, Victoria, Australia

ABSTRACT

Background and aims Following calls for restrictions and bans on alcohol advertising, and in light of the tobacco industry's challenge to Australia's tobacco plain packaging measure, a tobacco control measure finding support in the World Health Organization (WHO) *Framework Convention on Tobacco Control*, this paper considers what role, if any, an international alcohol marketing code might have in preventing or reducing the risk of challenges to domestic alcohol marketing restrictions under trade rules. **Methods** Narrative review of international trade and health instruments and international trade court judgements regarding alcohol products and marketing restrictions. **Findings** The experience of European trade courts in the litigation of similar measures suggests that World Trade Organization rules have sufficient flexibility to support the implementation of alcohol marketing restrictions. However, the experience also highlights the possibility that public health measures have disproportionate and unjustifiable trade effects and that the ability of a public health measure to withstand a challenge under trade rules will turn on its particular design and implementation. **Conclusion** Measures implemented pursuant to international public health instruments are not immune to trade law challenges. Close collaboration between health policymakers, trade officials and lawyers, from as early as the research stage in the development of a measure to ensure a robust evidence base, will ensure the best chance of regulatory survival for an international marketing code.

Keywords Alcohol, alcohol marketing code, dispute settlement, international health agreement, international trade law, litigation, marketing, tobacco, World Trade Organization.

Correspondence to: Jessica Casben, Melbourne Law School, The University of Melbourne, 185 Pelham Street, Carlton, Victoria 3053, Australia.

E-mail: jessica.casben@unimelb.edu.au

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INTRODUCTION

The success of the World Health Organization (WHO) *Framework Convention on Tobacco Control* (FCTC) [1] in securing widespread tobacco control activity in the developed and developing world [2] has spurred consideration of the benefits of similar international instruments in other public health areas, particularly those aimed at addressing the 'global epidemic' [3] of non-communicable diseases [4–6]. In light of the challenges brought against tobacco control measures under international trade agreements¹ [7,8], it should be unsurprising that health policymakers are keen to ensure policy space for other preventative public health measures in the vast and

ever-expanding trade law environment [9]. As noted by Landon *et al.* in this Supplement, a non-binding code of practice on alcohol control, focused potentially on alcohol marketing (Alcohol Marketing Code), is one such instrument being proposed [5,6].

International health agreements are invaluable resources for policymakers seeking to develop public health measures and have 'the capacity to significantly inform the way in which trade and investment treaties... are interpreted and applied' [9,10]. They do not, however, offer a panacea to the possibility of litigation of public health measures under international trade rules [11]. Rather, as a review of European trade disputes regarding alcohol marketing restrictions suggests [12], the ability of a

¹Regarding Australia's tobacco plain packaging measures in the World Trade Organization, and regarding Norway's point-of-sale display bans in the European Free Trade Association States (EFTA) Court (and as applied by the Oslo District Court). Challenges have also been brought against tobacco control measures under bilateral investment agreements, including in respect of Australia's tobacco plain packaging measures and Uruguay's graphic health warnings; however, consideration of the international investment law framework is outside the scope of this paper.

measure to withstand a dispute turns on the particular design and implementation of that measure. In this context, the strongest answer to a trade law challenge is a strong evidence base—for the regulatory intervention generally and for the specific design and operation of the particular measure/s being implemented. Such an aim will be best served by interdisciplinary collaboration between lawyers, experts and policymakers throughout the policy development process.

ANTICIPATING THE FORM OF AN ALCOHOL MARKETING CODE

In the context of public health instruments, a proposal for a non-binding code refers specifically to a non-binding 'recommendation' adopted by the World Health Assembly pursuant to Article 23 of the *Constitution of the World Health Organization* (WHO Constitution) [13]. The *International Code of Marketing of Breast-milk Substitutes* (the Breast-milk Substitutes Code) [14] and the *WHO Global Code of Practice on the International Recruitment of Health Personnel* (the Health Personnel Code) [15] offer examples of this kind of instrument. These non-binding codes are distinct from binding conventions adopted under Article 19 of the WHO Constitution, an example of which is the FCTC. Provided that the intention is to create a non-binding framework to regulate the marketing and advertising of alcohol products, one can presume it will take the form of a Code recommending action by WHO Member States.

RECOMMENDATIONS UNDER AN ALCOHOL MARKETING CODE

The scope and content of any Alcohol Marketing Code would necessarily be the subject of negotiations between the parties. However, the Breast-milk Substitutes Code and the FCTC, as instruments concerned with the marketing of consumer goods, and the WHO *Global Strategy to Reduce the Harmful Use of Alcohol* [16], which proposes policy options and interventions to target harmful alcohol use that include marketing restrictions [9], offer some guidance as to the kinds of measures that might be recommended.

Based on these materials, it can be presumed that an Alcohol Marketing Code might capture promotion to the general public as well as point-of-sale advertising, and labels on or attached to a product,² and that its coverage might extend from traditional print and media advertising

to event sponsorship, health warnings, internet promotion and product placement in film and television.³ To this end, recommendations might encourage the implementation of measures that: restrict advertising to young people in 'family' television time slots and in youth-targeted publications such as teen magazines; prohibit sponsorship by alcohol companies of public events; and restrict what advertising media are available to alcohol companies.

RECOMMENDING SUBSTANCE OVER FORM

Reflecting further on the Breast-milk Substitutes Code and the FCTC, it seems unlikely that an Alcohol Marketing Code would prescribe the particular form that a recommendation should take. Rather, it would recommend a style of regulation, and potentially key features of implementing measures, while leaving many of the details regarding the design and application of measures for state parties to determine, in accordance with their national laws and regulations.⁴

By way of example, Article 9.2 of the Breast-milk Substitutes Code recommends that infant formula be labelled with 'a statement of the superiority of breastfeeding', among other things, in a 'clear, conspicuous, and easily readable and understandable message... in an appropriate language'. In implementing that recommendation regulators will need to exercise their own discretion as to where the placement of any labels should appear, the font size, colour and style, as well as the particular form of words to be used in conveying the recommended message.

Similarly, Article 11.1(b) of the FCTC requires Parties to adopt and implement 'effective measures to ensure that [tobacco products] carry health warnings' that are 'rotating', 'large, clear, visible and legible', take up 'no less than 30% of the principal display areas' and which 'may be in the form of or include pictures'. The particular content, design and placement of these warnings is, however, left to each implementing Party to determine. Even when read in conjunction with the Guidelines to Implementation [17], which provide considerably more detail on the various ways the obligation might be implemented, a Party ultimately has to make a number of regulatory choices in designing and applying an implementing measure. These regulatory choices can influence significantly how a measure will operate in practice, including how it will impact the relevant domestic market for trade in related goods and services.

²See, for example, Articles 5.3 and 9 of the Breast-milk Marketing Code, respectively.

³See, for example, FCTC Article 13(4) and related *Guidelines for implementation of Article 13 of the WHO Framework Convention on Tobacco Control (Tobacco advertising, promotion and sponsorship)*.

⁴See, for example, various instances of 'in accordance with its national law', and similar, in the FCTC.

INTERNATIONAL TRADE RULES

The implementation of trade-related measures is disciplined by international trade rules. Members of the World Trade Organization (WTO) agreements⁵ are obliged to implement domestic laws and regulations ('measures') in a WTO-consistent manner. This commitment is not limited to measures that regulate trade, but also captures measures that relate to or impact trade. However, while international trade agreements might capture non-trade measures they do not prohibit trade effects.

Rather, trade rules are concerned primarily with disciplining discriminatory treatment and unjustified trade-restrictive regulation: that is, regulation that disadvantages imported products in favour of domestic products, or regulation that operates to restrict trade unnecessarily. Those of most relevance to marketing restrictions include: prohibitions on 'quantitative restrictions' (e.g. quotas) on imports [18]; obligations of non-discrimination against or between imports [19]; limits on the restrictions that can be placed on the supply of foreign services; and obligations of non-discrimination against or between foreign service suppliers [20]. Specific rules also apply in respect of packaging and labelling requirements [21], and regarding the protection of the intellectual property of nationals of other WTO members [22].

INTERSECTIONS BETWEEN ALCOHOL MARKETING RESTRICTIONS AND INTERNATIONAL TRADE LAW

That the kind of measures that might be recommended in an Alcohol Marketing Code could impact trade in goods and services is uncontroversial. For example, restrictions that prohibit advertising to certain demographics, such as youth, impact upon trade in alcohol products in so far as they result in a decline in consumption of those products. In another way, a measure that restricts alcohol advertising on television could be said to impact trade in advertising services as well as television broadcasting services. Legitimate, evidence-based public health measures that apply to all products or services, regardless of their country of origin, should not fall foul of these

requirements. Particular features of domestic markets can, however, mean that the impact of an otherwise even-handed measure is felt disproportionately among trading partners or as between domestic and foreign industry. For example, if domestic manufacturers of a product use component X and foreign manufacturers of the same product use component Y, regulation that prohibits the use of component Y only may be said to have a discriminatory impact.

In this way, the WTO Agreements apply to measures that regulate the marketing of alcohol products in the same way as they would apply to measures that regulate trade. The ultimate consequence of the trade law discipline is that if a WTO Member considers a particular alcohol marketing restriction to be in breach of WTO obligations it can challenge that measure under the WTO's dispute settlement system.⁶ A ruling of non-compliance by a WTO Panel or Appellate Body means a Member is obliged to remedy the non-compliance, for example through modification or repeal.⁷ An example of the WTO dispute settlement system being used to challenge a health measure's trade impacts can be seen in the, yet to be decided, dispute regarding Australia's introduction of tobacco plain packaging [7].

PUBLIC HEALTH EXCEPTIONS

In instances where a public health measure is challenged under trade rules, the analysis will turn first upon whether the measure is found to restrict the provision of goods or services in a domestic market by foreign entities, or is designed or applied in a manner that discriminates between domestic and foreign goods or services. If the measure is found to breach WTO rules, the WTO agreements include inbuilt flexibilities that recognize that governments may have legitimate reasons to enact what might otherwise be WTO inconsistent measures to protect non-trade interests, such as public health.⁸ However, a determination of whether or not a measure can invoke a public health exception is not based simply on a declaration or designation of a measure as having a public health objective. Rather, the exceptions turn typically on whether the measure can be characterized legitimately as a public health

⁵The WTO constitutes the central multi-lateral instrument in this area with 164 Members. International trade law commitments can also be found in an increasing number of bilateral and regional free trade agreements. These agreements often mirror the WTO commitments mentioned, but secure higher commitments in other areas, such as tariffs and intellectual property protections; they might also provide alternative dispute settlement avenues.

⁶While the WTO dispute settlement system hears disputes only between Member States it is not uncommon for industry to be closely engaged with the process, even to the extent of covering associated costs. For example, media reports suggest that various tobacco companies are supporting WTO Members to bring claims against Australia's tobacco plain packaging measure in the WTO [23].

⁷Damages are not awarded in the WTO dispute settlement system. However, where a respondent Member fails to implement an adverse ruling, the complainant Member may ultimately take retaliatory measures in the form of 'suspension of concessions' [24].

⁸These flexibilities can be by way of explicit exceptions, such as in GATT Article XX and GATS Article XIV, or be built into the substantive provisions, such as in the TBT Agreement Article 2.2.

measure (on an objective basis),⁹ whether the measure is ‘necessary’¹⁰ to protect human health and whether the government has struck the right balance between the negative impact on trade and the health objective of the measure.¹¹ These questions about the necessity and proportionality of a particular measure, both at law (*de jure*) and in practice (*de facto*), are critical to understanding the key issues facing public health policymakers in the trade law environment [25–27].

In assessing the necessity and proportionality of challenged measures, WTO panels and the Appellate Body have applied a ‘weighing and balancing’ approach of ‘putting all the variables of the equation together and evaluating them in relation to each other’ [28] to determine the ‘extent to which the measure contributes to the realization of the end pursued’, as well as ‘the extent to which the [measure] produces restrictive effects on international commerce’ [29]. To this end, consideration is given to whether the measure at issue makes a contribution to its stated goal¹² [30]; whether that contribution justifies the resulting restriction on trade [31]; and whether there are any alternative measures that would satisfy the measure’s objective with a less trade-restrictive outcome¹³ [31,32]. Because this analysis turns on the design and implementation of a particular measure, it cannot be said that the exception is available to all public health measures simply because they are public health measures. Rather, the question of whether the exception applies in a given circumstance is likely to be the subject of dispute settlement. Again, the current challenges to Australia’s tobacco plain packaging requirements serve as an example of just such an instance [7].

THE APPLICATION OF TRADE RULES TO ALCOHOL MARKETING MEASURES

The application of international trade law rules to packaging and labelling measures has been the subject of

considerable discussion to date [33]. While the need to consider the possible impacts of similar regulatory interventions in respect of alcohol and other unhealthy products is clear, this paper does not seek to go over this well-trod ground, but instead is concerned with the intersections between trade rules and other non-labelling forms of alcohol marketing restrictions—such as sponsorship bans, restrictions on television or print advertising or bans on the use of billboards for alcohol advertising. As such measures have not, to date, been the subject of WTO dispute settlement,¹⁴ the implications are largely unknown.

European courts have, however, considered challenges to alcohol marketing restrictions in the context of the trade commitments made between members of the European Economic Community and European Union. Given the similarity of the relevant provisions in the WTO and European trade agreements,¹⁵ these cases may offer some insight into the ways in which alcohol marketing restrictions might be dealt with in the WTO, suggesting that public health exceptions will be available to justify alcohol advertising restrictions and cure trade effects that might otherwise be inconsistent with trade rules.

THE EUROPEAN EXPERIENCE

In 1991, the European Court of Justice held that a Catalan ban on the advertising of beverages of more than 23% alcohol content in mass media, on streets and highways and in cinemas and public transport constituted a prohibited quantitative restriction, but was proportionate to its public health goals [34]. In 2004, the same court found that French legislation prohibiting the advertising of alcoholic beverages that resulted from television broadcasting of binational sporting events held in other Member States was in breach of market access commitments for services, but was also proportionate to the public health objectives it sought to achieve [35]. Furthermore, in 2009, the Norwegian Supreme Court, in applying an

⁹See, for example, GATT Article XX/GATS Article XIV preamble which states that ‘measures are not [to be] applied in a manner which would constitute a... disguised restriction on international trade’.

¹⁰See, for example, GATT Article XX(b)/GATS Article XIV(b) which states that ‘nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures... necessary to protect human, animal or plant life or health’.

¹¹See, for example, GATT Article XX/GATS Article XIV preamble which states that ‘measures are not [to be] applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail’.

¹²WTO panels and the Appellate Body accord WTO Members a degree of deference in determining what level of protection or regulatory objective they wish to achieve. For a detailed discussion on the limitations to this deference see [30].

¹³In this context, the importance of the objective the Member is pursuing is also taken into account.

¹⁴Despite there being a number of disputes regarding measures that regulated trade in alcohol products, they related to the importation, sale and distribution of alcohol products, not the marketing of those products. Similarly, where challenges have been brought against measures that restricted the provision of services, including at least one directly considering advertising services, they did not involve restrictions analogous to those that would be contemplated under an Alcohol Marketing Code.

¹⁵For example, in respect of trade in goods, prohibitions on quantitative restrictions feature in GATT Article XI, Article 30 of the *Treaty Establishing the European Economic Community* (EC Treaty) and Article 34 (ex Article 28) of the *Treaty on European Union* (EU Treaty). Similarly, market access and non-discrimination commitments in respect of services are found in GATS Articles II, XVI and XVII and Article 56 (ex Article 49) of the EU Treaty. GATT and GATS general exceptions provisions (GATT Article XX and GATS Article XIV) which provide for public health exceptions are also reflected in the EC Treaty (Article 36) and EU Treaty (Article 36, ex Article 30).

advisory opinion of the European Free Trade Association (EFTA) Court [36], held that a ban on the advertising of beverages of more than 2.5% alcohol content, while constituting a prohibited quantitative restriction, was proportionate to the public health objectives sought [37]. In each of these instances, the measure at issue was captured by the relevant public health exception and, thus, consistent with the implementing country's trade law commitments.

Invoking an exception successfully is not, however, assured. One case in particular demonstrates that the central issue in the application of public health exceptions is the impact of the particular measure on the relevant market. In 2003, the Swedish Market Court¹⁶ held that a ban on advertising of beverages containing more than 2.25% alcohol, which had been found by the EFTA Court to be a prohibitive quantitative restriction on imports [38], was not proportionate to the restrictions it imposed on trade [39]. In reaching this decision, the Market Court held that the ban, in its current form, was ineffective in the pursuit of its public health objective. The Court reasoned that if the objective was, as was stated in the relevant policy, the protection of public health by reducing the harmful effects of alcohol consumption, the various exceptions that operated to permit alcohol advertising at the point of sale, via the internet, in editorial material, as well as through foreign newspapers and foreign TV channels, all of which were available in Sweden, undermined this objective to such an extent that the restriction on trade could not be justified [39].

THE RELATIONSHIP BETWEEN TRADE AND HEALTH

It would be easy to explain away the Swedish Market Court's decision as an example of trade rules undermining public health interests. In this context, much is often made of the difference between legally binding and non-binding international agreements, with the latter, the common status of public health instruments, being said to be easily 'trumped' by binding trade law rules [40,41]. However, this overshadows the central issue. The question is not whether an international health obligation, or recommendation, conflicts with trade rules but whether a particular health measure has been designed, implemented and applied in a manner that is consistent with trade rules. Recalling the level of discretion that exists for States in implementing their obligations under the FCTC or in giving effect to the recommendations of Breast-milk Substitutes Code, the answer to this question will undoubtedly lie in

the detail as adopted and applied by a particular country with reference to the features of their market. It is not going to turn on the general features of a measure outlined in any Alcohol Marketing Code.

The Swedish Market Court's decision demonstrates this point. It highlights the fact that there can be legitimate questions to be asked about the trade impacts that result from the particular design and implementation of a public health measure. In this context the Swedish response to the decision, which saw the implementation of a revised ban that prohibited radio and television advertising of alcohol, restricted the advertising of alcohol in periodical publications, other than point-of-sale materials, to beverages with an alcohol content of 15% or lower and required text warnings about the risks associated with alcohol consumption to appear alongside such advertisements¹⁷ [42], demonstrates that health measures can be calibrated in such a way that any resulting restrictions on trade are consistent with international trade rules.¹⁸ So, to, do the previously discussed Catalanian, French and Norwegian measures.

WHAT ROLE FOR AN ALCOHOL MARKETING CODE?

By disciplining trade effects that are discriminatory or unjustifiably restrictive, as well as employing terms such as 'legitimate' and 'non-discriminatory' in connection with public health exceptions, international trade agreements provide considerable space for legitimate, effective and balanced public health measures while precluding those measures that, in fact, amount to disguised restrictions on trade or unjustified discrimination. It is here that the majority of the battle will be fought in trade disputes regarding public health measures—on questions of legitimacy, efficacy and balance. The key material for policymakers in defending a public health measure with respect to alcohol to any such challenge will therefore be evidence that supports the design and implementation of that particular measure in that particular market.

The existence of an Alcohol Marketing Code will not ensure that domestic restrictions on alcohol marketing and advertising are saved from lengthy and costly dispute settlement under international trade rules, nor provide certainty as to the outcome of any such disputes. This is centrally because an Alcohol Marketing Code will not provide evidence of the trade impacts of a particular measure, or negate the need for consideration of proportionality, and these questions will remain open to argument. Whether an Alcohol Marketing Code is binding or non-binding will not change these limitations. As can be seen from

¹⁶A specialist court that has jurisdiction to hear cases related to the *Competition Act*, the *Marketing Act* and other consumer and marketing legislation.

¹⁷Pursuant to 2005 amendments to the *Alcohol Act*.

¹⁸The amendments have not, to date, been challenged under European trade rules.

Australia's experience with tobacco plain packaging, the binding treaty that is the FCTC did not see a dispute avoided, nor its resolution prompt.

However, an Alcohol Marketing Code may provide evidence of widespread consensus as to the legitimacy of the relevant health objective, the effectiveness of a measure in contributing to that objective and the need for different regulatory treatment as between some products or services. WTO dispute settlement bodies have shown a willingness to look to this kind of evidence from non-trade sources when considering disputed measures¹⁹ [43]. Such evidence will likely be vital to any assessment of trade impacts and proportionality. The evidence base underpinning an Alcohol Marketing Code could also assist countries in building their own country-specific evidence justifying their pursuit of public health measures that have trade impacts. In this way, the Code could serve as a capacity building hub. For these reasons, the utility of a global consensus on alcohol control in the context of an international trade dispute should not be downplayed.

CONCLUDING REMARKS

As this paper demonstrates, the alcohol industry's appetite for trade law litigation in response to alcohol marketing restrictions is clear. While this has, to date, been limited to European trade rules and trading relationships, similar issues have been raised in the WTO in respect of various Members' alcohol marketing restrictions [44]. As measures restricting alcohol marketing become more widespread and prohibitive, the likelihood of legal challenges to the legitimacy and efficacy of alcohol marketing restrictions from the alcohol industry can be expected to increase. Replicating the strategy of the tobacco industry, the alcohol industry has already argued against proposed alcohol marketing restrictions by questioning theories underlying policy development²⁰ and the voracity of evidence.²¹

Long-term, expensive litigation, with the potential result of global regulatory chill, may in itself be a goal of tobacco and alcohol industries alike. An Alcohol Marketing Code can neither guarantee immunity under international trade law rules nor prevent the commencement of a trade dispute; an international code should not be pursued for that reason alone. At the same time, the potential for international trade law challenges should not be used as justification for avoiding robust alcohol control measures.

Rather, close collaboration between health policy makers, trade officials and lawyers, from as early as the research stage in the development of a measure, will ensure the best chance of regulatory survival. In particular, the early engagement of legal expertise can ensure an understanding of the issues likely to be the focus of a dispute. This, in turn, can inform the design of underlying research in support of a measure, the drafting of legislation that implements a measure and the collection of evidence through monitoring and evaluating a measure, all of which can ensure a robust evidence base that gives a health measure the greatest chance of both avoiding and withstanding a challenge under trade rules [10].

Declaration of interests

None.

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²⁰See, for example, the report commissioned by the Industry Association for Responsible Alcohol Use in response to proposed alcohol marketing restrictions in South Africa, which states: 'There is no statistical relationship between per capita alcohol consumption and per capita advertising expenditure on alcoholic beverages. From this one can conclude that, if the adjustment for population growth is made in the data, the correlation decreases and the relationship is not statistically significant, i.e. there is no relationship between advertising expenditure and the consumption of alcohol' [45].

²¹See, for example, Lion's submission to New Zealand's Forum considering possible further alcohol marketing restrictions, which states: 'There is no compelling evidential basis that a ban or significant additional [advertising] restrictions will bring about a reduction in harm' [46].

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Can human rights standards help protect children and youth from the detrimental impact of alcohol beverage marketing and promotional activities?

Audrey R. Chapman

Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington, CT, USA

ABSTRACT

Background and aims The alcohol industry in the Latin American and Caribbean (LAC) region promotes demand for alcohol products actively through a number of channels, including advertising and sponsorship of sports and other events. This paper evaluates whether human rights instruments that Latin American countries have ratified can be used to limit children's exposure to alcohol advertising and promotion. **Methods** A review was conducted of the text of, and interpretative documents related to, a series of international and regional human rights instruments ratified by most countries in the LAC region that enumerate the right to health. **Results** The Convention on the Rights of the Child has the most relevant provisions to protect children and youth from alcohol promotion and advertising. Related interpretive documents by the United Nations Committee on the Rights of the Child affirm that corporations hold duties to respect and protect children's right to health. **Conclusion** Human rights norms and law can be used to regulate or eliminate alcohol beverage marketing and promotional activities in the Latin American region. The paper recommends developing a human rights based Framework Convention on Alcohol Control to provide guidance.

Keywords Children and youth, deleterious corporate activity, human rights instruments, human rights protections, regulation of alcohol advertising, right to health.

Correspondence to: Audrey R. Chapman, Department of Community Medicine and Health Care, University of Connecticut, School of Medicine, Farmington, CT, USA 06030-6325. Email: achapman@uchc.edu

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INTRODUCTION

Alcohol consumption is high in the Latin American and Caribbean (LAC) region, and the rate of use is increasing. Compared to other geographic regions, Latin America and the Caribbean also have the highest percentage (4.5%) of total deaths attributed to alcohol usage. Rising rates of alcohol consumption, increased drinking among young people and binge drinking patterns have contributed to alcohol's role as the leading risk factor for death and disability in the region [1].

The increase in alcohol consumption in LAC is due probably, at least in part, to the active promotion of alcohol products by the alcohol industry. In Latin America, as elsewhere, the alcohol industry uses marketing and advertising to increase the public's exposure to its products and to promote drinking as socially desirable while usually ignoring the deleterious impact of alcohol on health [2]. Moreover, a significant proportion of alcohol marketing

targets youth and contains content and uses venues attractive to young people [3]. The alcohol industry advertises on youth radio, television, websites, social media and mobile phones, sponsors sport and music events and utilizes product placement in movies and television shows [4]. Youth, particularly young people who have already initiated alcohol use, have been shown to be particularly susceptible to the promotional messages in alcohol advertising [5]. These initiatives contravene industry guidelines for responsible advertising practices, which acknowledge that vulnerable population groups such as youth, should be protected from targeted advertising by alcoholic beverage producers [3].

HUMAN RIGHTS PERSPECTIVE

Relevance of a human rights perspective

The use of human rights norms, standards and law related to the right to health offers a potential strategy to regulate and restrict advertising and promotional

activities related to alcohol products. A Pan American Health Organization (PAHO) report addressing the harms of second-hand tobacco smoke stated that: 'International human rights law provides governments with a useful legal framework to facilitate the implementation of effective laws and educational campaigns to protect the public...' [6]. The same can be said of the potential application of human rights law to protect individuals and the public from the deleterious impacts of alcohol advertising and promotional activities.

During the past 60 years, health protection and access to health care have been recognized as the subject matter of human rights. A series of international and regional human rights instruments which have been ratified by most countries in the LAC region recognize the right to health. Countries which ratify these instruments assume the legal obligation to implement their provisions.

Importantly, PAHO has used a human rights approach previously in its work on a number of issues. For example, PAHO has conducted technical workshops promoting human rights in the context of HIV/AIDS, disabilities, mental health, the health of indigenous peoples and the health of older people. Most recently, PAHO explored the relevance of a human rights perspective for protecting individuals and communities from exposure to second-hand tobacco smoke [6].

Relevant human rights instruments

Beginning with the Universal Declaration of Human Rights in 1948 [7], a series of international and regional declarations and instruments have enumerated a right to health, or as articulated in Article 12 of the International Covenant on Economic, Social and Cultural Rights, 'the right of everyone to the enjoyment of the highest attainable standard of physical and mental health' [8]. Other human rights instruments, for example the International Covenant on Civil and Political Rights [9], have recognized a right to life and interpreted it broadly as requiring positive measures for health protection and medical care as, for example, to reduce infant mortality and increase life expectancy [10].

The following international and regional human rights instruments have provisions that are particularly relevant to protecting the health of children and youth from alcohol advertising. Most, or in some cases all, LAC countries have affirmed or ratified these instruments:

- Regarding the International Covenant on Economic, Social and Cultural Rights: as noted above, Article 12 recognizes the right of everyone to the highest attainable standard of physical and mental health to be achieved progressively subject to the availability of resources. Article 12 directs state parties (the countries which have ratified the Covenant) to undertake a series of steps which

include those necessary for the reduction of infant mortality and for the healthy development of the child [8]. A 2000 general comment adopted by the United Nations Committee on Economic, Social and Cultural Rights expands upon the conception of what the right to health entails. It enumerates the obligation of state parties to provide the underlying determinants of health, including healthy environmental conditions and access to health-related education and information [11]. A safe and healthy environment for children would be one without alcohol advertising and promotional activity. Additionally, health-related education and information should be interpreted to cover the harms of drinking alcohol.

- The Convention on the Rights of the Child, which has been ratified by 190 countries, the most of any human rights instrument, recognizes the right of the child, whose definition includes adolescents, to the enjoyment of the highest standard of health. Article 24 directs state parties to take appropriate measures to implement this right in order to diminish infant and child mortality; ensure the provision of necessary medical assistance and health care to all children with emphasis on the development of primary health care; combat disease and malnutrition; and to provide access to education about child health and nutrition [12].
- Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights, 'Protocol of San Salvador': Article 10 recognizes the right to health as a public good and instructs state parties to undertake a series of measures to ensure that the right is implemented including making primary or essential health-care available to all; extending the benefits of health services to all individuals subject to the State's jurisdiction; providing universal immunization against the principal infectious diseases; preventing and treating endemic, occupational and other diseases; educating the population on the prevention and treatment of health problems; and addressing the health needs of the highest risk groups and those whose poverty makes them the most vulnerable [13].

Human rights standards addressing the regulation of deleterious corporate activity

The Convention on the Rights of the Child has the most relevant provisions to protect children and youth from the deleterious effects of alcohol promotion and advertising. The preamble to the Convention identifies children explicitly as a vulnerable group requiring special protection, care and assistance [12]. Article 17 addresses the important function performed by the mass media and encourages the development of appropriate guidelines for the protection of the child from information and material injurious to his or her wellbeing [12]. Further, Article 32 states that

children have the right to be protected from economic exploitation [12]. In addition, Article 33 directs states parties to take all appropriate measures, including legislative, administrative, social and educational measures, to protect children from the illicit use of narcotic drugs and psychotropic substances.

A general comment prepared by the UN Committee on the Rights of the Child to interpret the requirements of Article 24 of the Convention specifies that all business enterprises have an obligation to identify, prevent and mitigate their negative impact on children's right to health across their business relationships and within any global operations [14]. These requirements are elaborated further in another general comment prepared by the Committee on the Rights of the Child on state obligations regarding the impact of the business sector on children's rights. In that document the Committee identifies the ways in which the activities and operations of business enterprises can impact upon a child's inherent right to life and to health. It warns that the marketing to children of products such as cigarettes and alcohol can have a long-term impact upon their health [15]. To protect the child, the Committee directs states to adopt preventive measures such as effective regulation and monitoring of advertising and marketing industries and to create an enabling environment for business to respect children's right to life and health. The general comment goes on to state that legislation and regulation are essential instruments for ensuring that the activities and operations of business enterprises do not impact upon adversely or violate the rights of the child. It mentions specifically the problematic role that the mass media may have on children and the need to regulate the media to protect children from harmful information. Additionally, according to the general comment, states are required to implement and enforce internationally agreed-upon standards concerning children's rights, health and business [15].

United Nations global compact

The claim that corporations have 'hard' or binding obligations under international human rights law is controversial because, at least as formulated originally, international human rights law does not apply directly to non-state actors. When the issue of their human rights responsibilities is raised, corporations have argued that their primary or sole responsibility is to their shareholders. John Ruggie, who served as the UN Secretary-General's special representative on the issue of human rights and transnational corporations, appeared initially to take the position that no binding international law currently placed duties on corporations, but in his later UN reports he affirmed that corporations hold duties to respect human rights and not to infringe the rights of others. His final report providing Guiding Principles on Business and Human

Rights proposes a 'protect, respect and remedy' framework. Its components are: (1) the state's duty to protect against human rights abuses by third parties, including business enterprises, through appropriate policies, regulation and adjudication; (2) the corporate responsibility to act with due diligence to avoid infringing the rights of others and to address adverse impacts with which they are involved; and (3) the need for greater access by victims to an effective remedy, both judicial and non-judicial [18].

The United Nations Global Compact, a UN initiative to encourage businesses to adopt socially responsible policies, including respect for human rights, incorporates these principles. The United Nations reports that there are more than 8000 corporate participants in the Global Compact [17]. The corporations that have joined the Global Compact are listed on the UN site. Several multinational alcohol producers have subscribed to this initiative, including Anheuser-Busch, InBev, Asahi, Bacardi, Carlsberg, Diageo, Heineken, Krin, Perond Richard and SABMiller. It would be possible to check whether other companies operating in LAC have also become corporate participants.

STRATEGIES TO PROTECT INDIVIDUALS AND COMMUNITIES

The Committee on the Rights of the Child (CRC) has declared that states have an obligation to protect the rights guaranteed under the Convention on the Rights of the Child against infringements by third parties and that this duty is of primary importance when considering states' obligations with regard to the business sector. The CRC's General Comment addressing the impact of the business sector on children's rights specifies that such measures should encompass the adoption of appropriate policies, the passing of laws and regulations, their monitoring and enforcement and investigation of their potential violations. Furthermore, 'A State is therefore responsible for infringements of children's rights caused or contributed to by business enterprises where it has failed to undertake necessary, appropriate and reasonable measures to prevent and remedy such infringements or otherwise collaborated with or tolerated the infringements' [14].

Realizing that business enterprises operate increasingly on a global scale through complex networks of subsidiaries, contractors, suppliers and joint ventures, as is the case with many companies involved with the production, marketing and promotion of alcohol products, the CRC specifies that while states have a primary responsibility to respect, protect and fulfill children's rights in their own jurisdiction, states also have obligations to engage in international cooperation for the realization of children's rights beyond their territorial boundaries. They must ensure that all business enterprises, including transnational corporations

which are operating within their borders, are regulated adequately so that they do not impact adversely upon the rights of the child and/or aid violations in foreign jurisdictions [15].

Clearly, human rights norms and law regarding the right to health and the rights of the child require the effective implementation of regulatory measures to protect children and other vulnerable groups from exposure to alcohol marketing and promotion in order to reduce alcohol use and the consequent deleterious impact of alcohol products. Given the difficulty of shielding vulnerable groups from alcohol advertising and promotion, the most effective protection would be a categorical prohibition of all forms of alcohol advertising and promotion, and that is what Article 13 of the WHO Framework Convention on Tobacco Control requires regarding tobacco products. If states cannot do so due to constitutional principles, the Framework Convention obliges states to apply comprehensive restrictions [18].

However, states within the LAC region generally fail to undertake measures to protect vulnerable groups from alcohol advertising, promotion and sponsorship. Only 12% have statutory bans to limit the marketing of alcohol beverages, and two-thirds of countries in LAC have no restriction on TV, radio, print media and billboard advertising [4]. Therefore, it could be said that most states within the LAC region are in violation of their human rights responsibilities.

A project on alcohol marketing in Europe aiming to strengthen regulation to protect young people has a number of relevant recommendations. It proposed that alcohol marketing restrictions at European and country levels should address the advertising and promotion of alcohol products through all media and the sponsorship of arts, cultural, musical and sporting events. It recommended that European and country-based regulations be strengthened in order to: (1) restrict the placement of alcohol marketing to reduce exposure to young people; (2) limit alcohol marketing that is misleading about the characteristics or effects of alcohol; (3) prohibit alcohol marketing that appeals to minors and other vulnerable groups; and (4) require information that alcohol is not a risk-free product. In addition, it recommended that these objectives may be realized by restricting marketing to information about the product and referring only to the origin, composition, strength (% alcohol) and means of production. The guidelines also called for the establishment of systems to provide sustainable monitoring and surveillance of alcohol marketing [19].

While these measures provide a good starting point, they are too general to be truly useful. There is a need for much greater specificity. For example, what exactly does it require to restrict the placement of alcohol marketing to reduce exposure to young people? Does it apply to

specific types of media, time-periods and/or advertisements that would attract and appeal to young people? Also, what ages does the term 'young people' encompass? Similarly, it would be helpful to have a list of all the types of alcohol marketing that might appeal to minors and other vulnerable groups. Does it include all sponsorship of sporting events and product placements in youth-related programs and activities?

In contrast with the work on tobacco control, currently there is no strong international consensus about the deleterious impact of alcohol; nor is there an international or regional framework instrument with guidelines for implementation that could underlay and support initiatives to regulate alcohol advertisement and promotion. For that reason it would be important to initiate efforts to draft such a document, preferably under the aegis of the United Nations, an international human rights monitoring body such as the CRC or alternatively a regional health organization, which in this case would be PAHO. Like the Framework Convention on Tobacco, it could seek signatures from countries willing to affirm its principles and make a commitment to implement them. However, should it not be possible to proceed with a Framework Convention, it would still be useful to draft a comprehensive human rights-based document setting forth measures to restrict alcohol advertising and promotion that would at least provide guidance to sympathetic governments, civil society organizations and human rights oversight and monitoring bodies committed to protecting children and youth from alcohol advertising and promotional activities.

Declaration of interests

None.

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Alcohol industry marketing strategies in Latin America and the Caribbean: the way forward for policy research

Restrictions on alcohol marketing are potentially a cost-effective way to reduce alcohol-related harm in the Latin America and Caribbean region. To strengthen current alcohol marketing regulations, it is important to document and evaluate critically the marketing and promotional strategies used by the alcohol industry, and to conduct further research on the population impact of alcohol marketing regulations in terms of alcohol-related harm. At least six industry marketing strategies need to be investigated, and there is a need to improve the methods, theories and research designs used in the study of the alcohol industry as a possible inducer of alcohol-related problems.

A significant amount of alcohol industry revenue is spent on the marketing and promotion of alcoholic beverages [1,2]. Expenditure on alcohol marketing may be particularly effective in developing countries, which are not yet saturated by advertising. Despite industry claims that marketing is used only for brand switching and to capture market share, there is a significant link between exposure to alcohol marketing and the subsequent initiation of drinking and drinking problems among young people [3–5].

This paper argues that the alcohol industry's marketing activities play an important role in defining the environment in which harmful drinking patterns are learned and practised. For this reason, it is important to document and evaluate critically the impact of marketing and promotional strategies used by the alcohol industry in the region, and to evaluate the impact of new regulations.

Alcohol marketing regulations in the Americas are relatively weak [6]. Currently, most countries have no statutory regulations for marketing alcohol on national television, radio or the internet. At least six marketing strategies are worthy of investigation: promotion of alcohol among vulnerable groups such as young people [7,8] and women [9–12]; product innovations and packaging designs [13–16]; life-style marketing and sponsorships [8,17–20]; use of the social media and digital marketing [21,22]; and activities to increase the number of drinking occasions [23–26].

As a working hypothesis, it is proposed that both the content and volume of alcohol marketing can lead to increased alcohol consumption in the Latin American and Caribbean (LAC) region which, in turn, may increase the rate of alcohol-related problems in exposed populations, particularly among vulnerable groups. As noted by Baum *et al.* [27], transnational corporations (TNCs), particularly those operating in sectors such as food and beverage,

tobacco and pharmaceuticals, can be harmful to health because of the products they produce and the influence TNCs have on government regulations. These authors have promoted the use of corporate health impact assessments (CHIAs) to identify the social, environmental and economic factors that influence health and health equity outcomes. Among the structural features in need of study are political practices (e.g. lobbying), business practices (e.g. use of litigation), product design and marketing. We believe that this approach applies well to the study of alcohol TNCs.

Although a growing amount of research has been conducted on the alcohol industry's marketing and corporate social responsibility (CSR) activities, it tends to be piecemeal, descriptive and a-theoretical. There is a pressing need for better methods, improved research designs and new theoretical approaches to guide this research.

Better methods could take the form of public health surveillance of advertising content using validated procedures capable of documenting violations of industry self-regulation guidelines [28]. The collection of both quantitative (e.g. code violations and marketing expenditures) and qualitative (e.g. corporate reports, stakeholder interviews) data would enhance the ability to conduct CHIAs related to alcohol marketing regulations.

Improved research designs are needed to take into account the complex nature of the alcohol industry and the direct (e.g. political donations) as well as indirect (e.g. CSR activities) ways in which it influences alcohol policy and alcohol consumption. The CHIA framework [27], for example, can be applied to alcohol TNCs to study the effect of different regulatory structures on the exposure of vulnerable populations to potentially harmful alcohol marketing and to compare different alcohol TNCs within and across countries.

A third area in need of improvement is theory. The alcohol field has few population-level theories to guide policymaking, despite having many policies, such as marketing bans and availability restrictions, which operate at the population level. Two current theories that would benefit from further development are availability theory and the epidemiological cascade.

Alcohol availability has been implicated as a key mechanism responsible for the development of alcohol problem epidemics, and it also contributes substantially to the endemic problem levels that characterize many countries [2,29]. Availability can be conceptualized in terms of at least four varieties: physical (e.g. convenience and access), economic (affordability), social (e.g. norms) and

psychological. The latter is conditioned by cultural expectations such as learned expectancies, and it determines how readily alcohol fits into a person's self-image and life-style. To the extent that alcohol marketing and product design influence psychological availability, this should be investigated as a possible mechanism for changes in alcohol consumption.

Another theory that can be used to guide marketing policy research is the application of the epidemiological cascade model to trace the influence of the alcohol industry on marketing policies, alcohol consumption and alcohol-related problems [30,31]. This framework [31] begins with government-sanctioned corporate profit-making, progressing through the analysis of industry decision-making and business practices, and ends with their impact on alcohol consumption and individual-level health and social consequences. The explained variable at one level is also the explanatory variable at the next lower level, establishing a causal chain that can be followed along the epidemiological cascade from the site of societal power (e.g. corporate marketing activities) down to the host.

The marketing strategies and the tactics used by TNCs to promote their products suggest the need for a comprehensive approach to the identification of both 'upstream' and 'downstream' causal mechanisms. The measures, research designs and theories can also be applied to the evaluation of statutory regulations. Evidence suggests that the industry's marketing activities contribute to the ongoing recruitment of women, young people and the emerging middle class in many developing countries, and may reinforce the hazardous alcohol consumption of male heavy drinkers [29]. These activities could increase the total volume of alcohol consumption through the promotion of more frequent drinking occasions. Future research should be conducted to test hypotheses derived from relevant theory in order to inform the policymaking process more clearly.

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None.

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Keywords Alcohol, alcohol problems, marketing, policy, public health, transnational corporations.

KATHERINE ROBAINA & THOMAS F. BABOR

Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington, CT, USA

E-mail: robaina@uchc.edu

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Toward a public health approach to the protection of vulnerable populations from the harmful effects of alcohol marketing

In the Introduction to this Supplement [1] three compelling themes were identified from this collection of systematic reviews, original research, commentaries, editorial statements and debate pieces. The first theme is that the regulation of alcohol marketing can be justified on the grounds of public health, public safety and human rights [2,3], given the evidence [4] that exposure to alcohol marketing is associated longitudinally with the initiation of drinking and alcohol-related problems in adolescents and other vulnerable groups. The second theme is that current national responses are insufficient in fulfilling the public health mission for which they were designed; that is, to prevent the harmful use of alcohol [5–8]. The third theme is that there are several promising options that governments and civil society organizations can consider to address these issues [9]. In this concluding statement we describe the implications of these findings for public health and public policy.

Despite attempts by the alcohol industry to promote self-regulation programs throughout the world, evidence from Latin America and the Caribbean indicates how regions with self-regulatory marketing codes continue to have high rates of youth exposure to alcohol marketing and code violations within multiple media [6]. There is no effective system for removing non-compliant advertisements [5,10]. Clear precedents exist for the use of international codes to protect children and vulnerable populations through global action [9], especially in cases where human rights considerations apply to children [3]. The World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) is a prime example of this. There are also examples of regulatory systems that can be instituted to govern any alcohol marketing codes that are recommended. Despite these promising tools, the challenges to effective protection of vulnerable populations are increasing as traditional media are supplemented by the use of digital media [10] and even Corporate Social Responsibility activities (a) for marketing purposes.

Governments are responsible for the health of their populations. They are particularly responsible for protecting children and adolescents from pressures to consume products such as alcohol that can cause ill health and other negative consequences. Early initiation of alcohol use endangers the development of human capital, and is likely to affect social and economic development as well. Vulnerable populations—such as young people, people genetically

susceptible to alcohol dependence and people in recovery—have the right to be supported in decisions not to drink.

As noted in the paper by Chapman *et al.* [3], the United Nations Convention on the Rights of the Child encourages the development of appropriate guidelines to protect children from information and material injurious to their wellbeing. In this context, young people have the right to grow up without being pressured by commercial inducements to drink alcohol, as they are now protected from commercial inducements to use tobacco. Global and regional efforts to implement comprehensive restrictions on alcohol marketing are an essential part of a global public health mission that includes population-level protections from the marketing of tobacco, breast milk substitute, and foods high in saturated fats, trans fatty acids, free sugars or salt.

How can we protect young people and other vulnerable populations effectively? Global action on alcohol marketing is needed now to prevent continued exposure to vulnerable populations. Based on the evidence described above, it seems appropriate for governments and policymakers to give serious consideration to the five key messages emerging from the Pan American Health Organization (PAHO) Expert Meeting on Alcohol Marketing Regulation [11], which are consistent with the well-documented premise that alcohol is not an ordinary commodity [12] and should not be marketed as such.

First, the most effective response to alcohol marketing is likely to be a comprehensive ban on alcohol advertising, promotion and sponsorship, in accordance with each country's constitution or constitutional principles. If a complete ban is not currently feasible, the French *Loi Evin* [13] offers an alternative model by beginning with a ban, and then in that context specifying within reasonable commercial boundaries the specific marketing activities that may be safely permitted. In countries where the promotion of alcohol cannot be banned entirely, messages and images should refer only to the characteristics of the product, such as its origin, composition, strength and means of production, and efforts should be made to keep messages from venues and channels likely to reach young people. The use of life-style images of drinkers, celebrities, sponsorships, endorsements or scenes depicting a normalized or idealized drinking context should be prohibited.

Secondly, regulation of alcohol advertising and promotion should be statutory, with enforcement responsibility

delegated to an appropriate public health agency of the local or national government, rather than regulated by the alcohol industry. Regulation should include print and digital media (including television and the Internet) as well as radio, point-of-purchase, product placements in television and movies and sponsorship of sports and other activities. The French model of incentivizing civil society engagement in enforcement is also worth replicating. To the extent that the alcohol industry self-regulation programs are likely to continue until statutory bans are implemented, monitoring and enforcement of self-regulatory codes should be transferred to well-resourced civil society or governmental bodies, designated by public health authorities and independent of the alcohol industry, with the ability to levy meaningful sanctions for violations. Governments should require, collect regularly from the alcohol industry and report to the public, information regarding alcohol advertising, promotion and sponsorship activities, including expenditures and fields of activity.

Thirdly, regulation should be independent of the alcohol industry, whose primary interest is growing its markets and maximizing profits. Given the conflict between commercial interests and a government's public health responsibility to protect vulnerable populations, alcohol producers should have no role in formulating information or policy relating to the safe use of their products. Media campaigns and messages about the low-risk use of alcohol should be formulated by a body independent of the industry, and should be factual in nature and avoid ambiguous concepts such as 'responsible drinking'.

Fourthly, in recognition of the global nature of alcohol marketing and the limitations of national regulation, a global agreement on the marketing of alcoholic beverages is needed to support country efforts to move towards a comprehensive ban on alcohol advertising, promotion and sponsorship. Such an agreement should be developed and disseminated by an international public health agency in accordance with each country's constitution or constitutional principles. Moreover, global trade agreements should not compromise the ability of national governments to regulate and restrict the marketing of alcoholic beverages, and should be balanced by global health agreements prioritizing government action to protect health.

Fifthly, given the role of alcohol as a major contributing factor to non-communicable diseases, collaboration with other population-level efforts to restrict marketing of potentially harmful products, such as ultra-processed food, sugary beverages, tobacco and breast milk substitutes, should be encouraged and supported. WHO and its regional offices should develop a common code for alcohol marketing regulation and practice to assist countries in the formulation of appropriate legislation or other mechanisms to implement and monitor regulatory controls on alcohol marketing.

In conclusion, the dramatic growth of alcohol marketing and its insinuation into every possible communication medium available to children and adolescents has created the conditions for unhealthy life-style choices that will burden individuals, families, communities and governments for years to come. As the papers in this Supplement have shown, there are reasonable measures to address the problem. The way forward is clear.

Declaration of interests

None.

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Keywords Advertising, alcohol, health, marketing, policy, protection, youth.

THOMAS F BABOR¹, DAVID JERNIGAN², CHRIS BROOKES³ & KATHERINE BROWN⁴

Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington, CT, USA,¹ Department of Health, Behavior and Society, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA,² UK Health Forum, London, UK³ and Institute of Alcohol Studies, Alliance House, London, UK⁴
E-mail: babor@uconn.edu

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