ALCOHOL MARKETING AND Young PEOPLE'S DRINKING BEHAVIOUR in Ireland

AlcoholAction Ireland

Reg. Charity No. CHY15342

ALCOHOL MARKETING AND YOUNG PEOPLE'S DRINKING BEHAVIOUR IN IRELAND

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November 2015

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INTRODUCTION

Alcohol is not just an ordinary consumer product. While it can form part of a balanced social life, alcohol can also lead to a myriad of serious health and social problems.

Given the significant personal and societal costs of alcohol misuse, one key objective of public health policy is to reduce the per capita level of alcohol consumption and in particular to delay the age of initial alcohol consumption by adolescents.

Central to this core public health objective is the role of alcohol marketing in encouraging, normalising and glamourising alcohol consumption among young people.

THE ALCOHOL MARKETING DEBATE

There is an understandable tendency in some quarters to assume that marketing and advertising are synonymous. But marketing is considerably more than just advertising. At its most basic level, marketers refer to the "4 Ps" of marketing – product, price, place and promotion. Each of these 4 Ps can be manipulated to bring about a change in sales and brand positioning. Advertising is one part of the 4th P – promotion – along with sponsorship, sales promotions, direct marketing, personal selling and public relations. And in turn, advertising can be further sub-divided according to the communications channel used – television, newspapers, outdoor, online etc. These diverse elements of a marketing plan are not designed in isolation, but are created in an integrated and mutually reinforcing manner[1].

The advent of digital and social media marketing has created new and important communications channels within the marketing mix. Several alcohol brands have diverted significant marketing spend into the digital sphere[2,3]. Digital marketing, and in particular social media networks, allow for more effective targeting of consumers, and the interactive nature of this communication makes it arguably more effective than traditional passive advertising methods[4]. In this regard it is worth noting that digital marketing operates largely "below the radar" of policy makers because they do not form part of the target audience, thus making digital marketing significantly harder to monitor or regulate.

There is no longer any credible scientific debate about whether alcohol marketing influences consumption behaviour. Some older studies, based on econometric modelling, have argued that there is little or no relationship between marketing and consumption. But econometric modelling is an inappropriate way to assess

the real world impact of marketing on behaviour – the techniques involved are too blunt to capture the influence of marketing in real life[5]. Studies using consumer-level data provide a more realistic insight into human behaviour. A large number of longitudinal consumer studies from different countries have followed young people over time, tracking their exposure to marketing and their subsequent alcohol consumption. Longitudinal studies are important because they can establish if causal relationships exist. A number of systematic reviews of these longitudinal studies clearly indicate a causal relationship between marketing and drinking behaviour, especially among young people[6,7,8,]. There is some evidence that younger adolescents are especially susceptible to the influence of marketing due to their relative lack of life experience and their ongoing cognitive development[9]. For this reason, alcohol marketing regulations are generally oriented towards protecting young people by reducing their exposure to commercial marketing messages.

ALCOHOL MARKETING REGULATION

There are a number of Irish self-regulatory and co-regulatory codes, the most important of which is the Alcohol Marketing, Communications and Sponsorship Code of Practice, agreed between the advertising and alcohol industries and the Government in 2005 and revised in 2008[10]. The primary aim of the code is to reduce young people's exposure to alcohol marketing communications, and it places moderate limits on the timing of alcohol advertising and the amount that can be placed in any one medium.

While efforts to reduce exposure to alcohol marketing are laudable, it is worth noting that there does not appear to be any scientific basis for many elements of this co-regulatory code. To take just one example, the code prohibits outdoor advertising within 100m of schools. But why 100m rather than 50m or 150m? The contents of the code seem to be almost entirely arbitrary.

NUIG STUDY: INTRODUCTION

While there is much public debate about alcohol policy, marketing and consumption in Ireland, there is a relative lack of empirical data on Irish young people's exposure to alcohol marketing. That is why the study conducted by the Health Promotion Research Centre in NUIG is important. It provides a snapshot illustrating how little protection is currently afforded to Irish children.

As with every study, there are a number of limitations that have to be borne in mind. The study is cross-sectional in nature, so it cannot establish cause and effect relationships. Research also involves inevitable trade-offs between data capture and a comprehensive coverage of the full range of confounding factors. Thus, when dealing with children the simplicity and shortness of the survey instrument is a key consideration that in this instance means not considering

all possible confounding factors in the regression analysis. Finally, it is also challenging to accurately measure exposure to advertising, and there is no foolproof way of doing so. The NUIG study utilised a memory-based approach where respondents provide self-reported levels of exposure and there are many precedents for this approach in the literature[11,12].

Notwithstanding these inevitable limitations, the study provides an important insight into the experience of a large sample of children with alcohol marketing and its findings are in broad agreement with much of the international literature.

NUIG STUDY: KEY FINDINGS

The study clearly illustrates the weakness of the current co-regulatory system. To take just some examples from the report:

- More than 90% of the children surveyed reported that they were exposed to traditional (offline) alcohol advertisements in the week prior to the study and more than half reported that they were exposed to 4 or more advertisements per day.
- More than ¾ (77%) of the children reported exposure to alcohol marketing online and very large minorities seem to have been specifically invited to engage with alcohol marketers on social media, with 35% reporting that they were invited to "like" an alcohol brand, 29.7% invited to like an event sponsored by an alcohol brand and 21.4% invited to attend such an event.
- 61% of children reported that they owned alcohol branded merchandise, and ownership was as high as 71.4% amongst boys.

These alarming figures indicate that the regulatory codes in their present form are not protecting children from exposure to alcohol marketing.

The international literature is clear – the greater the level of exposure to, or engagement with, alcohol marketing, the more likely young people are to drink alcohol. This is also borne out in this study. The majority of children were exposed to more than 4 types of marketing within the past week. This level of exposure was associated with an almost threefold increase in the likelihood of drinking and an almost four fold increase in the self-reported intention to drink within the next year. The average child was exposed to 7 types of alcohol marketing, and this level of exposure was associated with heightened risks of dangerous drinking behaviours, including a more than 400% increase in the risk of binge drinking and drunkenness.

The international scientific literature shows a strong association between ownership of alcohol merchandise and drinking behaviour[13]. This is also reflected in the NUIG study – those who owned such items were 91% more likely to drink and more than twice as likely to binge drink or to get drunk or intend to start drinking within the next year.

The bottom line is that the current regulatory system does not protect children from exposure to alcohol marketing, and this failure is associated with increased alcohol consumption. In a very real sense, these children are victims of society's failure to protect them.

IMPLICATIONS

It is extremely difficult to protect young people in the absence of a complete ban on alcohol advertising. However, the following modest interim steps suggest a starting point.

- Outdoor advertising is indiscriminate because all age groups are exposed to it. Merely prohibiting it within 100m of schools provides no protection for children. A society that is serious about protecting children from exposure to alcohol advertising would prohibit outdoor alcohol advertising.
- Audience profile thresholds for radio and television advertising need radical change. Currently alcohol advertising is allowed around programmes if up to 25% of the audience are underage. This needs to be reduced to less than 10% if children are to be protected from disproportionate levels of exposure. 10-17 year olds account for approximately 10% of the population. This is the age group largely represented in the NUIG study and it is the cohort that are at greatest risk of experimenting with alcohol. Current audience profile thresholds allow young people to be disproportionately exposed to alcohol marketing.
- Digital alcohol marketing, and in particular social media marketing, is now a central element of the marketing communications mix and needs to be regulated. This is obviously challenging, but the pioneering steps recently taken in Finland[14] suggest a model for action, including a prohibition on the use of games and user-generated material in branded social media sites. Independent age verification systems are also an important tool to protect children from alcohol branded sites.

Children who drink alcohol before the age of 15 are at significantly increased risk of alcohol dependence in later life compared to those who delay drinking initiation[15]. Creating an environment where children are free from alcohol marketing is a children's rights issue that requires immediate action.

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Alcohol Marketing and Young People's Drinking Behaviour in Ireland

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November 2015

The One Foundation

Supported by National Lottery

This study was commissioned by Alcohol Action Ireland
and funded by The One Foundation and the National Lottery

EXECUTIVE SUMMARY

INTRODUCTION AND METHODS

This report presents self-reported data on exposure to alcohol marketing and alcohol-related behaviours. The aim of the study was to assess the degree and nature of exposure to alcohol marketing among Irish adolescents, and to investigate the relationship between exposure to alcohol marketing and alcohol drinking behaviour in adolescents. Three different measures of exposure were used: 1) Exposure to alcohol marketing, referring to different types of marketing via multiple channels. It is a general measure of how often children were exposed to alcohol advertisements; 2) Engagement with alcohol marketing, referring to active involvement in alcohol marketing that is beyond passive exposure to advertisements; 3) Intensity of exposure to alcohol marketing, referring to the extent to which one is exposed to types of alcohol marketing – the more frequent the exposure the more intense it is.

Data presented in this report were collected from 686 secondary school children aged 13 to 17, from 16 schools in three regions. Data were collected using a self-administered questionnaire and an alcohol marketing diary. Full ethical approval for this study was granted by the National University of Ireland, Galway Research Ethics Committee.

KEY FINDINGS

The study reports that overall 64% of the children who participated in the study reported to have consumed alcohol. Of those, 53% reported having been drunk at least once, 41% reported having been drunk in the last month; 37% reported engaging in binge drinking in the last month; and 50% reported that they drink regularly (every month). Overall, older children (16 to 17) are more likely to report involvement in all alcohol behaviours that were examined in this study.

Almost a third (30%) of the children in this study reported that they intend to drink in the next month; 44% reported that they intend to drink in the next year; and 73% reported that they intend to drink when they are aged 18 or older. Overall, older children were much more likely to report drinking intentions compared to younger children.

With respect to types of marketing, 72% of the children in this study reported that they had seen advertisements for an alcohol product on social media: 35% were invited to 'like' an alcohol brand via social media; 30% were invited to 'like' an alcohol sponsored event, and 21% were invited to go to such an event. Overall, more girls were exposed to most types of social media-related marketing. The study also found that overall, 77% of children were exposed to online marketing, including social media (significantly more girls than boys); 91% were exposed to offline marketing; and 61% reported ownership of alcohol branded merchandise. Ownership of alcohol branded merchandise was found to be the single strongest predictor of drinking behaviours, increasing the risk for involvement in all alcohol-related behaviours that were examined in this study at least twofold.

The study also found that the intensity of the exposure is a strong predictor of alcohol–related behaviours. Exposure to seven or more advertisements (the highest level of exposure included in this study) increased the risk of drinking threefold; binge drinking more than fourfold; drunkenness fivefold, and the risk of drinking intention fourfold. These findings clearly indicate that the more intense the exposure, the higher the risk of drinking alcohol and engagement in risky drinking behaviours.

Findings from this study highlight the need to protect children from exposure to alcohol marketing and identify the gap in the existing regulations regarding alcohol marketing.

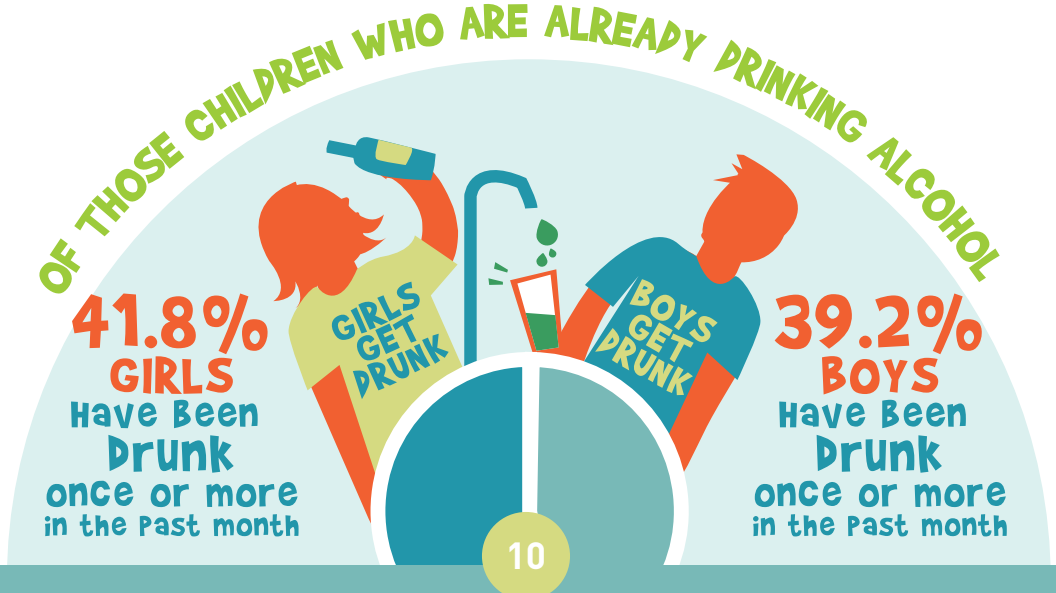
INTRODUCTION

ALCOHOL CONSUMPTION

Alcohol related health problems are a significant public health concern as they can affect many strands of society in various ways, including physically, socially and economically. The 2011 European School Survey Project on Alcohol and Other Drugs (ESPAD) found, in all but one of the 36 countries investigated, that at least 70% of those aged 15-16 years reported having drunk alcohol at least once in their lifetime, while almost half (47%) of respondents reported having been intoxicated at least once in their lifetime (Hibell et al., 2012).

From a national perspective, according to the 2010 Irish Health Behaviour in School-aged Children (HBSC) survey, which collected data from 10-17 year olds, 46% of children reported ever drinking, 21% reported being current drinkers, and 18% reported having been drunk in the last 30 days (Kelly et al., 2012). Analysis of HBSC trends data found that the percentage of young people reporting they had ever been drunk was relatively stable with 29% in 1998 and 28% in 2010 (Gavin et al., 2013).

Young people can be especially vulnerable to alcohol related harm, not only due to their physiological stage of development (Dobson, 2012), but they also lack experience in assessing their limits for safe alcohol consumption (Anderson et al., 2009). Alcohol marketers, however, can view adolescents as simply future consumers with whom they can build brand loyalty. Sophisticated marketing strategies that target young people employ a complex mix of traditional media channels together with online promotion, music and sporting event sponsorship, alcohol branded merchandise and the development of new and attractive products (Dobson, 2012). Young people's exposure to alcohol



marketing has also been exacerbated in recent years by the rapid increase of online marketing strategies through use of social media networks. A study into children's use of social networks in Ireland found that 75% of 13-14 year olds and 88% of 15-16 year olds reported having a social networking profile (O'Neill et al., 2011).

Varying in methodologies, many studies have sought to provide evidence of relationships between young people's exposure to alcohol advertising and either current drinking behaviour, drinking intensity, or future drinking intentions. Some of these studies are outlined below.

BEHAVIOUR

A review of the literature regarding the relationship between alcohol advertising and young people's drinking knowledge, attitudes and behaviours found that while many econometric studies indicated little effect, results of consumer studies with more sophisticated methodologies suggested otherwise (Hastings et al., 2005). Subsequent cross-sectional studies have also found correlations between increased exposure to alcohol advertising and greater likelihood of current drinking behaviour (Austin, Chen, & Grube, 2006; Hurtz et al. 2007; McClure et al., 2006). There have also been a number of prospective studies which have had similar conclusions. Many of these data have been pooled in systematic reviews which confirm that alcohol advertising affects drinking behaviours among young people (Anderson et al., 2009; Smith & Foxcroft, 2009).

INTENSITY

A number of longitudinal studies have reported that exposure to alcohol advertising through a variety of channels can not only predict drinking onset, but also predict increased and heavier drinking among young people (Ellickson et al., 2005; Snyder et al., 2006; Stacy et al., 2004). Grenard and colleagues (2013) also found that exposure to advertisements and liking of those advertisements had a significant influence on the amount of alcohol consumed and the presence/severity of alcohol-related problems in later adolescence.

INTENTIONS

In addition to impacting drinking behaviour, some cross-sectional studies have found a link between exposure to alcohol advertising and young people's drinking intentions (Fleming, Thorson, & Atkin, 2004; Gordon et al., 2011; Grube & Wallack, 1994; Wyllie, Zhang, & Casswell, 1998). Fleming and colleagues (2004) found that exposure to alcohol advertising influenced young people's attitudes and perceptions towards alcohol. They reported that, for the 15-20

year old group, positive responses to advertising resulted in more positive attitudes regarding alcohol consumption, which, in turn, were found to be a significant predictor of their intentions to drink alcohol in the future.

ALCOHOL MARKETING

Exposure to alcohol marketing has been explored in the literature on various levels, including awareness of advertising, engagement in marketing activities, and ownership of alcohol branded merchandise (ABM), such as sports jerseys, key rings or other clothing items. A number of longitudinal studies have examined ownership of ABM among young people who were non-drinkers at baseline, and showed that ownership predicts alcohol use initiation (Collins et al., 2007; Fisher et al., 2007; Henriksen, et al., 2008). A more recent longitudinal study found an association between ABM ownership and binge drinking (McClure et al., 2009). Some online marketing strategies require audience participation such as games, quizzes or user generated content. Gordon and colleagues (2011) reported that participation in electronic alcohol marketing was significantly associated with current drinking behaviour.

ALCOHOL MARKETING IN IRELAND

With respect to legislation on alcohol marketing, Ireland has implemented the minimum requirements set out by the Audio-visual Media Services Directive (AVMSD) (European Parliament and the Council of European Union, 2010) and the Broadcasting Authority of Ireland (BAI) General Code of Practice (BAI, 2013). With the exception of these statutory regulations, however, Ireland is reliant on codes in the form of the Alcohol Marketing, Communications and Sponsorship Codes of Practice (DOHC, 2008), and voluntary codes including the Mature Enjoyment of Alcohol in Society (MEAS) Code of Practice (MEAS, 2004), and the Advertising Standards Authority of Ireland (ASAI) Code of Standards (ASAI, 2007). In this respect, Ireland falls short in regulating for all aspects of integrated alcohol marketing including pricing, online digital marketing, and alcohol sponsored events (AAI, 2013).

A deeper understanding of the complex marketing strategies employed by alcohol companies and

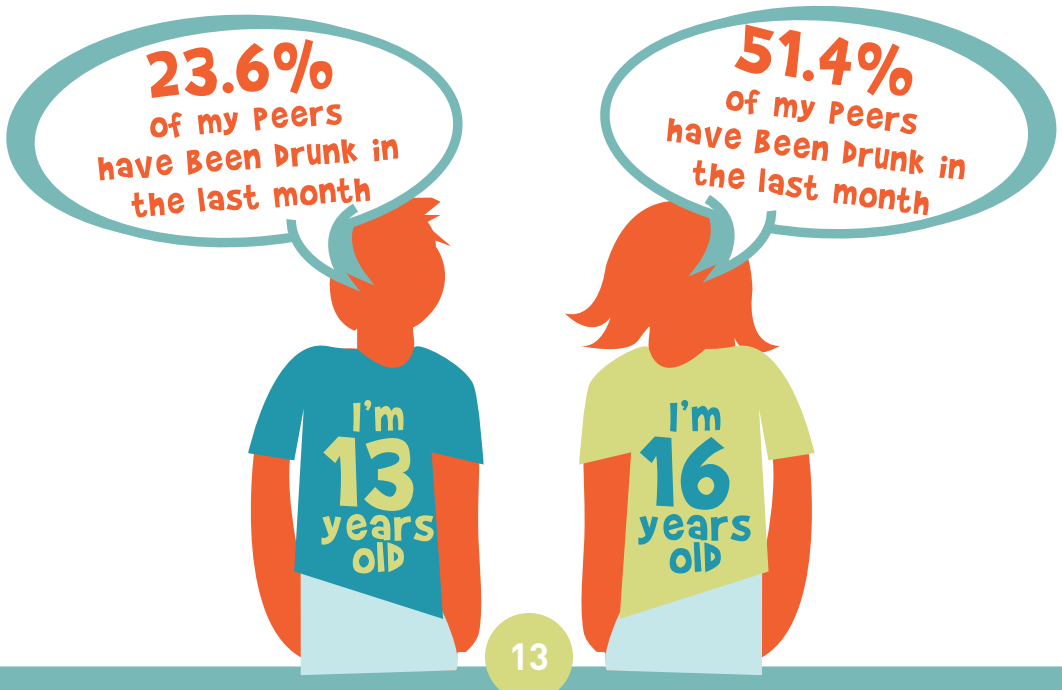
how they interact is necessary for the development of effective public health policies to tackle underage drinking and unhealthy drinking behaviours. A taskforce set up by the European Alcohol and Health Forum also emphasised the need for research regarding the extent of alcohol advertising exposure among young people with a specific focus on the media channels used most by youth (Gordon, Wilks, & MacAskill, 2009). Cross-sectional data from an Irish perspective can add to this evidence base and, in doing so, inform policy development. Data collected in this study will also provide a snapshot of baseline alcohol marketing exposure among young people in Ireland and, if continued, will facilitate the monitoring of changes over time.

AIM OF THE STUDY

To assess the degree and nature of alcohol marketing exposure among Irish adolescents, and to investigate the relationship between alcohol marketing exposure and alcohol drinking behaviour in adolescents.

OBJECTIVES:

- **To describe levels of alcohol marketing exposure and engagement among a sample of adolescents attending post-primary schools in Ireland.**
- **To explore associations between alcohol marketing exposure and engagement with drinking intentions and drinking behaviour.**



METHODOLOGY:

STUDY DESIGN

A cross-sectional study design was employed and data were collected using a self-administered questionnaire and an alcohol marketing diary.

STUDY POPULATION

Young people aged 13-17 years, attending post-primary schools in Ireland.

SAMPLING

Using a proportional stratified sampling approach, 49 schools in three regions were invited to participate in the study (24 in Co. Dublin, 14 in Co. Cork and 11 in Co. Galway), of which 16 agreed to take part (school level response rate of 32.7%). In each school, three classes between 2nd and 5th years were randomly selected to participate, resulting in a sample of 686 school children who completed the questionnaire (individual level response rate of 61.0%) and 353 who returned a valid diary (response rate of 31.4%).

MATERIALS / TOOLS

For the purposes of this study, a questionnaire and an alcohol marketing diary were used in order to assess drinking behaviours and alcohol marketing exposure among Irish adolescents.

QUESTIONNAIRE:

The questionnaire contained questions related to students' opinions, health behaviours, family, leisure activities, and exposure to alcohol marketing. The questionnaire was based on other questions that were used to assess alcohol related behaviour, use of media and exposure to alcohol marketing among youth. Questions that were previously used in the HBSC study (Currie et al., 2012), the ESPAD study (Hibell et al., 2012), and the study by Fanning (2010) were integrated in the study questionnaire.

DIARY:

The alcohol marketing diary was adapted from diaries that are commonly used to measure food consumption and nutrient intake. The diary was employed to assist in obtaining an accurate picture of the extent to which adolescents are exposed to alcohol marketing. Participants were asked to record all alcohol marketing encountered during one week day and one weekend day. For all forms of alcohol marketing encountered, participants were asked to note which alcohol brand it was, where and when it was seen or heard, through which media channel it was presented, whether a slogan was used, how appealing the advertisement was to them, and what participants were doing while observing or engaging in the advertisements.

MEASURES

Demographic variables measured in the questionnaire included age, gender, area of residence (rural/urban) and family affluence scale (FAS) – a pre-validated four-item measure of family wealth (Currie et al., 2008).

Drinking intentions were assessed with three questions:

with the following response categories: **'NO'**, **'YES'**, and **'NOT SURE'**.

Exposure to alcohol marketing refers to different types of marketing via multiple channels. It is a general measure of how often children were exposed to alcohol advertisements. Exposure to alcohol marketing was assessed in the questionnaire using the following items; estimated number of alcohol advertisements seen or heard in the previous week and through which marketing channels these advertisements were seen or heard; whether the last sports and music events attended by the participants were sponsored by an alcohol brand; if the participant was ever invited to like an alcohol brand/event or to attend an event sponsored by an alcohol brand via social media; and if the participant had ever seen an online pop-up alcohol advertisement or received an online quiz about alcohol or drinking via social media. The alcohol marketing diary also measured exposure by asking participants to document each time they saw or heard an example of alcohol marketing.

Engagement with alcohol marketing refers to active involvement in alcohol marketing that is beyond passive exposure to advertisement. Engagement in alcohol marketing was explored by asking about alcohol branded merchandise ownership in the form of a rugby/football sports jersey, mobile phone/iPod cover or accessory, key ring, item of clothing, or any other promotional items/ merchandise with alcohol brand logos on them.

Intensity of exposure to alcohol marketing refers to the extent to which one is exposed to types of alcohol marketing – the more frequent the exposure the more intense it is. The intensity of exposure to alcohol marketing was measured by counting the number of reported exposures, over and above the type of exposure, creating a cumulative exposure scale.

PILOT STUDY

The tools were pre-tested with a group of 48 young people aged 16-18 years, after active parental consent was obtained. The young people completed the questionnaire in approximately fifteen minutes, after which the researcher initiated a discussion regarding the questions asked, and whether they were easy to understand and answer. The participants were then given time to examine the alcohol marketing diary and provide both written and verbal feedback regarding its appearance, clarity, and ease of understanding. Minor revisions were made to the questionnaire and diary in response to the feedback obtained from the young people, prior to their design and printing for the main study.

RECRUITMENT OF SCHOOLS

School Principals were first approached by post with information on the study goals and procedures, together with a copy of the questionnaire. In order to maximise participation rates, the postal invitation was followed up by telephone calls from research staff at the Health Promotion Research Centre, NUI Galway. Once permission was obtained from the Principal, classes were randomly selected from lists provided, and information sheets for parents and students, together with parental consent forms, were posted to the school for distribution. Students were asked to deliver information sheets and consent forms to their parents and, with their permission, return the signed consent forms to the school within a number of days.

DATA COLLECTION

Data was collected in April and May 2013. A day was designated for data collection that was suitable for both the school and the researchers. On the day of data collection students in the selected classes received an information sheet and a verbal explanation of the study from a researcher. They were then asked to participate through active written informed consent. Students were each given a questionnaire and an alcohol marketing diary, which had a unique code for each participant. The unique code allowed the researchers to match data obtained from the questionnaire to that from the diary. No identifying information was recorded and upon completion, participants sealed the questionnaire in individual envelopes and handed them to the researcher, ensuring no third party had access to the responses.

Students were then given information about the alcohol marketing diary, how to fill it in, and examples of alcohol marketing. The students who agreed to complete the diary were asked to bring them home and return them upon completion in order to enter the raffle. As a token of appreciation, students that returned a valid diary were offered entry into a draw for a tablet computer.

Table 1: Summary of study methodology

Population	**Post-primary school going children aged 13-17 years**
Sampling Frame	**Department of Education and Science post-primary school lists**
Sample Cluster	**Sample of classes in a given school**
Stratification	**Proportionally stratified cluster sample (where school classes were the clusters)**
Survey Instruments	**Self-completion questionnaire and diary**
Delivery/Reminders	**Questionnaires and diaries were distributed by the researchers. Teachers provided reminders to students for return of diaries**
Return	**Collected by a researcher and freepost addressed envelopes were provided for any additional diary returns.**
Response Rate	**32.7% of invited schools took part in the study** **61.0% of invited students took part in the questionnaire** **31.4% of invited students returned diaries**
Obtained Sample	**16 schools / 686 pupils**
Ethics	**Full ethical approval was granted by the National University of Ireland, Galway Research Ethics Committee**

RESULTS

ALCOHOL BEHAVIOUR

Overall, 686 children aged 13-17 completed the questionnaire, of which 52.6% were boys and 47.4% were girls. The mean age for this group was 15 years and 8 months (standard deviation: 1.184). Over half of the children (55.4%) were living in rural areas, while 44.6% were living in urban areas. Of the 658 that participated in the study, 63.9% reported that they drank alcohol (62.5% of boys and 65.4% of girls).

Table 2: Percentage of children consuming alcohol by behaviour and socio-demographic factors (number of students)

	Ever drank alcohol	Binge drinking * once or more in the last 30 days (% of those drinking)	Been drunk once or more in the last 30 days (% of those drinking)	Been really drunk (% of those drinking)	Drinking monthly or more (% of those drinking)
All					
	63.9 (n=419)	37.1 (n=152)	40.5 (n=145)	52.8 (n=217)	50.0 (n=175)
Gender					
Boys	62.5 (n=215)	38.4 (n=81)	39.2 (n=71)	50.9 (n=108)	52.8 (n=95)
Girls	65.4 (n=204)	35.7 (n=71)	41.8 (n=74)	54.8 (n=109)	47.1 (n=80)
Age					
13-15 years	53.5 (n=178)	18.7 (n=32)	23.6 (n=33)	27.6 (n=48)	33.6 (n=41)
16-17 years	74.6 (n=241)	50.2 (n=120)	51.4 (n=112)	71.3 (n=169)	58.8 (n=134)
FAS					
low	61.6 (n=101)	33.3 (n=33)	39.3 (n=33)	52.0 (n=51)	46.9 (n=38)
middle	66.7 (n=96)	44.2 (n=42)	47.7 (n=42)	60.4 (n=58)	52.8 (n=47)
high	63.0 (n=206)	35.0 (n=70)	37.6 (n=65)	48.3 (n=97)	49.1 (n=83)
Dwelling					
Rural	63.5 (n=230)	36.0 (n=80)	40.6 (n=78)	53.6 (n=119)	47.0 (n=87)
Urban	63.8 (n=185)	38.6 (n=71)	40.5 (n=66)	51.9 (n=96)	53.4 (n=86)

* Binge drinking in this study is defined as five or more alcoholic drinks in a row

Table 2 presents the percentage the alcohol behaviours of the children in the study, by age, gender, affluence and type of dwelling. We found that older

children are more likely to report that they drank alcohol ($p<0.001$), and that of those drinking, that older children were more likely to report binge drinking in the last 30 days ($p<0.001$), that they were really drunk at least once ($p<0.001$) or in the last 30 days ($p<0.001$) and that they are drinking monthly or more ($p<0.001$). However, no statistically significant differences in drinking behaviours were found between boys and girls, children living in rural and urban settings, or across affluence levels.

Table 3: Percentage of children reporting an intention to drink by time frame and socio-demographic factors (number of students)

	Intend to drink in the next month	Intend to drink in the next year	Intend to drink when 18 or older
All			
	30.1 (n=197)	43.8 (n=288)	72.5 (n=476)
Gender			
Boys	30.4 (n=105)	41.2 (n=142)	70.7 (n=244)
Girls	29.7 (n= 92)	46.8 (n= 146)	74.4 (n= 232)
Age			
13-15 years	10.2 (n= 34)	20.4 (n= 68)	64.7 (n= 216)
16-17 years	50.6 (n= 163)	68.1 (n= 220)	80.5 (n= 260)
FAS			
low	27.4 (n=45)	40.2 (n=66)	67.7 (n=111)
middle	36.4 (n=52)	50.3 (n=72)	75.5 (n=108)
high	28.7 (n=94)	42.9 (n=141)	73.9 (n=243)
Dwelling			
Rural	27.9 (n=100)	41.0 (n=148)	69.8 (n=252)
Urban	32.5 (n=95)	47.3 (n=138)	75.7 (n=221)

Table 3 presents children's intention to drink alcohol in the following month, year and when the children are over 18 years of age. Similar to the findings on drinking behaviours, we found that older children are much more likely than younger children to report that they intend to drink in the next month ($p<0.001$), year ($p<0.001$), or when they will be 18 or older ($p<0.001$). The age difference is such that while only 10% of 13-15 year olds state that they intend to drink in the next month, and 20% reported intention to drink in the following year, 51% of 16-17 years olds reported that they intend to drink in the next month and 68% reported that they intend to drink in the next year. This may suggest that towards late adolescence, drinking behaviours are normalised and perceived to be an accepted behaviour. We also found that children from more affluent families (high and middle FAS) were more likely to report that they intend to

drink at the age of 18 or older compared to children from less affluent families ($p<0.05$). All other differences were found to be not statistically significant.

PURCHASING ALCOHOL

Children who reported that they drank alcohol and, that on the last occasion, that they bought alcohol themselves, were asked to report where they bought the alcohol. Overall, 116 children reported that they bought alcohol for themselves. Of these, 42% reported they bought it in an off licence; 22% reported they bought it in a pub, 12% in a shop, 11% in a supermarket, 10% in a nightclub and 3% in a sports club. This indicates multiple breaches of the Intoxicating Liquor Act, which forbids the selling or serving of an alcoholic drink to anyone under the age of 18.

ALCOHOL MARKETING EXPOSURE

Table 4: Percentage of children reporting online exposure to alcohol marketing by type of exposure and socio-demographic factors (number of students).

	Seen an advertisement or a pop-up for an alcohol product	Received an online quiz about alcohol or drinking	Been invited to 'like' an alcohol brand	Been invited to 'like' an event sponsored by an alcohol brand	Been invited to go to an event sponsored by an alcohol brand
All					
	72.0 (n=467)	15.4 (n=100)	35.0 (n=228)	29.7 (n=192)	21.4 (n=138)
Gender					
Boys	66.8 (n=227)	14.4 (n=49)	33.3 (n=114)	30.1 (n=102)	23.4 (n=79)
Girls	77.7 (n=240)	16.5 (n=51)	36.8 (n=114)	29.3 (n=90)	19.3 (n=59)
Age					
13-15 years	70.4 (n=233)	16.4 (n=54)	35.5 (n=118)	27.4 (n=90)	19.9 (n=65)
16-17 years	73.6 (n=234)	14.4 (n=46)	34.4 (n=110)	32.2 (n=102)	23.0 (n=73)
FAS					
low	75.9 (n=123)	12.2 (n=20)	34.1 (n=56)	29.3 (n=48)	14.6 (n=24)
middle	66.7 (n=96)	16.7 (n=24)	32.6 (n=47)	27.5 (n=39)	19.0 (n=27)
high	71.5 (n=233)	16.4 (n=53)	35.8 (n=117)	30.3 (n=98)	26.0 (n=84)
Dwelling					
Rural	72.8 (n=260)	13.7 (n=49)	33.4 (n=120)	27.7 (n=99)	19.8 (n=70)
Urban	70.5 (n=203)	17.8 (n=51)	36.3 (n=105)	31.9 (n=91)	23.0 (n=66)

Table 4 presents exposures to different types of alcohol marketing online. We found that more girls than boys reported that they had seen an advertisement

or a pop-up for an alcohol product on social media ($p<0.005$). We also found that older children and children from more affluent families were more likely to report that they had been invited to go to an event sponsored by an alcohol brand ($p<0.05$). However, we found that younger children are as exposed as older children to alcohol advertisements and pop-ups, and to online alcohol related games, like online quizzes.

Table 5: Percentage of children reporting that the last sports or music event they attended was sponsored by an alcohol brand, by type of event and socio-demographic factors (number of students).

	Last events attended, sponsored by an alcohol brand	
	Sports event	Music event
All		
	18.3 (n=118)	16.1 (n=102)
Gender		
Boys	22.8 (n=78)	15.4 (n=51)
Girls	13.2 (n=40)	16.9 (n=51)
Age		
13-15 years	18.6 (n=61)	14.6 (n=47)
16-17 years	18.0 (n=57)	17.6 (n=55)
FAS		
low	18.9 (n=30)	18.4 (n=29)
middle	14.8 (n=21)	16.4 (n=23)
high	19.2 (n=62)	15.2 (n=48)
Dwelling		
Rural	16.0 (n=56)	16.9 (n=59)
Urban	20.8 (n=60)	14.6 (n=41)

Table 5 presents the percent of children for whom the last sports or music event they attended was an alcohol sponsored event. We found that more boys than girls reported that the last sports event they attended was sponsored by an alcohol brand ($p<0.001$). However, all other differences were not statistically significant.

Table 6: Percentage of children reporting that they were exposed to alcohol marketing, by type of exposure and socio-demographic factors (number of students).

	Online exposure	Non-online exposure	Alcohol Branded Merchandise ownership
All			
	77.2 (n=508)	90.9 (n=598)	61.2 (n=403)
Gender			
Boys	74.0 (n=256)	90.5 (n=313)	71.4 (n=247)
Girls	80.8 (n=252)	91.3 (n=285)	50.0 (n=156)
Age			
13-15 years	74.9 (n=251)	90.7 (n=304)	63.9 (n=214)
16-17 years	79.6 (n=257)	91.0 (n=294)	58.5 (n=189)
FAS			
low	81.1 (n=133)	90.2 (n=148)	55.5 (n=91)
middle	72.9 (n=105)	93.1 (n=134)	57.6 (n=83)
high	77.2 (n=254)	96.0 (n=316)	65.0 (n=214)
Dwelling			
Rural	76.5 (n=277)	89.2 (n=323)	56.6 (n=205)
Urban	77.7 (n=227)	92.8 (n=271)	66.8 (n=195)

Table 6 presents socio-demographic differences in exposure to alcohol marketing. We found that boys and those living in urban settings were more likely to report ownership of alcohol branded merchandise ($p<0.001$ and $p<0.05$ respectively); girls were more likely to report exposure to online marketing ($p<0.05$); children from more affluent families were more likely to report exposure to non-online alcohol marketing ($p<0.05$). The data in Table 6 demonstrates the extent of children's exposure to alcohol marketing and the failure of existing regulations and codes to limit it.

Table 7: Mean number of advertisements seen in the previous week by socio-demographic factors.

	Mean	Standard Deviation
All		
	7.40	7.654
Gender		
Boys	8.21	8.473
Girls	6.48	6.521
Age		
13-15 years	7.63	7.528
16-17 years	7.15	7.785
FAS		
FAS low	7.80	8.748
FAS middle	6.81	7.925
FAS high	7.47	6.950
Dwelling		
Rural	7.53	7.906
Urban	7.23	7.398

Overall, children reported to have seen a mean of seven alcohol advertisements in the week prior to the survey. Boys and younger children reported seeing or hearing more alcohol advertisements compared to girls and older children ($p<0.005$ and $p<0.05$ respectively), once again demonstrating that the voluntary code of alcohol advertising is insufficient in limiting children's exposure to alcohol advertisements.

Table 8: Diary Data: Reporting of four or more alcohol advertisements on a weekday or weekend day by socio-demographic factors (number of students).

Seen or heard four or more alcohol advertisements		
	Weekday	Weekend day
All		
	56.3 (n=175)	54.0 (n=155)
Gender		
Boys	61.3 (n=92)	55.9 (n=80)
Girls	51.6 (n=83)	52.1 (n=75)
Age		
13-15 years	56.1 (n=101)	55.6 (n=89)
16-17 years	56.5 (n=74)	52.0 (n=66)
FAS		
FAS low	52.5 (n=42)	49.3 (n=37)
FAS middle	53.0 (n=35)	47.5 (n=28)
FAS high	59.9 (n=94)	58.5 (n=86)
Dwelling		
Rural	58.4 (n=97)	55.7 (n=83)
Urban	53.8 (n=78)	52.2 (n=72)

Table 8 presents data on exposure to alcohol marketing as reported in the alcohol marketing diary. Overall, 56% of children reported seeing more than four advertisements on a weekday and 54% reported seeing more than four advertisements on a weekend day. No statistically significant differences were found by gender, age group, FAS or type of dwelling.

Table 9: Models of logistic regression predicting drinking behaviours by exposure intensity

	Drinking alcohol	Binge drinking	Drunkenness	Drink in the next year
	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
No exposure	1	1	1	1
One exposure	1.23	1.35	1.54	1.20
Two exposures	1.56	1.60	1.96	1.75
Three exposures	2.99**	1.79	1.73	3.33**
Four exposures	2.97**	2.36	1.77	3.95***
Five exposures	2.42*	1.89	2.04	3.49***
Six exposures	2.93*	2.81	2.78	4.67**
Seven exposures or more	2.71*	4.61**	5.12**	4.14**
N	635	394	407	636

* p<0.05; ** p<0.01; *** p<0.001
Analysis was controlled for age, gender and family affluence.

Table 9 presents the cumulative effect of exposure to alcohol marketing, over and above the effect of age, gender and social class. The table presents odds ratios, which are a relative measure of effect that allows for the comparison of children that were exposed to alcohol marketing to those who were not exposed, with respect to their drinking behaviours. An odds ratio that is greater than one represents an increased risk of certain behaviour. These findings show that increased exposure to alcohol marketing increased the risk of children engaging in the drinking behaviours examined, compared to children who were not exposed to alcohol marketing. We found that in most cases, the higher the number of exposures (alcohol advertisements), irrespective of the type of marketing, the more common the drinking behaviours become. We have already reported (Table 8) that more than half of the children reported daily exposure to four or more alcohol related advertisements. Such exposure to four advertisements alone increased the risk of drinking nearly threefold (OR 2.97; p<0.01); and the risk of drinking intention nearly fourfold (OR 3.95, p<0.001). Exposure to seven or more types of marketing increased: the risk of drinking nearly threefold (OR 2.71 p<0.05); the risk of binge drinking more than fourfold (OR 4.61 p<0.01); the risk of drunkenness by more than five times (p<0.05); and the risk of drinking intention fourfold (p<0.01). These findings clearly indicate that the more intense the exposure, the greater the risk of drinking alcohol and engaging in risky drinking behaviours.

Table 10: Models of logistic regression predicting drinking behaviours*

	Drinking alcohol	Binge drinking	Drunkenness	Drink in the next year
	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Online Exposure	1.28	1.59	1.37	1.80*
Engagement / Ownership of ABM	1.91**	2.31**	2.03**	2.14***
N	635	394	407	636

* p<0.05; ** p<0.01; *** p<0.001

* Analysis was controlled for age, gender and family affluence.

We also examined how the different types of exposure to alcohol marketing predict various alcohol behaviours, over and above the effect of age, gender and social class (Table 10). We found that online exposure increased the risk to report intention the risk in the next year (OR 1.80, P<0.05). We also found that children who own alcohol branded merchandise are twice or more likely to engage in all of the alcohol behaviours tested. Owning merchandise increased the risk for drinking alcohol (OR 1.91 p<0.01); engaging in binge drinking (OR 2.31, p<0.01); being drunk (OR 2.03 p<0.01); and predicted intention to drink alcohol in the next year (OR 2.10 p<0.001). Owning merchandise, an indication for engagement with alcohol brands that is beyond passive exposure, was the strongest predictor of alcohol behaviour over and above age, gender, family affluence and other exposure variables.

Overall, the findings among Irish adolescents strongly support the literature, suggesting that exposure to alcohol marketing not only increases the risk of children drinking alcohol and engaging in risky drinking behaviours, but also increases their likelihood to report intentions to consume alcohol in the future.

DISCUSSION

The purpose of this study was to assess the degree and nature of alcohol marketing exposure among Irish adolescents, and to investigate the relationship between exposure to alcohol marketing and alcohol drinking behaviour in adolescents. Our findings indicate that there is widespread exposure to alcohol marketing among children aged 13 and upward. We found that drinking, being drunk and binge drinking begins for some children at the ages 13 to 15 and, to a large degree, these behaviours are the norm by ages 16 to 17. Similar to the published work by Anderson and colleagues (2009) and Smith and Foxcroft (2009), we also found that exposure to marketing is a predictor of engagement in alcohol behaviour, including risky drinking behaviours.

We found that 54% of 13-15 year olds and 75% of 16-17 year olds reported that they had drank alcohol. These figures are similar to those reported in the ESPAD study (Hibell et al., 2012). More worryingly, of those who reported that they had drank alcohol, binge drinking in the last 30 days was reported by 19% of the 13-15 year olds and by 50% of 16-17 year olds, and history of drunkenness was reported by 18% of the 13-15 year olds and by 71% of 16-17 year olds. These findings suggest that over a quarter of 13-15 year olds and nearly three quarters of 16-17 year olds who drink also engage in a risky drinking behaviour. Findings from the HBSC study suggest that these patterns in drunkenness have not changed over the years (Gavin et al., 2013) and are worryingly high.

We investigated children's reported intentions to drink. While intention in itself does not necessary mean that the individual will follow through on their intended action, it could serve as an indicator of the perceived acceptability of certain behaviours. We found that while only 10% of 13-15 year olds reported an intention to drink, half of the 16-17 year olds reported that they intend to drink in the next month, and over two thirds reported that they intend to drink in the next year. This may suggest that towards late adolescence, drinking behaviours are normalised and perceived to be an accepted behaviour. Previous studies have identified a strong link between exposures to alcohol marketing and intention to drink alcohol (Fleming, Thorson, & Atkin, 2004; Gordon et al., 2011; Grube & Wallack, 1994; Wyllie, Zhang, & Casswell, 1998). The findings from this study show a similar pattern, with a clear link between the intensity of the exposure to alcohol marketing and the intent to drink in the next year. Indeed, children who reported exposure to four types of marketing were four times more likely to report that they intend to drink in the next year.

We further looked into the extent of the exposure to alcohol marketing, as well as the types of marketing to which children are exposed. We found that almost all children (91%) reported seeing or hearing off-line advertisements for alcoholic drinks, while 77% were exposed to online marketing and 61% reported that they own an alcohol branded merchandise. More girls than boys reported exposure to online alcohol marketing. Incidentally, more girls reported medium and long term drinking intentions, which may suggest that girls are being inducted to drinking more so than boys. A point of concern is the fact that three quarters of 13-15 year olds are exposed to online marketing and are hence unprotected by the existing regulations and voluntary codes of marketing. Given that, in Ireland, between 75% and 90% of youths are active on social media (O'Neill et al., 2011), the potential for exposure to online marketing is very high. These findings call for the urgent need to regulate online alcohol marketing.

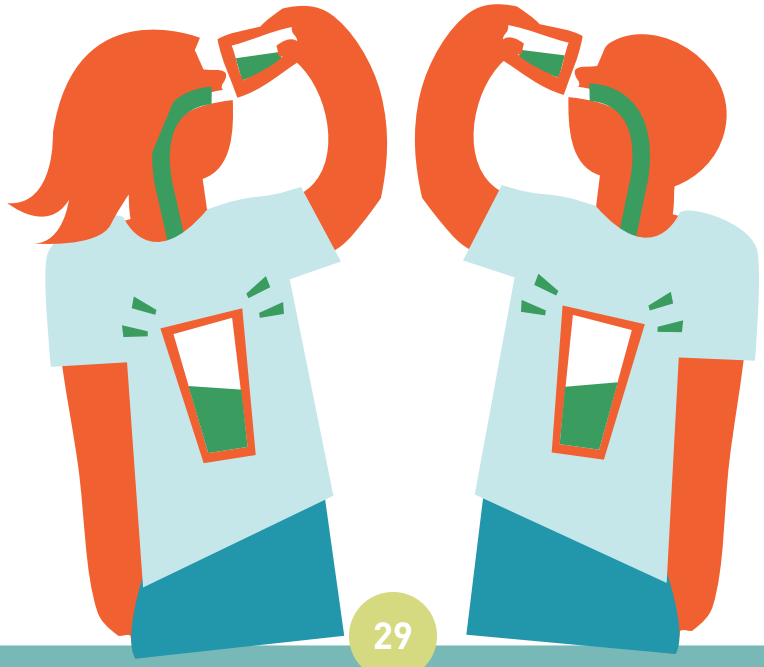
In this study we examined how the different types of exposure to alcohol marketing predict various alcohol behaviours. We found that, of all types of exposure, ownership of an alcohol branded merchandise increased the risk of engagement in drinking behaviour by two or more times, compared to those who did not own alcohol branded merchandise. Owning merchandise, an indication of engagement with alcohol brands that is beyond passive exposure, is the strongest predictor of alcohol behaviour over and above age, gender, family affluence and other exposure variables. Such associations were also reported in previous research (Collins et al., 2007; Fisher et al., 2007; Henriksen, et al., 2008; McClure et al., 2009).

Lastly, we examined how the intensity of the exposure to alcohol marketing is associated with drinking behaviour. We found that increased exposure to alcohol marketing increased the chances of children to report drinking, binge drinking and drunkenness. Moreover, we found that the greater the

exposure, the greater the risk of engaging in alcohol behaviours. Half of the children in this study reported that they were exposed to four or more alcohol advertisements every day. We found that such exposure increased the risk of drinking nearly three-fold; and the risk for drinking intention nearly four-fold. Those exposed to seven or more types of marketing were at a threefold increased risk of drinking; a more than fourfold increased risk of binge drinking; five times the risk of drunkenness, and a fourfold increased risk of drinking intention. These findings clearly indicate that the more intense the exposure, the greater the risk of drinking alcohol and engaging in risky drinking behaviours, echoing previously reported findings (Ellickson et al., 2005; Snyder et al., 2006; Stacy et al., 2004). This, coupled with recent knowledge about the vulnerability of young people to alcohol (e.g. Dobson , 2012; Anderson et al 2013), calls for immediate action on alcohol marketing regulation.

STRENGTH AND LIMITATIONS

The strength of this study lies in the use of validated and acceptable measures of alcohol-related behaviours and of exposure to alcohol marketing. The use of indicators that are commonly used in the study of adolescents' health and to study the effect of alcohol marketing make the findings of the study comparable to other studies. The use of alcohol exposure diaries is a another strength, as using diaries reduces the risk of recall bias – exposures were recorded on the go, not relying on children's memory and interpretation. However, the study is not without limitations. First, as with all self-reported surveys, there is always a risk of misreporting behaviours due to trying to adapt answers in such way that they are more socially acceptable. Another limitation is the low response rate from schools. While this is not unusual in the context of school surveys, it always remains questionable whether, compared to schools that participated, schools that opted not to participate in the study are markedly different in characteristics that are relevant to this study.



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ALCOHOL MARKETING AND Young People's DRINKING BEHAVIOUR in Ireland

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