

Rapid review of evidence about alcohol marketing and advertising

**Influences on consumer attitudes and behaviours,
and the effects of regulation on those behaviours**

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Declaration of interests

Public Health Scotland (PHS) is funded by the Scottish Government. This review was commissioned by the Scottish Government to support Scottish Ministers in identifying potential options for the regulation of alcohol advertising or marketing. The review questions were decided by PHS in collaboration with The Scottish Government, and the Scottish Government has no influence on PHS's interpretation or presentation of the evidence. Public Health Scotland is committed to providing independent and impartial evidence to inform public health policy.

Abbreviations and glossary

Alibi marketing: a type of marketing where alcoholic drinks brand promote alcoholic drinks products without overtly mentioning the brand name, for example by using familiar colours, shapes or phrases, to circumvent advertising restrictions

AUD: alcohol use disorder; a medical condition involving impaired ability to control alcohol use despite adverse consequences

CYP: children and young people

HALY: Health Adjusted Life Year; a metric combining life expectancy and health quality into one measure

IAC Policy Index: The International Alcohol Control Policy Index; an international standardised tool for measuring stringency and impact of alcohol control policies

IARD: International Alliance for Responsible Drinking; a non-profit funded by major alcoholic drinks manufacturers, with the stated goal of reducing harmful drinking and promoting responsible drinking

Loi Évin: A law passed in France in 1991 to restrict advertising for alcohol and tobacco, notable for its novel approach of setting out what advertisers can or must do, rather than listing things they cannot do

MSMS - Maryland Scientific Methods Scale

PHS: Public Health Scotland

POS: point of sale; the physical setting where retail transactions take place, such as a shop till or supermarket checkout

SSAA: New Zealand's Sale and Supply of Alcohol Act 2012, regulating sale, supply and consumption of alcohol in New Zealand, including restrictions on marketing and advertising.

Surrogate marketing: a type of marketing where alcoholic drinks brands promote low- and no-alcohol products using recognisable core aspects of branding of their normal-

strength alcoholic drinks products, using this brand-sharing to promote all the products under that brand identity in circumstances where overtly advertising the alcoholic drinks product is forbidden

Executive summary

Introduction and aims

As part of the Scottish Government's commitment to reducing alcohol harm, they commissioned Public Health Scotland to conduct an independent review of research evidence related to the effects and potential restriction of marketing and advertising for alcohol.

The aim of this review was to identify potential areas of evidence-based action on alcohol marketing where it may reduce alcohol harm or improve public health, as well as any areas where the evidence base is inconclusive or lacking. The review questions are as follows:

Review question 1: What does the published evidence tell us about exposure to alcohol marketing and advertising (extent of exposure, impact of exposure on consumer responses)? Both in general, and:

- by population (general population, children and young people, hazardous and harmful drinkers), and
- by channel, and
- by partial vs. all-channel restrictions.

Review question 2: What does the published evidence tell us about the impact of alcohol marketing and advertising restrictions on consumer responses (i.e.: attitudes, behaviours, unintended consequences), both in general and:

- by population (general population, children and young people, hazardous and harmful drinkers), and
- by channel, and
- by partial vs. all-channel restrictions.

Key findings

The included literature

Sixty-five relevant, eligible articles were included. The highest-quality and most numerous evidence was mostly related to the extent (n=35) and effects (n=26) of exposure, but there was also a substantial range of evidence about the effects of restrictions on marketing (n=22). The literature was highly varied, covering many different high-income economies, many different marketing channels and settings, and including a broad range of research approaches and methods, including literature reviews, observational studies, experimental studies and qualitative research.

Extent of exposure to alcohol marketing and advertising

- Evidence about the extent of exposure primarily focused on children and young people.
- Exposure to alcohol drinks marketing is a weekly, often daily, occurrence for most people.
- Studies reported various demographic and lifestyle factors that appeared to be associated with type and amount of exposure, such as age, sex, consumption behaviours, area socioeconomic status, using public transport. However, the quantity and consistency of evidence on these associations was insufficient to draw conclusions.
- People are commonly exposed to alcoholic drinks marketing through a broad range of channels including (but not limited to) places where alcoholic drinks are sold, print media, broadcast media, sports and sporting events, billboard, alcohol-branded merchandise, and the internet.
- Settings of exposure that emerged as common focuses of the literature include: sports and sport events; areas around schools; public transport networks; and in and around businesses that sell alcohol.

Effects of exposure to alcohol marketing and advertising

- Most evidence suggests that exposure is associated with increased intention to consume, consumption, and harmful consumption.
- The evidence was heterogenous, covering a wide range of countries, settings and marketing channels using a variety of research methods
- While we cannot completely isolate the effects of one public health policy intervention from external factors, the evidence base includes a broad range of appropriate research designs, including evidence reviews, laboratory experiments and robust longitudinal observational studies. The consistency with which these diverse studies demonstrate similar positive associations reduces the risk that observed associations are attributable to external factors.
- Most of the evidence on effects of exposure focuses on children and young people; the evidence bases for effects of exposure in general populations and hazardous and harmful drinkers are smaller and less robust, and therefore less reliable, but do share similar conclusions.
- A limited evidence base on the content of marketing communications suggests that advertisements may drive purchasing more effectively if they contain contextual imagery (such as social events), health-oriented marketing messages, or sexual objectification. Conversely, the inclusion of long, standardised health messages appears to inhibit purchasing.
- Contrary to some claims that marketing is about market share rather than increasing consumption, and that alcohol marketing does not appeal to young people, the evidence base, comprising 26 studies, suggests that there is a relationship between marketing and consumption, including young adults and those under minimum legal drinking age.

Restrictions on alcohol marketing and advertising

- The evidence base for effects of restrictions is smaller and of lower quality than that on the effects of exposure, but the available evidence supports the conclusion that restricting alcohol marketing and advertising is an effective, and cost effective, way for the state to reduce alcohol consumption and related attitudes, behaviours and health outcomes.
- Restrictions of alcohol marketing and advertising are typically not evaluated robustly, but the near-uniform consistency of findings from a diverse range of research designs gives credibility to the conclusion.
- Some policies have had limited effects on exposure due to legislation not being sufficiently comprehensive to prevent advertisers using loopholes, such as exploiting grey areas in distinctions between restricted and non-restricted parts of stores.
- Voluntary self-regulation of marketing is not effective in reducing exposure and protecting vulnerable populations.
- There was limited evidence on the relative value of comprehensive restrictions in comparison to partial restrictions, and findings were mixed; comprehensive restrictions appear to be highly effective, but the evidence for whether channel-specific restrictions are proportionately as effective, proportionally less effective, or not effective is not consistent.

Interpretations

Our synthesis of evidence allows us to conclude with confidence that alcohol marketing and advertising is pervasive and persuasive, and frequent exposure to it drives alcohol consumption and related harms, including among children and young people.

The evidence for the effectiveness of restrictions on alcohol marketing and advertising is somewhat less clear cut, but the weight of evidence supports the

conclusion that restricting alcohol marketing and advertising can be effective, and cost effective, in reducing exposure and consumption. Evidence of effectiveness is particularly strong and consistent among children and young people, and when the measures are as comprehensive as possible. However, it is important to recognise that much of the evidence to support this conclusion comes from cross-sectional observational studies that cannot rule out external factors, and that one reputable systematic review concluded that there was insufficient evidence to say whether restrictions directly reduce consumption or not, although the authors did suggest that more definitive impacts may occur over the longer term.

Scotland experiences relatively high levels of alcohol-related harm. The Scottish Government has pledged to reduce the attractiveness of alcohol, in line with WHO recommendations, and while the evidence base around the effectiveness of restrictions is uncertain, evidence consistently suggests that alcohol marketing drives alcohol consumption. Any future restrictions on alcohol marketing and advertising should ideally be accompanied by programmes of evaluation to improve our understandings of whether, and in what ways, restrictions work.

Evaluation programmes should be longitudinal, comprehensive and conducted over a sufficiently long timeframe to allow evaluators to observe both immediate and longer-term outcomes. The programme should be theory-based, asking not just whether restrictions reduced consumption, but also examining what nuances of the design and implementation of any restrictions may have moderated that effect, such as the impact of design decisions around whether restrictions should be comprehensive or partial, and what specific aspects of content of advertising might be restricted. The programme should also consider any potential unintended outcomes that may arise from restrictions, and any inequalities in impact related to socioeconomic deprivation, sex and age.

Methods

We conducted a rapid review of published, empirical evidence about either the extent and impact of alcohol marketing and advertising or the effects of alcohol marketing and advertising regulations on consumer responses. We conducted thorough

literature searches of a broad range of major bibliographic databases, and systematic screening and data collection. We rated the quality of the methods of each paper using the Maryland Scientific Methods Scale.

We included English-language academic and grey literature publications from 2017 onwards that report primary or review-level evidence on either the impacts of restrictions on alcohol marketing and advertising on exposure, or the nature, extent and effect of public exposure to alcohol marketing and advertising.

We excluded evidence from non-high-income economies, evidence focused on specific subpopulations that are not relevant to Scotland, and evidence that focused on advertising channels that cannot be regulated within the powers devolved to the Scottish Government (e.g. broadcast media, social media).

1. Introduction

Restricting alcohol marketing is a potential way to address the attractiveness of alcohol, which is recommended by the WHO as one of the most effective interventions to reduce alcohol harm.^{1, 2}

Reducing alcohol harm is an aim of the Scottish Government, and is consistent with Public Health Scotland's strategic plan from 2022 to 2025.³ In accordance with this aim, the Scottish Government are committed to exploring how to reduce people's exposure to alcohol marketing, in particular children and young people. This is in line with WHO guidance that reducing the attractiveness of alcohol through comprehensive restrictions on advertising, sponsorship and promotion is one of the three most effective interventions to reduce alcohol harms. Public Health Scotland were commissioned by the Scottish Government to conduct a robust, independent review of the evidence base related to alcohol marketing and its restriction.

In 2022, PHS published an analysis of policy documents related to⁴ alcohol marketing restrictions across seven European countries,⁴ which found strong examples of ambitious marketing restrictions, but also found few cases where these interventions had been evaluated.

Our aim was to identify potential areas of evidence-based action on alcohol marketing where it may reduce alcohol harm or improve public health, as well as any evidence that suggests that restricting alcohol marketing may not work, and any areas where the evidence base evidence is inconclusive or lacking. We focus on high-income economies, and in addition to general population effects we give specific consideration to the evidence related to children and young people and hazardous and harmful drinkers.

Given that this evidence review is written with the Scottish policymaking context in mind, we have not sought evidence related to marketing channels that are either outwith Scottish Government powers or are impractical without four-nations or international cooperation. Specifically, we focus on: outdoor advertising (e.g. billboards, posters); advertising in public places (e.g. public transport networks); sponsorship of sports, sports events and other events; alcohol-branded merchandise;

retail display or point-of-sale (POS) merchandising; print advertising; and online advertising (excluding social media).

1.1. Review questions

Review question 1: What does the published evidence tell us about exposure to alcohol marketing and advertising (extent of exposure, impact of exposure on consumer responses)? Both in general, and:

- by population (general population, children and young people, hazardous and harmful drinkers), and
- by channel, and
- by partial vs. all-channel restrictions.

Review question 2: What does the published evidence tell us about the impact of alcohol marketing and advertising restrictions on consumer responses (i.e.: attitudes, behaviours, unintended consequences), both in general and:

- by population (general population, children and young people, hazardous and harmful drinkers), and
- by channel, and
- by partial vs. all-channel restrictions.

2. Methods

We conducted a rapid review of published, empirical evidence about either the effects of alcohol marketing and advertising regulations on consumer responses or the extent and impact of alcohol marketing and advertising. While our review was necessarily rapid, and not systematic, due to time and resource constraints, we took various steps to ensure that the need for timely evidence was balanced with the need for reliability, including thorough literature searches, rigorous double-screening of

search results and double-coded quality appraisal using an established tool to characterise the robustness of each paper. The methods are described in full in the Technical Report published alongside this report.

As described in greater detail in the Technical Report, we used the Maryland Scientific Methods Scale (MSMS) to rank the robustness of the research methods used in each paper, excluding those using methods to which the MSMS does not apply. The MSMS score ranges from 1 to 5, where 1 is the least robust (e.g. cross-sectional observational studies without control groups) and 5 is the most robust (e.g. randomised controlled trials), and the higher the score, the greater the potential of the research design in providing evidence of causality. Studies ranking 5 on the MSMS are extremely rare among evaluations of public health interventions, and those ranking 4 (e.g. quasi-randomised natural experiments) are rare. Some studies have been labelled as 'not rated', as not every study can be rated using the MSMS; for example we did not rate evidence reviews or modelling studies.

3. Findings

Following screening, 65 relevant, eligible articles were retained for inclusion. Collectively, the literature presents valuable evidence relevant to each of our review questions, but both the quality and quantity of evidence are greater for RQ1 (the extent and effects of exposure to alcohol advertising and marketing, n=50) than for RQ2 (the effects of restrictions on alcohol advertising and marketing, n=22). In this report we begin by presenting the evidence relevant to RQ1, which predominantly supports the interpretation that alcohol marketing and advertising does drive purchasing, before examining the evidence for RQ2.

The Technical Report, published alongside this report, includes an illustration of the numbers of articles identified, removed and retained at each stage of the search and screening processes, as well as a table summarising the title, aims, research method and sample of each included study.

For consistency, percentages are reported as integers throughout the Findings sections.

3.1. The extent of exposure to alcohol marketing and advertising

Key findings: extent of exposure

- Thirty-five studies included evidence about the extent of exposure to alcoholic drinks marketing and advertising, and the evidence primarily focused on children and young people.
- Exposure to alcohol drinks marketing is a weekly, often daily, occurrence for most people.
- People are commonly exposed to alcoholic drinks marketing through a broad range of channels including (but not limited to) places where alcoholic drinks are sold, print media, broadcast media, sports and sporting events, billboard, alcohol-branded merchandise, and the internet.
- There is some evidence that boys and men are exposed to more alcohol marketing than girls and women.
- Advertising in the vicinity of schools may be a source of children's exposure that is worth being investigated further.
- Sports and sports events emerged as potentially important site of alcohol advertising and marketing, and very large audiences, including children, can be exposed to extensive in-stadium advertising via TV broadcasts. Alcohol advertising in football stadiums is predominantly found on pitch-side billboards.
- Public transport networks were another common focus of policy and research, with vehicles and structures presenting direct and indirect alcohol imagery throughout cities, and advertising on buses and bus stops being a potential mechanism of social inequality in exposure to alcohol marketing.
- Businesses that sell alcohol (both on- and off-premise) are sources of exposure to alcohol marketing, inside, outside and in surrounding areas.
- Despite alcohol advertisements being commonplace, they were found to be less common in some settings than advertisements for gambling or HFSS products.

A total of 35 studies contained evidence relevant to the extent of exposure to alcohol marketing and advertising, spanning many different countries and a broad range of different channels or delivery mechanisms. A majority of these articles focused

wholly, or partially, on CYP or younger adults age groups; in section 2.1.1 we analyse eight articles that give a broad overview of the extent of CYP exposure to alcohol marketing and advertising through different channels in various countries. Articles rarely focused on hazardous and harmful drinkers; in section 2.1.2 we analyse the two articles that focused on this subpopulation. We then examine the evidence around three different marketing contexts that emerged from the evidence base as common focuses of study: sports and sporting events (n=13); public transport (n=5); and licenced hospitality venues and off-licence retailers (n=6). Finally, we examine studies that included evidence about gender differences in exposure to alcohol marketing and advertising (n=3).

3.1.1 Children and young people's exposure to alcohol marketing and advertising

3.1.1.1 Children (aged under 18, approximately)

Gallopel-Morvan and colleagues⁵ analysed a large survey to examine French teenagers' self-reported exposure to alcohol advertisements, and found that 30% reported having been exposed to alcohol advertisements almost every day in the previous year, with boys reporting significantly greater exposure than girls. Sites of reported exposure included supermarkets (73%), alcohol brands in films (66%), print advertisements (59%), billboards (55%), online advertising (54%), radio (50%) and public transit (40%), sports events or concerts (36%), video games (23%) and alcohol-branded merchandise (17%). Exposure to television advertisement exposure was not reported due to France's Loi Évin prohibiting alcohol advertising on television.

In Victoria, Australia, Faulkner and colleagues⁶ analysed self-reported data on exposure to alcohol advertising among school students (aged 12-17, n=4,413), and found that having been exposed to alcohol advertising in the previous week was most frequent through television or radio (58%); alcohol-branded merchandise (42%); the internet (39%); billboards, newspapers or magazines (37%); and sports events (28%). However, their data were collected in 2011, so may not reflect today's marketing landscape. More recently, also in Victoria, Australia, Bain and colleagues⁷

analysed a 2017 survey of the same population, and found that most students reported seeing alcohol advertising on television (61%), online (56%), at sporting events (either in person or on TV) (56%), while social media (47%), outdoor advertising (41%), newspapers (30%), magazines (29%) and radio (22%) were less frequent sources. Analysis of self-reported weekly exposure to alcohol advertising suggested that, on average, students see an alcohol advertisement every other day.

Also in Australia, Aiken and colleagues⁸ surveyed 351 "risky-drinking" Australians aged 16-19, and found that advertising channels to which participants had most frequently been exposed to alcohol advertising in the past 12 months included TV (89%), outdoor advertising (82%), large events (80%), print publications (76%), online (including social media; 60%), alcohol-branded merchandise (58%), radio (44%) and public transport (37%). Participants aged 18 or 19 were significantly more likely to have been exposed to alcohol advertising within licenced venues (76% vs. 39%, $p < 0.01$) while younger participants were more likely to report having seen advertising on outdoor billboards.¹¹

We found two cross-sectional observation studies that described the presence of alcohol marketing and advertising in areas around schools. Sneyd and colleagues⁹ studied 500 metre radius areas around 52 primary/intermediate and secondary schools in Auckland, New Zealand, stratified by school decile rating (an indicator of socioeconomic deprivation) and rurality. They found at least one advertisement for alcohol within 500 metres of a majority (56%) of sampled schools. These were largely displayed by off-licences or licensed hospitality venues (75%), but researchers also identified standalone posters (5%), flyers (5%) and billboards (4%). The authors found no statistically significant differences to suggest that the likelihood of a school having an alcohol advertisement within 500m varied by school level, region, decile or rurality.⁹

Mandzufas and colleagues¹⁰ conducted a similar study of 500m radius areas around a random selection of 64 primary and secondary schools in Perth, Australia. They identified 376 outdoor advertisements for alcohol within the study areas. As with Sneyd and colleagues', over half (56%) had at least one alcohol advertisement, though the average number of alcohol advertisements per school zone was substantially higher in the Australian study (5.9 alcohol advertisements per school

zone vs. 1.9). A substantial minority of advertisements were outdoor advertising on roadsides (31%), and a small amount on bus shelters (3%).

3.1.1.2 Young adults (aged 18+)

Noel and colleagues¹¹ analysed survey data of young adults (aged 18-25) in the US and found that the most prevalent channels of past-month alcohol advertising exposure were TV (77%), online banner advertisements (70%), alcohol sponsorships (69%), and social media advertisements (66%).

Zhang and colleagues¹² conducted a 14-day ecological momentary assessment to collect daily data on the experiences of 49 university students aged 18-35 in Hong Kong. They found that the channels through which participants were most frequently exposed to alcohol marketing included restaurants (30%), the internet (28%), public transport (15%), retail point of sale (POS) (11%), television (8%) and othersⁱ (8%). These proportions differ from the French, American and Australian studies in our sample, which may be symptomatic of cultural differences that limit the transferability of evidence from Hong Kong to Scotland.

3.1.2 Hazardous and harmful drinkers' exposure to alcohol marketing and advertising

Two articles focused on heavier drinkers' exposure to alcohol marketing and advertising. Lillard and colleagues¹³ analysed cross-sectional marketing survey data in the US (n=306,451), comparing heavy drinkers' exposure to television and magazine advertising with those of abstainers. They defined heavy drinkers as people who had had 33 or more drinks in the past 30 days, which is comparable to the hazardous drinking category in the UK. They found that people who prefer a specific type of alcohol tended to see a disproportionately high amount of advertising for that type of alcohol, and found that heavy drinkers saw more alcohol advertising than abstainers, regardless of type of alcohol preferred; for example,

ⁱ Including print publications and radio

heavy beer drinkers saw between 63% and 65% more TV advertisements for beer than those who drink no beer.

Guillou-Landreat and colleagues¹⁴ conducted analysis of a cross-sectional survey of 91 adults seeking treatment for AUDs in France, in the context of the Loi Évin. They found that a majority (77%) of participants reported that they could recall encountering alcohol advertising in the previous six months, mentioning having seen alcohol advertising on posters (43%), magazines (17%) and television (9%).

3.1.3 Alcohol marketing of sports and at sporting events

Fourteen articles, covering a broad range of countries and methodologies, focused either wholly or substantially on exposure to alcohol marketing through sports events, including association football, rugby union, the Australian Football League (AFL) and motor racing. Notably, these studies largely do not identify study population groups that are particularly engaged in sport, but approached the issue of marketing in sports as an issue affecting general populations. Much of this research analysed TV broadcasts. While the scope of our review does not include TV as a marketing channel, we have included findings from these studies that refer specifically to advertising physically present within sports venues, but not advertisements added as part of the TV broadcast production or commercial breaks.

The literature identifies sports events as significant sites of alcohol advertising and marketing, often making up a substantial proportion of research participants' exposure to alcohol advertising and marketing. Survey data from France⁵ and Australia,⁷ and body camera data from New Zealand,¹⁵ suggest that 30-50% of adolescents in these countries were exposed to alcohol marketing at sports events.

Purves and Critchlow's¹⁶ mixed-methods examination of alcohol sponsorship in professional football and rugby illustrates the depth to which alcohol sponsorship is ingrained within these sports in Scotland. All three rugby union teams/organisations and almost a third of football teams/organisations studied had sponsorship from one or more alcohol producers or distributors. In-depth case studies demonstrated the broad variety of ways in which sponsors are promoted, including: logos on kits; signage in and around stadiums; brands being exclusively stocked in stadiums and

fan zones; alcohol-branded club merchandise; and brand collaborations on social media.

Similarly, two studies^{17, 18} analysed the sponsors on professional sports teams' playing uniforms. Kaminski and colleagues¹⁷ analysed the presence of unhealthy product sponsorships on the kits of football clubs in ten major domestic leagues from around the world. They found that alcohol-related sponsorships reduced from being on 6% of kits in 2000 to 1% in 2022, with the bulk of remaining advertising sponsorship on kits being those worn by Spanish teams. Sartori and colleagues¹⁸ conducted a similar analysis of uniforms worn by Australian Football League (AFL) clubs in Australia, finding that 15 of the 18 clubs in the league had one or more alcohol sponsorships on their uniforms, with beer brands being particularly prevalent.

Seven articles^{16, 19-24} investigated the frequency and characteristics of alcohol advertising during sporting events by analysing TV broadcasts of those events. In these cases studying broadcasts provided a way to examine other forms of advertising, within scope, that are present at these events and delivered to wide audiences with broadcast as a conduit rather than the advertising medium itself.

Four studies used this approach to characterise advertising and marketing at major men's professional football tournaments. Noel and colleagues²⁴ identified 87 advertisements for 39 separate alcoholic drinks brands (primarily beer, as well as spirits) across 20 matches at the 2014 FIFA World Cup, hosted in Brazil. While the total included some on-screen advertising (added as part of the television production), 99% of appearances of advertisements were physically present within stadiums, with broadcasts averaging 1.9 appearances of alcoholic drinks brand per minute, or 2.8 during play. The authors noted that 86% of advertisements observed violated one or more codes in the IARD's Guiding principles for responsible retailing.^{24, 25} Similarly, Alfayad and colleagues¹⁹ analysed in-stadium advertisements for both alcohol and products high in fat, salt or sugar (HFSS) in UK broadcasts of 13 matches from the 2018 FIFA World Cup, held in Russia. They identified 1,807 separate brand appearances, a quarter of which comprised one beer brand. Purves and Critchlow¹⁶ analysed seven UK broadcasts of professional football and rugby union matches and found that football matches and highlight shows contained 79-164 alcohol references per broadcast (0.84-1.89 per minute), while an international

rugby union match broadcast contained 716 (3.97 per minute). These figures included commercial breaks in addition to advertising present within the stadiums, but the researchers did report that the most common forms of advertising were static advertisements and branded merchandise.¹⁶

Murray and colleagues studied seven matches at the UEFA EURO 2016 tournament, specifically analyse the frequency and timing of alibi marketing messages by one beer brand. They identified 746 appearances of the alibi marketing messages in approximately 13 hours of play, with appearances becoming particularly frequent during extra time and penalty competitions. Each of the four studies of football matches found that alcohol advertising at matches was most commonly found on pitch-side billboards.^{16, 19, 22, 24}

Critchlow and Purves²⁰ examined alcohol brand references in stadiums during 14 club and international rugby union matches in Ireland, after the commencement of legislation prohibiting advertising of alcohol products at sports events, excluding branded clothing. They observed 481 alcohol brand references, including alibi marketing messages and advertisements for low- and no-alcohol products.

Nuss and colleagues²³ analysed different types of unhealthy product marketing (including alcoholic drinks) during the Australian TV broadcast of the AFL (Australian Football League) grand final. Within 559 instances of unhealthy product marketing (452 of which were for HFSS products), the researchers identified 49 instances of alcoholic drinks product marketing within the stadium, most frequently a beer brand.

Barker and colleagues²¹ analysed alcohol-related content in 21 UK television broadcasts of 2018 Formula 1 (F1) World Championship motor racing events. Across 21 broadcasts, comprising 3,396 one-minute intervals of racing 1613 (56%) contained alcohol content, including branding for alcoholic drinks and low- or no-alcohol drinks products, and one beer brand in particular. This represented a statistically significant increase in alcohol content from a previous analysis of the 2017 World Championship, as well as a statistically significant decrease in the proportion of alcohol content that was for low- or no-alcohol products.

Three of these studies of sports events used TV viewership data to extrapolate their findings to determine the audiences that may have been reached by the advertisements studied. Alfayad and colleagues¹⁹ estimated that the 13 World Cup matches studied exposed UK viewers to 3.7 billion alcohol brand impressions across 13 matches (354 million of which were to children) while the seven EURO 2016 matches studied by Murray and colleagues²² were estimated to have delivered 7.43 billion alcohol marketing messages to adults and 358.6 million to children in the UK. Barker and colleagues²¹ estimated that the 21 F1 race broadcasts studied delivered 3.9 billion views of alcohol-related content to the UK population, including 154 million to under-16s.

Finally, Sharman and colleagues²⁶ investigated another potential site of marketing around professional sports events not related to TV broadcasts; alcohol-related content in 44 matchday programmes at professional football matches in England. They found that 3% of pages of programmes contained some form of alcohol exposure, and that there was an average of 0.6 alcohol advertisements per programme. Alcohol-related content was particularly uncommon in children's sections of programmes; the 39 programmes that contained dedicated sections for children averaged 0.08 incidents of alcohol exposure within children's sections. Overall, gambling exposure and advertising were substantially more common than alcohol.²⁶

3.1.4 Public transport

Five studies focused on the presence of alcohol marketing and advertising on public transport and related infrastructure, including on bus stops,^{27, 28} on subway station platforms,²⁹ on buses,³⁰ and on the areas surrounding bus stops.³¹

In 2021 Bristol City Council introduced restrictions on advertising a range of health-harming products and services, including alcoholic drinks, on council-owned advertising spaces, encompassing 861 advertising spaces at 283 bus stops. Scott and colleagues²⁷ conducted a survey (n=2,534) and interviews (n=7) to describe, among other things, the perceived advertising environment prior to implementation of restrictions. They found that 17% of respondents reported observing advertising for alcoholic drinks and 21% observed advertisements for businesses selling alcohol.

Advertisements for alcoholic drinks were for beer or cider (11%), spirits (9%) or wine (8%). Participants who used buses more often were significantly more likely to see unhealthy commodity advertising than those who used buses less frequently ($p<0.01$).

Parnell and colleagues²⁸ conducted a longitudinal assessment of the frequency and type of advertisements for different health-harming products and services on every bus shelter within 500m of a school in five districts of Perth, Australia. They found that alcohol advertising comprised 4% of the 293 adverts audited, or 12% of advertisements for health-harming commodities. Alcohol advertisements were less common than advertisements for unhealthy food or gambling.

Fullwood and colleagues²⁹ conducted an audit of the frequency of alcohol advertising on the platforms of 17 stations on two busy subway lines in New York City. They identified 26 alcohol advertisements, and 24 other advertisements in which alcohol was depicted. They found significant differences in the frequency of alcohol advertising between subway lines ($p<0.001$), but no statistically significant correlation between the SES of the area around a station and the frequency of alcohol advertisements ($p=0.19$).

Basch and colleagues³⁰ recorded and analysed incidental appearances of alcohol in advertisements on city buses in Manhattan, NYC. The researchers defined incidental appearances as instances of alcoholic-drinks being visible in advertisements for other products or services. Of the 136 advertisements observed, 25 featured incidental alcoholic drinks imagery. No brands were shown, but neither were health warnings or information about age of purchase. All of the advertisements featuring alcoholic drinks imagery were for either films (76%) or TV shows (17%), and were therefore often shown alongside famous actors. The drinks shown were typically wine or spirits, with only one occurrence of beer. The authors present their findings as illustrative of the fact that restricting advertisements for alcohol does not necessarily prevent favourable images of alcohol from being displayed in places where young people will be exposed to them.

Liu and colleagues³¹ used wearable cameras and GPS trackers to examine spatial distribution of children's ($n=122$, ages 11-13) exposure to outdoor alcohol advertising

in New Zealand. Participants captured 88 instances of alcohol marketing, which was much less common than unhealthy food marketing (n=1,035) and similar to gambling marketing (78%). Alcohol marketing was most commonly found around gambling outlets. Through spatial analysis of children's movements, their model estimated that children's exposure to each category of unhealthy marketing, including alcohol, could be reduced by approximately 86% by implementing advertising bans in 400m zones around bus stops, 59% by implementing bans within residential areas and 42% by implementing bans within 400m zones around schools.

3.1.5 Licensed hospitality venues and off-license retailers

Six studies provided detail about people's exposure to alcohol marketing and advertising in places where alcoholic drinks are sold. In this section we examine two that described alcohol environments in urban Spain, one in the US, and three that described supermarkets and other off-license retailers in New Zealand.

De la Fuente and colleagues³² used a photovoice methodology with 26 residents of two districts in Madrid to assess the alcohol environment from residents' perspectives. Participants expressed concern about the ubiquity and impact of alcohol, and alcohol advertising in the urban environment; highlighting posters and billboards on building fronts, and alcohol branded canopies and furniture on bar terraces. Villalbi and colleagues³³ conducted a comparable study of urban alcohol environments in Barcelona, but with fieldworkers conducting an audit of alcohol advertising and promotion. In the 20 census areas in Barcelona audited, the researchers identified 72 items of alcohol promotion and advertising in public thoroughfares, and noted that sponsorship of music events by drinks brands stood out. They assessed 306 businesses where alcohol is sold (including on-premise and off-premise), 91% of which had items on view that could be considered to promote alcoholic beverages. Of the 204 of the businesses that sold alcoholic drinks for consumption on the premises, 61% of which had alcohol branding on their terraces (e.g. on furniture). These findings may not be transferrable to the Scottish context, where outdoor drinking is less common. However, the Spanish findings were comparable with Trangenstein and colleagues³⁴ finding that 46.7% of 572 off-

licenses in Baltimore, Maryland had alcohol advertising visible from outside the building.

Two New Zealand studies examined alcohol advertising and marketing in supermarkets. McBride-Henry and colleagues³⁵ conducted a cross-sectional audit of two supermarkets' adherence to alcohol advertising legislation in New Zealand, and found extensive alcohol advertising and promotion inside and outside supermarkets. An earlier study by Chambers and colleagues³⁶ used wearable cameras to analyse children's exposure to alcohol marketing in supermarkets, and found that children encountered alcohol marketing in 87% of visits to supermarkets, and only 9% of participants who visited supermarkets were not exposed to any alcohol marketing. The researchers observed that alcohol marketing was frequently encountered close to everyday goods such as bread and milk, as well as near the entrances and exits. Another study based in New Zealand found that off-license retailers were associated with increased exposure to alcohol marketing, not limited to marketing in or on the shop itself, but also in the surrounding area.³⁷

3.1.6 Virtual worlds hosting interactive and immersive marketing for alcoholic drinks brands

Huckle and colleagues³⁸ exploratory content analysis and group participant observation of online metaverse environmentsⁱⁱ highlights a relatively novel facet of online alcohol marketing. They found that six of the 20 metaverses they examined had alcohol-related content. They explored two in depth that had alcohol brand marketing in the form of branded, immersive interactive virtual spaces where users can purchase alcoholic drinks for delivery, take part in various virtual 'drinking' activities and other experiences that include contextual themes of friendship, socialising and parties. The authors note that some of the interacting experiences seemed likely to appeal to children, and most did not have any type of age gating. This was the only paper we found that examined virtual spaces as settings of

ⁱⁱ Three-dimensional virtual online social spaces that the research team explored as a group

advertising, and while these spaces may not currently be on the agendas of policymakers, this evidence highlights the complex, evolving nature of marketing techniques, and the need for policy to be adaptive to those evolutions.

3.1.7 Gender and exposure

Relationships between gender and exposure were not part of our review questions or inclusion criteria, but we identified three papers that presented evidence related to the question of whether exposure to alcohol marketing and advertising varies by gender.

There was evidence from the US and New Zealand that men and boys are exposed more frequently than women and girls. Lillard and colleagues'¹³ analysis of US marketing survey data found that men were exposed to more alcohol advertising than women, particularly in younger age groups, and particularly advertising for beer. In the case of magazine advertising, this gender difference was largely explained by men's preference for sports and adult magazines. Chambers and colleagues'³⁹ body camera analysis of children's exposure to alcohol marketing and advertising in New Zealand found that children's exposure within their residential and school areas was patterned by sex, with boys having significantly greater exposure to alcohol marketing, both pre- and post-adjustmentⁱⁱⁱ.

Yoshida's and colleagues'⁴⁰ analysis of Japanese survey data from 15,683 adolescents aged 12-18 in Japan found that non-drinking boys (57%) were exposed to advertising less than non-drinking girls (63%) ($p < 0.001$), but that current-drinking boys (51%) were exposed more than current drinking girls (46%) ($p < 0.001$). However, the authors did not test the statistical significance of this difference as their study was mainly focused on associations between current drinking with exposure to

ⁱⁱⁱ Adjustment refers to the process of modifying statistical models to control for potential bias and confounding variables to and more accurately estimate the effect of the intervention (or independent variable of interest) on the outcome of interest.

alcohol advertising, for which they found no significant difference between boys and girls, with the exception of website advertisements, which has a stronger association among girls ($p=0.046$).

3.2. Effects of exposure to alcohol marketing and advertising

Key findings: effects of exposure

- Most of the evidence on the effects of exposure on alcohol marketing suggests that exposure is associated with increased intention to consume, consumption, and harmful consumption.
- As is typical for studies of public health policy effectiveness, completely isolating the effects of one intervention is not possible, but in this case the evidence base is persuasive given the broad range of appropriate research designs (including evidence reviews, laboratory experiments and some robust longitudinal observational studies) and the consistency of results across these different designs.
- Most of the evidence on effects of exposure focuses on children and young people. The evidence bases for effects of exposure in general populations and hazardous and harmful drinkers are smaller and less robust but share similar conclusions.
- The finding that exposure drives consumption was repeated across a broad range of countries, settings, and marketing channels.
- One study in the US suggests that the presence of alcohol advertising outside alcohol retailers correlates with area prevalence of violent crime.
- A limited evidence base on the content of marketing communications suggests that advertisements may drive purchasing more effectively if they contain contextual imagery (such as social events), health-oriented marketing messages, or sexual objectification.
- There is limited evidence that the inclusion of health messages about the health risks of alcohol consumption inhibit purchasing and consumption-related attitudes, but that longer, more detailed warnings may be more effective than brief ones.
- Contrary to some claims that marketing is about market share rather than increasing consumption, and that alcohol marketing does not appeal to young people, the evidence base suggests that there is a relationship between marketing and consumption, including children and young adults.

Twenty-six of the included papers examined the effects of exposure to alcohol marketing and advertising on consumption of alcoholic drinks, and related

behaviours. Almost uniformly, this evidence suggests that alcohol marketing and advertising is associated with alcohol consumption.

3.2.1 Effects of exposure among the general population

Giesbrecht and colleagues⁴¹ conducted a systematic review of systematic reviews on the relationship between alcohol marketing and use. They synthesised the findings of 19 systematic reviews, spanning a broad range of countries, subpopulations and research methods, including experimental evidence, longitudinal observational studies and economic analyses. Only one of the papers in their review was also among the literature in our review⁴² Giesbrecht and colleagues⁴¹ reported that findings were "fairly consistent regardless of methodology, or modes of advertising, or the quality of the review" and concluded that "advertising and marketing is associated with drinking intentions, levels of consumption, and harmful drinking".

The authors also found that the influence of advertising and marketing on CYP emerged as a frequent focus of the literature on the effects of exposure to alcohol marketing.⁴³ The results of our literature search and screening support that finding. Only five of the primary studies that presented evidence about effects exposure to alcohol marketing and advertising focused on general adult populations, each one had substantial limitations, and none were conducted in the UK.

Casswell and colleagues⁴³ analysed IAC survey data of drinkers (defined as having consumed an alcoholic drink in the past six months) aged 16-65 in New Zealand and St Kitts and Nevis, to investigate relationships between liking of marketing (not exposure), increased alcohol consumption and various demographic factors. They found that reporting greater liking for alcohol advertisements predicted greater consumption of alcohol, and that liking alcohol advertisements mediated relationships between age, gender, education and consumption, particularly in New Zealand. The study was limited by the cross-sectional nature of the data, but the researchers' use

of path analysis^{iv} allowed them to model complex connections between demographic factors, policy-relevant behaviours and consumption.

Lillard and colleagues¹³ analysed alcohol advertising in magazines using a large marketing survey dataset collected in the US between 1996 and 2009. They found that heavy drinkers saw more alcohol advertising in magazines than did abstainers, and that men more than women, which they attribute to men being more likely to read sports and adult magazines. However, the usefulness of this data is limited by its age and its cross-sectional nature, as the researchers could not infer a causal link, or direction of causality, between exposure to alcohol advertising and alcohol consumption.

De la Fuente and colleagues³² used a photovoice design to conduct participatory action research with 26 adults aged 39-78 in Madrid, to document the alcohol environment as perceived by residents. Participants collectively expressed the belief that the ubiquity of alcohol marketing and advertising within the urban environment would drive alcohol consumption, although notably they perceived this as a risk to younger people, not to their age groups. However, the usefulness of these findings is limited by it being the subjective experience and expectations of a small sample of participants.

While the evidence almost uniformly examined impacts on alcohol consumption and other attitudinal and behavioural variables that might lead to alcohol consumption, one paper was unique in analysing violence related to advertising outside off-premise alcohol outlets. Trangenstein and colleagues³⁴ conducted an observational study comparing directly-observed advertising outside alcohol retailers across Baltimore, Maryland, USA with routine violent crime data. After appropriate adjustments for outlet characteristics and neighbourhood characteristics, the authors found statistically significant relationships suggesting that publicly visible alcohol advertisements outside alcohol retailers were associated with approximately 15%

^{iv} A statistical analysis technique that researchers can use to measure or estimate both direct and indirect effects on outcomes of interest.

more aggravated assault, forcible rape, and robbery and nearly 30% higher levels of homicide.³⁴ The authors suggested that advertising's impact on violent crime is mediated by advertising's impact on alcohol consumption, as well as potentially violent or aggressive social norms shaped by the content of advertisements.

While the balance of evidence identified here suggests that alcohol marketing and advertising do stimulate consumption, the bulk of the evidence is cross-sectional and/or non-controlled, and none scored higher than 2 on the MSMS, meaning that their findings are subject to uncertainty. One study suggested that advertising may not drive consumption; Alonso Dos Santos and colleagues⁴⁴ used eye-tracking and a questionnaire to conduct a randomised experiment with 180 adults in Chile, specifically focused on the influence of alcoholic drinks sponsorships on sports spectators. Participants spent more time looking at advertisements featuring beer brands, and had increased recall of those advertisements, but there was no evidence that that attention and recall led to increased intention to consume the product. However, the authors emphasise that their observations were based on a very specific context, sample and procedure, and merit further research.⁴⁴

In the following sections we examine evidence on the effects of exposure to alcohol marketing and advertising on two key subpopulations: CYP and hazardous and harmful drinkers.

3.2.2 Effects of exposure to alcohol marketing and advertising on children and young people

3.2.2.1 Evidence reviews

Fourteen articles provided evidence on the effects of exposure in children and young people. Three of these are literature reviews. Most of the evidence synthesised in Giesbrecht's and colleagues⁴¹ systematic review was either focused on CYP, or found that the effect of marketing on alcohol-related attitudes and behaviours is particularly strong among CYP.

These findings were largely supported by a literature review⁴⁵ synthesising 14 studies from high-income economies with high prevalence of both youth alcohol consumption and alcohol advertising. The authors found that the balance of evidence strongly suggests that exposure to alcohol advertisements is associated with CYP's intentions to consume alcohol, and actual alcohol consumption. They found that the causal link is strongest when the individual reports liking the advertisement, weakens as the individual ages, and is weaker if the individual has a negative attitude towards alcohol. They also found evidence that proximity to schools, exposure to alcohol promotion in stores, possession of alcohol-branded merchandise and being male each drive alcohol consumption among CYPs. The authors note that the evidence typically relies on self-reported data that is vulnerable to bias, but nonetheless they conclude in strong terms that alcohol advertisements are the one factor that influence nearly every adolescent's alcohol consumption in every country.

Each of these reviews found evidence that the effects of advertising exposure can be cumulative, where the greater the number of alcohol advertisements encountered in the preceding month, the greater an individual's likely alcohol consumption.^{41, 45}

Booth and colleagues⁴⁶ conducted a narrative review to explore the evidence about the effects of exposure to alcohol-related stimuli in licensed venues in people below minimum legal drinking age. Of the 65 articles the authors included, 21 are relevant to our review questions as they relate to exposure to advertising rather than other alcohol-related stimuli. Consistent with Giesbrecht and colleagues⁴¹ and Boggs and colleagues⁴⁵ they found that the balance of evidence supported the conclusion that exposure to advertising drives alcohol consumption, earlier initiation of drinking and more hazardous drinking among CYP.

3.2.2.2 Primary studies

The remaining evidence relevant to the effects of alcohol marketing on children comes from 11 primary studies, which we have categorised into focusing on either children and teenagers (aged 18 or below, n=6) and young adults (aged over 18, n=5).

Friedman and colleagues⁴⁷ used a survey to show a large sample adolescent boys (n=1,220) from Ohio, US advertisements for different products (alcoholic drinks, non-alcoholic drinks and other health-harming products) and record self-reported enjoyability, likeability and appeal of the advertisements. Their analyses found that attitudes differed by product, with alcoholic beverages being associated with less positive attitudes than non-alcoholic beverages, but more positive attitudes than tobacco. They also found that the presence of themes of masculinity in advertisements had a significant positive impact on the (all-male) participants' attitudes towards alcohol advertisements.⁴⁷

The remaining evidence on under-18s in this section came from cross-sectional observational studies. Yoshida and colleagues⁴⁰ conducted analysis of survey data from 15,683 adolescents aged 12-18 in Japan, which is notable for its relatively low underage drinking rates; (6% in 2017)⁴⁰ only 2% of their participants reported being current drinkers. Their analysis was rigorous, using multivariate logistic regression models adjusted for relevant demographic, educational and behavioural variables. They found that any exposure to alcohol advertising was predictive of current drinking (OR 1.67; 95% CI: 1.34, 2.09), and that this relationship was consistent before and after adjustment.

Two of the cross-sectional studies concerned Australian youth. Bain and colleagues⁷ used a large sample of school students (aged 12-17, n=3,618) in Victoria, Australia, and conducted rigorous controls for covariates in their multinomial logistic regression analysis. They found statistically significant positive relationships between weekly or higher exposure and being a drinker for each of the eight types of advertising channels studied (p values ranged from <0.001 to 0.002) and with particularly strong associations found for radio (RRR 2.96, p<0.001), social media (RRR 2.60 p<0.001), internet (RRR 2.56 p<0.001) and sporting events (RRR 2.40, p<0.001).

Faulkner and colleagues⁶ also studied school students (aged 12-17, n=4,413) in Victoria, analysing self-reported data on alcohol consumption and exposure to alcohol advertising, adjusted for relevant control variables in multivariate regression analyses. They found they found that likelihood of having consumed alcohol in the previous month was predicted by both exposure to billboard or print advertising (p<0.001) and ownership of branded merchandise (p<0.001). Further, they found that

weekly exposure to alcohol advertising through these channels increased the likelihood of risky drinking (defined as having had five or more drinks in one day in the past week; $p < 0.001$).

Each of the studies based in Australia,^{6, 7} and the study based in Japan⁴⁰ found that cumulative exposure to alcohol advertisements in different advertising channels was associated with increased consumption ($p < 0.001$).

Aiken and colleagues¹⁸ observational study included participants both under and over 18, and the authors differentiated between the two age groups in the analysis. Their chi-square analysis of survey data ($n=68$) found that under-18s reported alcoholic drinks advertisements made them want to purchase some categories of drinks, most notably apple cider (41%), liqueur (42.9%), whisky (28%) and beer (28% or 29%, depending on the specific advertisement). Under-18s were significantly less likely to want to try whisky than over-18s (chi-square 3.88, $p < 0.003$), but there were no other significant differences between the age groups. However, the statistical analysis was relatively basic, and the sample sizes were small.

Gallopel-Morvan and colleagues⁵ surveyed 6642 school students (mean age 17.3) from 198 schools across France to measure how effective the less-comprehensive 2015 version of the Loi Evin is at protecting adolescents from alcohol advertising. The authors used chi-square tests, controlling for the effects of school and social class, to analyse data from self-completed questionnaires. They found that, of the 39% of participants who recalled having seen alcohol advertising in the previous year, 20% found the advertisement attractive, and 13% felt like having a drink after being exposed, and that these responses were significantly stronger among boys than girls. Perhaps notably, 19% felt that the last alcohol advertisement they remembered seeing was targeted at their age group, despite that age group being beneath the legal age to purchase alcohol.⁵

The remaining five studies in this section relate to young adults aged over 18. Two of these were cross-sectional observational studies. As described above in reference to under-18s, Aiken and colleagues¹⁸ also analysed young adults' responses to alcohol advertisements in Australia ($n=68$). They found that over-18s reported that alcoholic drinks advertisements made them want to purchase some categories of drinks, most

notably apple cider (41%), liqueur (29%) and beer (28% or 16%, depending on the specific advertisement). However, as noted above, the statistical analysis was relatively basic and the sample sizes were small.

Noel and colleagues¹¹ secondary analysis of American cross-sectional survey data (n=390) found that, after making appropriately adjustments to logistic regression models, being exposed to any form of alcohol marketing made participants 3.35 times more likely to experience any negative consequences of alcohol (95% CI: 1.19, 9.44). However, when disaggregating by marketing type, the authors only found a statistically significant relationship with TV advertisements. As the authors noted, the alcohol industry in the US spend more on TV advertisements than radio, print and outdoor advertising due to the large numbers of viewers they can reach. They also note that the data were collected during the Covid-19,¹¹ a period then TV viewing was likely to have been particularly frequent.

The remaining three studies in this section used lab-based experimental designs to investigate the effect of advertising on young adults⁴⁸⁻⁵⁰ These designs allowed researchers a high level of control over external factors that might influence outcomes, but their removal from context can limit their transferability to real-world policy contexts, and this type of research is not eligible to be rated by the MSMS.

Courtney and colleagues⁴⁹ conducted a controlled laboratory experiment with 53 university undergraduates in the US, using MRI scans to assess the relationship between exposure to different types of advertisements, activation in the brain's reward system, and self-reported alcoholic drink consumption. They found that alcohol advertisements activated the reward system, and that that activation was positively correlated with participants' self-reported previous-month alcohol consumption, which was not the case with advertisements for food.

Noel and colleagues⁴⁸ conducted a non-controlled experiment to investigate relationships between individual psychological characteristics and vulnerability to alcohol marketing among US university students by showing participants advertisements then recording their responses to questions about their perceptions of alcohol consumption, responsible drinking, excessive drinking and the appeal of the advertisements shown. The researchers adjusted for relevant demographic

variables and AUDIT risk scores and identified three psychological traits that increased participants' vulnerability to alcohol marketing: greater positive expectations related to alcohol; sensation-seeking; and alcohol dependence symptoms. The authors suggest that future advertising regulation may seek to take these vulnerabilities into account, specifically by taking inspiration from France's Loi Évin and limiting the content of alcohol marketing to simple, factual details about the brand and features of the product, preventing vulnerable people from being exposed to marketing communications associating alcoholic drinks with success or sensation-seeking activities.

Zerhouni and colleagues⁵⁰ conducted a controlled laboratory-based experiment with French university students, examining exposure to alcohol marketing by a beer brand in video coverage of sports events. The researchers found that exposure to a well-known advertising brand led participants to have more positive attitudes towards that brand specifically, and to alcohol in general, when measured immediately after watching the video. They also found that the strength of this effect did not vary depending on the cognitive resources available to the viewer at the time of viewing, which the authors present as evidence that alcohol advertising can effect sports viewers regardless of how much conscious attention they are paying to the advertisements. This highlights a potential mechanism by which sports advertising may be particularly effective.

3.2.3 Effects of exposure to alcohol marketing and advertising on hazardous and harmful drinkers

While CYP were a common focus of evidence, few articles specifically studied the effects of exposure to alcohol marketing and advertising on hazardous and harmful drinkers. In some cases, researchers recorded and reported whether their participants were hazardous or harmful drinkers or not, but only used that data as a means of adjusting statistical analysis about broader relationships between exposure to marketing and advertising and consumptions, not within hazardous and harmful drinkers as a subpopulation.¹¹ In this section we examine a review that focused on evidence related to hazardous and harmful drinkers, as well as those either seeking treatment for, or in recovery from, an AUD.

The most extensive contribution to the evidence about this subpopulation came from Murray and colleagues⁵¹ rapid review synthesising 11 studies, of which five focused on participants with hazardous or harmful levels of consumption and six on participants recovering from an AUD. The evidence included both experimental and observational studies, and covered North America, Australasia, the UK and other European countries. The authors used a broad definition of marketing (encompassing promotion, place, product and price), but excluded evidence on minimum pricing or taxation.

Their synthesis of quantitative evidence found that both hazardous and harmful drinkers and people with AUDs may be disproportionately likely to be affected by alcohol marketing, in terms of consumption of alcohol, speed of reaction to alcohol-related images, perceptions of alcohol advertisements as appealing and. Qualitative studies supported this, with heavy drinkers and those who are recovering from AUDs in France,¹⁴ New Zealand⁵² and the US⁵³ expressing concerns that alcohol marketing made their recoveries more challenging. The French study was also identified in the relevant literature for our review.

Murray and colleagues⁵¹ identified one experimental study that did not find evidence of impact of alcohol marketing on hazardous drinkers, though the authors of that study highlight that the laboratory setting and the proportion of alcohol advertisements shown within the experiment may not be reflective of the real-world, and concluded that restricting alcohol advertising may reduce heavy drinkers' positive alcohol-related emotions.⁵¹

3.2.4 Effects of different types of advertisement content

The potential impacts of alcohol marketing are likely mediated through norms and attitudes towards alcoholic drinks that specific aspects of advertising content may leverage. In this section, we examine four articles that presented evidence about how different aspects of advertising content, including positive contextual imagery, sexual objectification, health-oriented marketing messages and health warnings, may moderate the effects of alcohol advertising and marketing.

3.2.4.1 Contextual imagery

One potential area of advertising content restrictions, such as in France's Loi Évin, is the restriction of contextual imagery in advertisements that associate the product with certain social contexts designed to be appealing. Critchlow and colleagues⁵⁴ conducted an online randomised experiment with 2,421 UK adults to investigate the extent to which removing positive contextual imagery from alcohol advertisements affected self-reported advertisement attractiveness, product appeal, intention to try, perceived harm and perceptions of alcoholic drinks as enjoyable.

The authors found that the removal of positive contextual imagery was associated with modest, but significant, reductions in advert attractiveness, product appeal, intention to try and making drinking alcohol seem. The authors conclude that these two measures may reduce the persuasive power of alcohol advertising and increase perceptions of the health-harming nature of alcoholic drinks, but they note that more research is necessary to understand the nuances of different potential content restrictions and health warnings.⁵⁴

3.2.4.2 Sexually objectifying content

Rodgers and colleagues⁵⁵ conducted a randomised experimental study of 874 people aged 15-17 in the US, with the aim of testing whether sexual objectification of women in magazine advertisements for alcohol is associated with expectancies that alcohol can facilitate sex. They exposed one group of participants to a sexually-objectifying advertisement, and the other group to the same advertisement digitally altered to be less objectifying. The researchers conducted complex path analyses that allowed them to map out various direct and indirect relationships that illustrate how sex-related alcohol expectancies were affected by measures including: perceived realism; wishful identification; assessment that advertisements suggest that alcohol can facilitate sex; and enjoyment of sexualisation. They found a strong relationship between the objectification in advertisements and having the impression that alcohol advertisements suggest that alcohol facilitates sex, which itself was positively related to sex-related alcohol expectancies. The authors conclude that, despite alcohol industry codes that prohibit advertisements from linking alcoholic drinks to sex, the

results of their experiment suggest that advertisers are able to do by using objectifying images of women.⁵⁵

3.2.4.3 Health-related marketing claims

Haynes and colleagues⁵⁶ conducted an experiment using a survey of a nationally representative sample of adults in Australia who had consumed alcohol in the preceding year (n=1,960). They showed participants different potential health claims to investigate how health-oriented marketing messages might affect perceptions of the healthfulness of alcoholic drinks, and what bearing might demographic and individual characteristics have on those perceptions. The health claims used included claims about alcohol content, calorie content, sugar content, carbohydrate content, the absence of preservatives and the drink being a 'seltzer'. A majority (75%) of participants thought that one or more of the health-oriented marketing messages they were shown meant that the product was 'better for you' (compared with an absence of health claims). Young adults were disproportionately likely to develop misconceptions about the healthfulness of alcoholic drinks products based on health-oriented marketing messages, and residing in a high-SES area was predictive of a lower likelihood of misconceptions. The analysis also identified differences by gender; women were less likely to hold the misconception that the category of alcoholic drink is as important to health as the alcohol content, and to perceive claims of being vegan or gluten free as 'better for you', but were more likely than men to associate claims of low sugar and being 'light in alcohol' with healthfulness.⁵⁶

3.2.4.4 Health warnings

Dossou and colleagues⁵⁷ conducted in-depth qualitative interviews with 26 people aged 15-29 in France to explore the reception of health warning text on print advertisements for alcoholic drinks, which have been mandatory under the Loi Évin since 1991. The text, displayed at the bottom of advertisements, translates as "alcohol abuse is harmful". They found that approximately two-thirds of their sample recalled the text warning, with some able to recite it by heart, but the majority of participants said it had no effect on their purchasing behaviours. Participants suggested that people have been desensitised to the warnings over time through

overexposure, and that the message was too soft compared to equivalent messages used on tobacco products. Participants felt that the warnings were more likely to influence low-to-moderate drinkers than heavy drinkers. The authors conclude that France's currently mandated health warnings may not be adequate.⁵⁷

Critchlow and colleagues⁵⁴ (as described in section 2.2.4.1) experimental study found that, with UK adults, multiple text health warnings (specifically, a graphic containing three warnings about different aspects of the health harms associated with alcohol, and a link to an NHS information web page) would be more effective than the message of "Please drink responsibly", which is currently used in alcohol advertising in the UK under a voluntary arrangement. Multiple warnings were more effective in terms of reducing product appeal, reducing intention to try, increasing perceptions of harm and decreasing perceptions of alcoholic drinks as enjoyable.

3.2.5 Do alcohol marketing and advertising drive consumption or brand selection?

One article was unique in our selected literature for its focus on reviewing data and documents collected and published by the alcoholic drinks industry regarding claims about how and why advertising works.⁵⁸ They conducted a review to assess common claims made by the alcohol industry in official statements, documents and consultation responses about the function of alcohol marketing. They identified five claims: that advertising primarily affects brand choice; that advertising does not stimulate consumption, that any relationships between advertising and consumption are not causal; that advertising does not promote irresponsible or harmful drinking; and that advertising does not influence young people.

Instead of searching bibliographic databases for scientific literature, they sourced literature published by the Institute of Practitioners in Advertising (n=31) and Scottish Institute of Practitioners in Advertising (n=9) from 1981 to 2016, both trade associations of the UK advertising and marketing industry. The research reported in these publications was predominantly quantitative, often longitudinal, commonly using regression models, and were controlled in some cases. As such, many of them used methods that are appropriate to evaluating causal relationships between

advertisements and behaviours. In addition to evidence of effectiveness, some of the literature described potential psychological, attitudinal and social mechanisms underpinning the potential effectiveness. While the focus on industry-produced evidence is unusual for an evidence review, both the authors' transparent and methodical approach to identifying studies and extracting data and the types of research methods used in the literature suggest that the review was legitimate.

The authors found that industry evidence strongly supports the claim that advertising influences brand choice to increase market share, but also strongly undermines the claim that advertising does not increase consumption, with the literature illustrating how advertising campaigns had increased consumption, including by recruiting new drinkers, creating new occasions for drinking and targeting heavy drinkers. The industry literature did not provide evidence for whether advertising drove underaged or heavy drinking, but they revealed that recruiting new drinkers was a stated aim of some marketing campaigns, particularly among product categories that rely on high-consuming customers.⁵⁸

Boggs and colleagues' review,⁴⁵ described in section 2.2.2.1, found that the evidence base largely supported the conclusion that advertising exposure drives consumption, but identified one study that provided evidence to the contrary. It found that advertising drove brand choice among adolescents, but not necessarily consumption,⁵⁹ which supports the first two industry claims identified by Maani Hessari and colleagues,⁵⁸ but is at odds with the claim that advertising does not influence young people.⁴⁵

3.3. Restrictions on alcohol marketing and advertising

Key findings: effects of restrictions

- The evidence base for effects of restrictions is smaller and of lower quality than that on the effects of exposure, but the available evidence supports the conclusion that restricting alcohol marketing and advertising is an effective, and cost effective, way for the state to reduce alcohol consumption and related attitudes, behaviours and health outcomes.
- Most interventions that restrict alcohol marketing and advertising have not been evaluated robustly, or at all, but the near-uniform consistency of findings across a diverse range of research designs gives credibility to the conclusion.
- Some policies have had limited effects on exposure due to legislation not being specifically sufficiently comprehensive to prevent advertisers using loopholes.
- Voluntary self-regulation of marketing is not effective in reducing exposure and protecting vulnerable populations.
- There was limited evidence on the relative value of comprehensive restrictions in comparison to partial restrictions, and findings were mixed; comprehensive restrictions appear to be highly effective, but the evidence for whether channel-specific restrictions are proportionately as effective, proportionally less effective, or not effective is not consistent.
- Similarly, the limited evidence on the merits of implementing marketing restrictions alongside other alcohol control restrictions presents mixed

We identified 21 studies that included evidence about the impacts of restrictions on alcohol marketing and advertising, including evidence on effects on behaviours (such

as purchasing or consumption), on exposure to marketing and advertising, and on attitudes, as well as evidence on compliance with restrictions, the role of voluntary self-regulation by the advertising industry, and evidence about the relative value of comprehensive and channel-specific restrictions. This evidence covers a broad range of locations and research designs, including international literature reviews, cross-country observational studies, within-country observational studies and modelling studies.

In this findings section we report the score that we assigned to each suitable paper on the MSMS (as described in the Methods section), where 1 is the least robust (or least able to provide evidence of causality) and 5 is the most robust (or most able to provide evidence of causality). This is specifically relevant to this findings section because we are interested whether the evidence base points to any causal relationships between interventions and outcomes. Literature reviews and modelling studies were not rated.

3.3.1 Effects on behaviours

Effectiveness of restrictions on marketing and advertising can be challenging to evidence because they typically lack formal evaluations, and where evaluations exist, it is inherently challenging to fully isolate any observed changes as being caused by specific restrictions rather than some other factor, or to compare observed changes against a counterfactual. Illustrating this, Scobie and colleagues⁴ policy analysis of alcohol marketing restrictions in Estonia, Finland, France, Ireland, Lithuania, Norway and Sweden found that few comprehensive evaluations had been conducted (or published), and that marketing restrictions have often been introduced alongside other policies that make it challenging to isolate the effects of marketing restrictions. These findings were supported Purves and colleagues⁶⁰ mixed-methods research, commissioned by Alcohol Focus Scotland to complement ⁶⁰the analysis of Scobie and colleagues.⁴

3.3.1.1 Evidence reviews

We identified two evidence reviews that synthesised evidence on the effects of marketing and advertising restrictions. Burton and colleagues⁶¹ conducted a rapid review of evidence (MSMS: not rated^v) from European countries on the effectiveness and cost-effectiveness of different policies designed to reduce alcohol-related harm, including some that targeted marketing. They concluded that the balance of evidence supports both the effectiveness and cost-effectiveness of policies to restrict marketing, assuming compliance is mandatory, and that comprehensive advertising bans are likely to be particularly effective. However, due to the review's encapsulation of multiple types of alcohol policy, there was little detail on the nuances of restricting specific marketing channels rather than marketing in general.⁶¹

Manthey and colleagues⁶² conducted a systematic review (MSMS: not rated) covering 45 localities (predominantly high-income economies) with the aim of reviewing the evidence for the effectiveness of both total and partial bans on alcohol marketing in directly reducing alcohol consumption. Evidence of alcohol marketing restrictions successfully reducing (sales-based) alcohol consumption included Norway's comprehensive ban,⁶³ Spain's partial ban restricting advertising of high-strength products,⁶⁴ and an economic modelling study that used data from 20 different countries to model the effects both partial and complete bans.⁶⁵ However, the authors identified that most other studies found no significant evidence of an effect, and conclude that, overall, the evidence is insufficient to conclude that restricting alcohol marketing is effective in reducing consumption.⁶² Manthey and colleagues⁶⁷ clarify that they did not find sufficient indirect evidence to reject the claim that marketing restrictions reduce alcohol consumption, and suggest that indirect evidence of their likely effectiveness, paired with the relatively low cost of

^v As described in the Methods section, we rated the robustness of each paper (where possible) on the Maryland Scientific Methods Scale (SMS), where 1 is least robust and 5 is most robust.

implementing them, means that marketing restrictions will likely have long-term health-benefits if they are comprehensive, well-enforced and rigorously evaluated.

There was no overlap in the literature included in these two reviews. While these two reviews reach different conclusions, two commonalities between them are that they highlight the importance of restrictions being as comprehensive as possible, and they identify the benefit of marketing restrictions being a relatively low-cost intervention.

3.3.1.2 Cross-country observational studies

Three papers reported cross-country observational studies investigating effects of alcohol marketing restrictions. Rehm and colleagues⁶⁶ conducted longitudinal linear regression analyses (MSMS level 3) of alcohol consumption per capita before and immediately after the introduction of alcohol control policies in Poland, Latvia, Lithuania and Estonia. They used time series data from 2000 to 2020 and linear regression models, introducing interactions by country, year, and policy to isolate observed effects as effectively as possible without a conventional control group. While they found that interventions targeting affordability and availability were effective, the authors did not find a significant relationship between marketing restrictions and consumption. They, like Manthey and colleagues⁶², above, suggest that marketing restrictions are likely to take longer to produce results than the two other 'best buy'^{vi} alcohol interventions, and are therefore more challenging to find evidence with econometric analyses, rather than concluding that they do not work.⁶⁶

Leung and colleagues⁶⁷ presented an international collaborative cross-sectional observational study (MSMS rating 1) of how different alcohol control policies relate to alcohol abstention across 13 high- and middle-income economies. They used the

^{vi} The World Health Organisation describes interventions that are evidence-based and cost-effective as 'best buys'. Enforcing comprehensive restrictions on alcohol advertising, sponsorship and promotion is one of their recommended best buys for controlling alcohol-related health harms.

IAC Policy Index^{vii} to rate the stringency of each country's alcohol control policies in general, as well as rating individual domains of policy (including marketing) individually, and assessed correlations between those scores and each country's recorded lifetime abstinence. They found that the IAC policy index score of alcohol marketing policies correlated positively with lifetime abstinence ($r=0.8$, $p=0.001$), and they found that, while overall IAC policy index score (encompassing all categories of policy) was effective ($r=0.76$, $p=0.003$), marketing was the most effective of the policy domains included in the index. The authors conclude that restricting alcohol marketing may be a particularly effective driver of lifetime alcohol abstention.⁶⁷ However, in the context of our review it must be noted that the analysis did not differentiate between high- and middle-income economies, so the results reflect an aggregate of those two categories. Similarly, Chisholm and colleagues⁶⁸ studied a broad range of different economies, ranging from low- to high-income, and upper-middle- and high-income countries were treated as a single group. The authors used a modelling approach (not rated on MSMS) to assess and compare the cost-effectiveness of a set of different alcohol control policies across 16 countries, and found that enacting and enforcing marketing restrictions was highly cost-effective.

Leal-López and colleagues⁶⁹ conducted a retrospective study comprising four waves of cross-sectional survey data to examine associations between alcohol control policies and adolescent drinking outcomes, and socioeconomic influences on those outcomes. They conducted robust multi-level modelling, controlling for socioeconomic status, sex, age, and national-level alcohol control policies (MSMS score: 2) In total, their sample comprised 671,084 children aged 11-15 across 33 North American and European countries and regions. They found that a combination of advertising regulation and restricting alcohol availability was associated with

^{vii} An index for evaluating policy effectiveness as part of the International Alcohol Control (IAC) Study, used to quantify the effectiveness of specific alcohol policies by taking into account both the legal and regulatory stringency and real-world impact of each policy.

reductions in lifetime and weekly alcohol consumption, and a reduction of the influence of socioeconomic status on consumption.⁶⁹

3.3.1.3 Norway

Norway's ban on advertising for alcohol drinks products stronger than 2.5% ABV in 1975 is noteworthy for both the duration for which it has been in place and the near-comprehensive nature of the ban. Rossow and colleagues⁶³ conducted the first study of the effectiveness of the ban in reducing alcohol sales, using sales data and a non-controlled interrupted time series design. We judged this study to be robust (MSMS level 3) due to a combination of a consistent, long-running annual sales data and a statistical approach in which differencing adjusting for price and wages greatly reduced the risk of observed changes being caused by factors other than the marketing restrictions.

The authors demonstrated a statistically significant effect on total alcohol sales, which saw an immediate and sustained reduction of 7% ($p=0.00$). Rossow and colleagues⁶³ observed that this reduction in sales was not initially clear due to various factors impacting sales, again highlighting the challenge of proving the effectiveness of marketing and advertising restrictions in complex real-world policy contexts. The authors also highlighted that the extent and variety of alcohol marketing and advertising in the 1970s were very different to now, and present-day violations of the ban largely occur on social media, where old definitions of what constitutes an advert may no longer be fit for purpose.

3.3.1.4 France

Another intervention that has been a frequent focus of research is France's Loi Évin, which was introduced in 1991, mandating strict limits on what forms of alcohol advertising were permissible (instead of defining what forms are not). It was effectively a total ban on advertising alcohol on TV, in cinemas and through sports sponsorship, and required permitted advertisements to be limited to only factual information about the products and to carry mandatory health warnings.

Gallopel-Morvan⁷⁰ recently conducted an experiment with 696 French participants, via survey, (MSMS score 1) to determine whether adherence to the content restrictions mandated in the Loi Évin are effective in reducing the influence of advertising on attentional and behavioural responses. They found that, when compared to the plainer, compliant advertisements, non-compliant advertisements were statistically significantly more likely to increase intention to buy the promoted product, intention to buy alcohol in general, intention to drink the promoted product and intention to drink alcohol in general. These findings suggest that the content restrictions are efficacious, although the authors found that the effect was limited to younger people, with there being no significant effect for participants above 22 years.⁷⁰

Similarly, Gallopel-Morvan and colleagues⁷¹ (MSMS score 1) used a large-scale experimental design, again delivered via survey, to investigate how different elements of advertising content affected 2,163 young adults' perceptions of alcoholic drinks in France. As stimuli, they used a 'neutral' advertisement featuring a bottle and logo on a plain background, compliant with contemporary French legislation, as well as two non-compliant 'contextual' advertisements: one with added images designed to be attractive to you people, such as sports and partying cues, and version that also added characters to the attractive images. Their analysis found that the contextual advertisements were almost uniformly more influential than neutral advertisements on the attitudinal criteria of attention-grabbing, appeal, perceived product and alcohol consumption and perceived image benefits. They also found that these measures were predominantly higher when exposed to the contextual advertisements with added characters, rather than the contextual advertisements without characters. The differences in effect between contextual and neutral advertisements were more pronounced among women, non-students, existing customers of the brands and high-risk consumers. The authors conclude that their analysis confirms the efficacy of the Loi Evin law in protecting vulnerable young people, and that other countries may benefit from similar limitations on context in alcohol advertisements.

The Loi Évin has been amended multiple times since 1991, with the net effect of weakening the restrictions and allowing more exceptions, and it remains a topic of

discussion as debate, as some seek to reduce the reach of the legislation, and others seek to address emergent loopholes. For example, as summarised in section 2.1.3, Murray and colleagues²² found that, despite prohibiting advertising of alcohol on television and through sports sponsorship, a beer brand was promoted 144 times across two UEFA Euro 2016 football matches held in France, using alibi marketing rather than directly showing brand names or logos. This highlights a potential area where the current Loi Évin may fall short.

3.3.1.5 New Zealand

Chambers and colleagues¹⁵ conducted a modelling study (MSMS: not rated) of the New Zealand population, comparing a 'business as usual' control scenario against different combinations of alcohol interventions targeting alcohol pricing, availability and marketing. Their model suggested that a marketing ban implemented without any other new alcohol control interventions would save 226,000 Health Adjusted Life Years (HALYs) for the whole population across their lifespans, which equated to 0.06 HALYs per-capita.

3.3.2 Effects on exposure

Some research did not measure consumption, sales-based consumption or health outcomes, but observed (or modelled) effects on exposure, which can be seen as an early stage in a plausible causal pathway leading to consumption and health outcomes.

Ireland recently prohibited alcohol advertising in several settings, affecting some public transport facilities, public service vehicles, in cinemas (with some exceptions), on children's clothing, at events which are aimed at, or mostly attended by, children, and on sports fields. Critchlow and Moodie⁷² conducted a repeat cross-sectional online survey (MSMS score 2) and found evidence that these restrictions (on some outdoor and cinema advertising, public transport advertising and branded children's clothing) were followed by significant reductions in self-reported awareness of alcohol marketing.

The same restrictions were analysed further by Critchlow and colleagues⁷³ whom conducted a large, controlled, repeat cross-sectional study (MSMS score 2) of the effects on advertising awareness after two years of restrictions (n=3,029), using Northern Ireland as a control. The analysis found that participants' awareness of alcohol advertising within each of the affected advertising channels reduced after restrictions were implemented. Comparisons with Northern Ireland, where the restrictions were not in place, demonstrated that self-reported awareness of alcohol advertising in public transport and cinemas fell in Ireland relative to Northern Ireland, but there was no significant difference in awareness of outdoor advertising for alcoholic drinks between the two legislatures.

Two studies from New Zealand used wearable camera and GPS data (which is relatively objective, compared to self-reported data) from children to investigate the effects of marketing restrictions on children's exposure. Liu and colleagues³¹ used this data to model effects of different potential policy options (MSMS: not rated), and estimated that banning alcohol advertising within 400m of bus stops would have an 86% reduction on children's exposure. Chambers and colleagues¹⁵ also used wearable camera and GPS data to measure New Zealand children's exposure to alcohol marketing within supermarkets before and after implementation of marketing restrictions introduced in the 2012 Sale and Supply of Alcohol Act (SSAA) (MSMS score 2). They found that both pre- and post-implementation, every child was exposed to alcohol marketing every time they visited a supermarket, and despite the restrictions, the mean rate of exposures increased post-implementation, although the difference was not statistically significant. The authors conclude that the provisions in 2012 SSAA were inadequate, and recommended further restrictions, including prohibiting sale of alcohol within supermarkets.

3.3.3 Compliance with restrictions

The effect of restrictions on exposure depends on compliance with restrictions, and the presence of loopholes in legislation. Two studies in our selection of literature provided examples of alcohol marketing remaining present in specific settings despite advertisers technically complying with legislation.

McBride-Henry and colleagues³⁵ assessed supermarket compliance with sections of New Zealand's SSAA 2012 concerning to the display and advertisement of alcohol. They conducted audits of nine medium and large supermarkets from different chains and in areas with different SES. They found generally good compliance with the legislation, but found that some parts of the legislation were complied with better than others. Perhaps more importantly, they identified sales activities that were technically adherent to the legislation, but could be argued as being against the spirit of the legislation, exploiting vagueness in the areas of transition between parts of stores that are, and are not, restricted. As a result, they found that customer exposure to alcohol marketing within the stores was high, despite technically good compliance with legislation designed to ensure responsible supply and display of alcoholic drinks products.

Similarly, Critchlow and Purves²⁰ analysis of alcohol branding during rugby matches in Ireland found that, despite what could be seen as technically high compliance with legislation, some forms of alcohol branding continued to be displayed within stadiums. The researchers point to the need for clarification about whether alibi marketing and the promotion of zero-alcohol products are within the scope of the Act.

One study illustrates how that alcohol-related content may be visible even in cases of full compliance with restrictions. Basch and colleagues³⁰ recorded and analysed incidental appearances of alcoholic drinks in advertisements for non-alcohol-related products on city buses in Manhattan, NYC, where the Metro Transit Authority put a blanket ban on alcohol advertising in 2017. The researchers found that alcoholic drinks (but not brands) continued to be depicted on city buses, albeit in advertisements for other products, specifically films (76%) and TV shows (17%), where they were often alongside famous actors, and no health warnings were displayed. The drinks shown were typically wine or spirits, with only one occurrence of beer. The authors present their findings as illustrative of the fact that restricting advertisements for alcoholic drinks products does not necessarily prevent favourable images of alcoholic drinks from being displayed in places where young people will be exposed to them.

3.3.4 Voluntary self-regulation by the advertising industry

Noel and colleagues⁴² (MSMS: not rated) conducted a systematic review of international evidence on the content of, and exposure to, alcohol advertising in relation to voluntary, industry-regulated advertising codes. Nineteen studies in their evidence synthesis investigated advertising content in terms of code violations, and the authors found that code violations were common in TV and magazine advertisements, particularly regarding guidelines about associations with social or sexual success, and guidelines intended to protect youth. The authors conclude that self-regulated advertising codes are not sufficient to protect vulnerable populations. This finding was echoed by Burton and colleagues⁶¹ in their review of different policies designed to reduce alcohol-related harm in European countries (MSMS: not rated).

3.3.5 Comprehensive or channel-specific restrictions

In their review of international evidence on the effects of total and partial bans on alcohol marketing on consumption, Manthey and colleagues⁷⁴ identified some studies that suggested that both partial (e.g. Spain) and comprehensive (e.g. in Norway) bans have been effective, although the authors do characterise more comprehensive bans (in terms of both the marketing channels and categories of alcoholic drinks covered) as more impactful.

Another review, by Burton and colleagues,⁶¹ synthesised international evidence from an English perspective. The authors described comprehensive marketing bans as "one of the most effective and cost-effective approaches to prevention and health improvement" and warned that the level of effectiveness "decays" if a policy changes from a comprehensive ban to a partial ban. They observe that most of the evidence for comprehensive bans is from modelling studies, because comprehensive bans are rare, but note that evidence from tobacco control illustrates how effective comprehensive marketing bans can be. The authors identified the approach used in France's Loi Évin as a pragmatic alternative to a complete ban, due to its relatively limited scope for interpretation and circumvention, but, as with Manthey and colleagues,⁷⁴ they highlighted the importance of enforcement.⁶¹

One potential concern of restricting advertising in only one channel is, that the alcohol and advertising industries would simply compensate by reassigning advertising expenditure to permitted channels. This could be of particular concern if the channels excluded from restrictions were disproportionately accessed by a vulnerable subpopulation, such as CYP or hazardous or harmful drinkers. Critchlow and colleagues⁵⁴ controlled, longitudinal analysis of the effects of advertising restrictions in Ireland presented some evidence that non-comprehensive restrictions may not cause an increase in advertising through other channels. The authors measured participants' awareness of alcohol advertising in ten of the channels not included in the restrictions, and found that the odds of reporting no awareness increased in print, radio, competitions and sports and events sponsorship, and that the odds remained stable for social media, branded merchandise and special price offers.

Two studies provided evidence about the relative benefits of implementing marketing restrictions alongside pricing and availability measures, relative to implementing marketing restrictions in isolation. Leal-López and colleagues⁶⁹ international repeat cross-sectional study of the effectiveness of alcohol control policies on adolescents found that a combination of advertising regulation and restricting alcohol availability was associated with reductions in lifetime and weekly alcohol consumption, and a reduction of the influence of socioeconomic status on consumption, but single policy measures alone (including advertising regulation) were not sufficient to cause reductions in consumption.⁶⁹ Conversely, Chambers and colleagues¹⁵ study modelling population-level effectiveness of interventions on alcohol taxation and alcohol marketing in New Zealand found that, in addition to the combination of both policies being effective, the model also predicted that the alcohol marketing intervention would have a substantial effect on HALYs if implemented in isolation.

4. Discussion

We synthesised evidence from 65 relevant articles on the extent and effects of alcohol marketing and advertising, and the effectiveness of advertising restrictions in limiting effects on alcohol-related harm and related behaviours. Taken as a whole the evidence base - which is diverse in terms of research methods, settings and channels studied and outcomes measured - supported the interpretation that we are exposed to alcohol advertising and marketing in a myriad of ways, that exposure drives consumption of alcohol, and that restricting advertising and marketing can be an effective way to limit alcohol consumption and harm. However, it is important to be aware that a minority of papers presented legitimate evidence that runs contrary to these conclusions, and that a substantial part of the evidence comes from cross-sectional observational studies and other research designs that cannot strictly isolate the effects of specific intervention from potential external factors.

4.1. The impact of alcohol marketing and advertising restrictions on consumer responses

We found that the evidence base, which included many robust studies and reviews, predominantly supported the broad conclusion that restricting alcohol marketing and advertising can reduce exposure, which can in turn reduce intent to purchase, purchasing and consumption. Interventions that restrict alcohol marketing and advertising are typically not evaluated robustly, and some of the best evidence that exists applies to relatively old policies that may not account for today's marketing landscape. However, the available evidence typically demonstrates that restrictions are effective and cost-effective, particularly in protecting children and young people, whom are the focus of most of the research. This conclusion is reinforced by evidence that voluntary self-regulation of marketing has not been effective in reducing exposure and protecting vulnerable populations.

The most significant piece of contradictory evidence in our synthesis is Manthey and colleagues'⁷⁵ systematic review synthesising evidence of the effectiveness of both total and partial bans on alcohol marketing from 45 different countries or regions.

While they identified evidence to support the finding that restrictions can be effective and noted that the relatively low cost of marketing restrictions is advantageous, they found that overall weight of the evidence was too uncertain for them to either accept or reject the claim that restricting alcohol marketing is effective. The authors also argued that a marketing ban must comprehensively cover all alcoholic drinks categories and marketing channels, and must be rigorously implemented and enforced to have a reasonable chance of success. They warned that achieving that level of comprehensiveness and rigour is made challenging with the rapid evolution of digital marketing, and extensive past experience that brands will find ways to circumvent restrictions.⁷⁵

We interpreted Manthey and colleagues'⁷⁵ review as robust, and the conclusions as being consistent with a cautious, rigorous approach to evidence synthesis. The journal that published the review, *Addiction*, also published a commentary by Critchlow,⁷⁶ who interpreted Manthey and colleagues'⁷⁵ conclusions as illustrative of the past failure, and future need, to commission robust, theory-based, comprehensive evaluation programmes of any restrictions that are enforced. Critchlow also maligns the fact that the methods used in the existing evidence base limit our ability to compare the relative effectiveness of different types and degrees of restriction.⁷⁶

Another response to Manthey and colleagues'⁷⁷ review was published in which Casswell⁷⁸ questions the conclusions, arguing that comprehensive bans are essential for marketing restrictions to be effective, and therefore that Manthey and colleagues'⁷⁷ assessment of near-comprehensive bans alongside various partial bans serves to dilute the importance of the evidence of the effectiveness of the few near-comprehensive bans that do exist. Casswell⁷⁸ also argues that a narrow focus on reducing consumption fails to account for a wider range of long-term impacts of marketing, and therefore the impacts of its restriction, and they call for future evaluations to take a systems approach to incorporate that level of nuance.

The limitations of the evidence base in examining the nuances of different configurations and contexts of marketing restrictions, identified by Critchlow⁷⁶ were also evidence in our evidence synthesis. While the evidence base allows relatively confident conclusions about the overall positive effect of restrictions, any conclusions

that one might draw about the nuanced details of which types of marketing would be most important target, or which aspects of advertising content would be important to restrict, are based on limited evidence. These nuanced aspects of the scope of an intervention are important for policymakers to get right, due to evidence that producers, retailers and advertisers have found ways to circumvent even those restrictions that might appear the most comprehensive, as seen in Norway and France. This also highlights the value of comprehensive programmes of evaluation that account for contextual factors that might help or undermine effectiveness.

4.2. The extent and effects of exposure to alcohol marketing and advertising

The rationale for introducing marketing restrictions assumes that alcohol marketing and advertising is sufficiently commonplace and persuasive to require regulation. Almost uniformly, the evidence we synthesised supports that assumption. Alcohol marketing and advertising is highly present in many different settings and through many different channels. Those settings and channels that emerged most frequently as focuses of research include sports and sports events, public transit networks and the areas around schools, although it should be noted that we excluded research that solely analysed marketing channels outwith the powers devolved to the Scottish Government, including TV advertising. A large majority of the evidence focused on children and young people's exposure to marketing and advertising. There was relatively little evidence regarding hazardous and harmful drinkers, but that evidence gave some indications that hazardous and harmful drinkers may be disproportionately vulnerable to the effects of alcohol marketing.

The evidence suggests that frequent and varied exposure to alcohol marketing is associated with increased intention to consume, actual consumption, and hazardous and harmful consumption. Although isolating the effects of one intervention in a complex real-world policy environment is challenging, the evidence base is persuasive due to the broad range of appropriate research designs, including evidence reviews, laboratory experiments, and robust longitudinal observational studies. There is also evidence to suggest that the idea that advertising is used to

compete with other brands over market share, instead to grow the market and create new drinkers, is incorrect.

Research regarding the effects of specific types of advertising content was relatively limited, but provided some evidence that advertisements could cause less harm if they do not contain contextual imagery (such as social events), health-oriented marketing messages, or sexual objectification, and if they included long, mandatory health warnings.

4.3. Implications for research and evaluation

Existing alcohol marketing restrictions have not been evaluated as comprehensively as we would hope, and in many cases do not appear to have been evaluated at all. While it is challenging to prove causation in the complex systems in which public health interventions take place, a well-planned, comprehensive programme of monitoring and evaluation, conducted over a suitably long period of time, can come close.

Evaluations of alcohol marketing restrictions should be built around a strong theory of change, breaking down the causal pathways by which the intervention is anticipated to produce outcomes, including potential external influences and unintended consequences. Examining each pathway within a system methodically allows evaluators to not just understand whether an outcome (e.g. consumption, or alcohol-related ill health) was generated by the intervention, but also how those changes came to be, identifying areas for potential improvement, and adding certainty to a narrative of causation. While the strict controls and randomisation necessary for randomised controlled trials are unlikely to be possible, the rigorous use of controlled, longitudinal observation studies such as natural experiments and interrupted time series analyses allow researchers to largely eliminate alternative explanations.

Scotland's minimum unit pricing for alcohol illustrates both the value of a theory-led programme of evaluation⁷⁹ and the use of modelling evidence⁸⁰ to identify potential policy designs and estimate their impacts in the absence of conclusive evidence based on previous interventions implemented elsewhere.

5. Conclusions

Alcohol marketing and advertising is commonplace, multi-faceted, and drives alcohol consumption, including among children and young people. Policies that restrict alcohol marketing and advertising can be effective, and cost effective, in reducing alcohol consumption. Comprehensive policies that seek to restrict advertising for all categories of alcoholic drinks across all marketing channels are most likely to be effective, but it is uncertain whether more limited restrictions can be proportionately as effective. In practice, truly comprehensive restrictions may be impractical or impossible in many legislatures, such that a more pragmatic approach is likely to be necessary. While this review identifies specific channels, settings and aspects of advertising content that could be included in an evidence-based policy, it would be valuable to find or produce further evidence regarding the aspects of marketing that might be targeted in any potential policy options. Finally, the evidence synthesis confirmed that it is important that marketing restrictions are evaluated using comprehensive, theory-based programmes of evaluation research, and taking into account any potential unequal effects of restrictions in relation to socioeconomic deprivation, sex and age. A programme of evaluation should be designed to accommodate the complexity of the potential causal pathways between marketing, consumption and harms, and the likelihood that impacts may not be detectable in the short term.

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