Can alcohol sponsorship be diluted by health messaging?

Sarah Jane Kelly, Michael Ireland, John Mangan & Harley Williamson

Routledge
Taylor & Francis Group

Can alcohol sponsorship be diluted by health messaging?

Sarah Jane Kelly[a], Michael Ireland[b], John Mangan[a] and Harley Williamson[a]

[a]UQ Business School, The University of Queensland, Brisbane, Australia; [b]School of Psychology and Counselling, University of Southern Queensland, Brisbane, Australia

ABSTRACT

Concerns surround the association between alcohol advertising and alcohol consumption amongst audiences. Research has examined the link in broadcast sports, yet limited attention is directed towards newer media. This paper examines whether there is a link between alcohol sponsorship in sports games and alcohol brand recall, recognition and choice, and whether in-game health messages moderate this association. Simulated games designed specifically for this study are used to observe whether in-game alcohol sponsorship combined with embedded health messages affect the player's brand awareness. Findings highlight the influence of in-game alcohol sponsorship placement on brand awareness, yet embedded health messages do not impact consumer behaviours. This research provides evidence suggesting regulations in games may be warranted and further examination of health messaging in sponsor brand placement necessary.

Introduction

The connection between alcohol consumption and harmful health outcomes is well established (Bye and Rossow 2010; Knai et al. 2015), with the substance contributing to 3.3 million deaths annually and representing 5.1% of diseases worldwide (World Health Organization 2014). As a result of these figures, the World Health Organization has implemented a global regulation strategy that seeks to oversee all endeavours that have the potential to promote alcohol consumption behaviours, including activities such as sponsorship and advertising (World Health Organization 2010). This strategy draws upon a large corpus of research that consistently demonstrates a link between reducing alcohol advertising and a subsequent reduction in alcohol-related harms (Casswell and Thamarangsi 2009).

Alcohol sponsorship has been consistently established as a key element leading to adverse consumption behaviours and is a predictive variable in modelling drinking behaviours (Kelly et al. 2014). In addition, alcohol sponsorship features twice as often in youth sport than any other type of sponsorship, particularly in Western nations (Maher et al. 2006). In Australia, alcohol sponsorship is common and arguably more frequent than in other countries (Jones 2010). This trend may be problematic as direct exposure to alcohol-related

sponsorship messages could catalyse alcohol consumption amongst youths or lead to an increase in already established consumption levels (Anderson et al. 2009). There are also more noticeable drinking behaviours amongst sports fans and spectators on game days than other social activities (Glassman et al. 2007), and there is the likelihood for fans to engage in higher risk consumption behaviours than non-fans (Nelson and Wechsler 2003). Despite this, in-game advertising has become an increasingly popular method of sponsorship (Cianfrone et al. 2008). Thus, the present study seeks to examine the association between in-game alcohol sponsorship and consumer preferences and recall, and whether embedded health messages moderate these relationships on a gaming platform.

Alcohol and sponsorship

The sponsorship of alcohol is popular amongst a myriad of platforms. Scholars argue that messages highlighting the link between alcohol and sport are common (see e.g. Jones, Phillipson, and Lynch 2006). Despite the widespread use of alcohol advertising messages in sports-related contexts, research that examines its nature and impact is still relatively scarce. However, understanding the health and social implications of alcohol sponsorship has become a key international priority (Jones, Phillipson, and Barrie 2010; Knai et al. 2015). This is due not only to the diverse audience sports captures, including young people (Jones, Phillipson, and Barrie 2010), but also the ethical considerations regarding promoting a product that can have potentially harmful social and health impacts (Kelly et al. 2014).

Reports have emerged on a global scale that call into question the efficacy of alcohol advertising and its impacts on consumers (see e.g. Australian Government 2009; Cody and Jackson 2014). Politicians and the media have also weighed in on the debate (Casswell 2013; Jones 2010; Knai et al. 2015). This is likely because sponsorship is a lucrative yet controversial enterprise. Within the context of sports sponsorship, companies (i.e. alcohol companies) exploit the healthy image associated with sports by attempting to align their products with this image (Grunseit et al. 2012). Sporting contexts consistently attract sponsorship from 'unhealthy' or harmful products in sports, such as gambling, alcohol and junk food (Macniven, Kelly, and King 2015; Maher et al. 2006; Westberg et al. 2016). In Australia alone, alcohol sponsorship has exceeded an annual expenditure of US$228 million (AU$300 million; Australian Medical Association 2012). Globally, the total sponsorship outlay has been estimated to be approximately US$60 billion (Statista 2016).

Controversy surrounds the link between alcohol sponsorship and increased consumption behaviours (Jernigan, Ostroff, and Ross 2005). A global evidence base has been established to examine this relationship. For example, in an analysis of alcohol sponsorship in Australian sports, Kelly et al. (2015) found a high rate of alcohol sponsorship messages within four popular sports contexts and noted that sponsorship messages targeted younger consumers, questioning the efficacy of sponsorship policies in Australia. Similarly, harmful consumption patterns have been found amongst people who receive direct-to-user sponsorship (i.e. receiving discounts, samples and vouchers; Kelly et al. 2014; O'Brien and Kypri 2008). Moreover, when comparing the effects of alcohol sponsorship and non-alcohol sponsorship on alcohol usage, findings point to the influence of alcohol sponsorship on alcohol consumption behaviours (O'Brien et al. 2011, 2014). The limited yet growing evidence base consistently highlights the harmful effects alcohol sponsorship in the sporting context can have on attitudes towards drinking, alcohol awareness and consumption patterns.

Despite these findings, the success of alcohol sponsorship in the stadium and on the field has prompted advertisers to turn to other platforms in an attempt to capture a broader audience. Sponsorship messages are now being incorporated in a variety of interactive platforms, thereby questioning the wider impact of alcohol sponsorship for a more expansive audience.

Sponsorship in sports video games

The strategic placement and sponsorship of products within different forms of media such as television programmes, movies and video games are designed to influence attitudes and consumption patterns amongst audiences (Gupta and Lord 1998). Advertisers are also increasingly using the gaming medium, due in part to its growing popularity amongst audiences all over the world, and because the gaming platform is largely unregulated in comparison to other more traditional platforms. As a result, companies have access to market their products to audiences of all ages on a global scale (Pettigrew et al. 2013).

The gaming industry has experienced a significant growth in both gamers and spectators on a global level (Hval Olsen 2015). As such, the gaming arena represents a viable platform for advertisers to market their products, as the scope is far-reaching given the platform facilitates worldwide connectivity amongst players and audiences (Superdata 2014). It must be acknowledged that the scope of consumers who are attracted to the gaming platform may be narrower than in other entertainment platforms, and thus may not attract all types of sponsors. However, the narrower scope may instead enable sponsors to hone in on the specific audience the gaming platform attracts. The Asia-Pacific represents the largest population of gamers in comparison to all other regions, accounting for 477 million of the total 1.23 billion gamers globally (Newzoo 2015). Heaven (2014a) predicts a 275% consumption increase by 2018; thereby suggesting games will continue to have a serious presence as a form of entertainment and as a lucrative sponsorship platform (Laakkonen 2014).

Research that has examined sponsorship within games has reported positive outcomes, including more favourable brand attitudes (Wise et al. 2008) and brand recall (Biscaia et al. 2014; Cauberghe and De Pelsmacker 2010). Furthermore, there are various ways to insert advertising within games that sometimes means identifying product placement is difficult. Some scholars thus argue that in-game advertising may be more powerful than sponsorship on television (Mallinckrodt and Mizerski 2007). For example, sponsorship messages may be embedded around the stadium or on the field to add a realistic element to the game, or may be presented as on-screen logos or through athlete or celebrity endorsements (Cianfrone et al. 2008). More recently, Siemens, Smith, and Fisher (2015) examined the role of active brand placement (e.g. advertising on a race car) as opposed to passive placement (advertising on a billboard), finding that active brand placement was associated with heightened recall. In-game advertising is more likely to be positively received by consumers when it adds a realistic dimension to the game by mirroring the conditions of a real game (Kinard and Hartman 2013; Nelson, Keum, and Yaros 2004; Peters and Leshner 2013). As such, the deeply engaging nature of games with embedded advertisements may inadvertently encourage gamers to focus more explicitly on playing the game rather than the advertisements (Dardis, Schmierbach, and Limperos 2012; Winkler and Buckner 2006).

The overarching goal of in-game sponsorship is for companies to enhance the equity of their brands (Kim, Walsh, and Ross 2008). In the first empirical attempt to examine the effect of in-game advertising, Nelson (2002) found respondents were able to recall more

than a quarter of brands placed in the short term, while 10–15% was recalled five months after the study was conducted. The positioning of brand messages within the game has also been found to impact recall and recognition. Specifically, Lee and Faber (2007) found that focal placements of brand messages were more likely to positively influence brand recall and recognition when compared with brand messages positioned on the periphery. More recently, scholars have examined brand awareness when in-game advertising comprises both visual and verbal cues, finding that the combination of visual and verbal placement elicits greater brand awareness than if the brand message contained a visual placement only (Walsh et al. 2013). While the gaming platform presents an attractive sponsorship outlet, it is important to understand what impact in-game sponsorship has when the brand is alcohol.

There are inherent risks in placing alcohol advertisements within games, given the age range of the gaming audience, with 29% of gamers under the age of 18 (Entertainment Software Association 2016). A policy statement by the Distilled Spirits Council of the United States (DISCUS) recommended that alcohol advertising only be allowed within games where it can be reasonably expected that at least 71.6% of its audience be of legal age to purchase alcohol (DISCUS 2011). Further to this, it is also important to examine exposure, as the mere exposure hypothesis has been a long-standing feature of sponsorship and advertising research as a potential factor to explain processing behaviours amongst consumers (Bennett 1999). Exposure is particularly important in the gaming context as audiences spend more time engaging with games than traditional media (Heaven 2014b). With this in mind, examining the applicability of the gaming platform for alcohol sponsorship is timely from a marketing perspective. However, given the problems associated with alcohol sponsorship and consumption behaviours, it is also important to examine whether the effects of alcohol sponsorship on brand recall and recognition can be tempered. In traditional advertising, it is common to see the advertising of alcohol products along with slogans advising consumers to drink responsibly. Whether these responsibility campaigns work in the gaming context is a key focus of the present research.

The impact of health messaging

The media have a function, in addition to other roles, to address social issues such as health behaviour campaigns (Wakefield, Loken, and Hornik 2010). Mass media types, including traditional formats such as television, radio, billboards and newer forms such as social media platforms, offer a forum to attract and expose large populations of consumers to health campaign messages (Wakefield, Loken, and Hornik 2010). Campaign messages are increasingly utilized by alcohol companies, primarily as a reactive measure 'to curb the rising criticism of their product and its advertising' (Smith, Atkin, and Roznowski 2006, 1). Other scholars suggest alcohol companies have adapted their marketing strategies to position themselves as 'part of the solution' to alcohol-related harms (Casswell 2013, 681). However, to frame themselves as a key stakeholder instrumental in reducing alcohol-related harms, they have attributed the problem in the consumer rather than the substance (Casswell 2013). Despite the issues associated with underlying motives for alcohol companies to address responsible drinking, alcohol sponsorship messages within games may influence consumption patterns. Thus, it is reasonable to wonder whether health-related messages presented in a similar way may also affect drinking patterns. It has been suggested that embedded health messages within mass media may provoke changes in consumer behaviour (Evans 2008; Gallagher

and Updegraff 2012). As such, this strategy has been implemented within other forms of media such as video games and movies (Evans 2008).

There are mixed results surrounding the effectiveness of health messages in influencing alcohol-drinking behaviours (Agostinelli and Grube 2002). Scholars note that consumers disregard messages printed on alcohol products, avoid purchasing any alcohol products that have health warnings on the packages or are somewhat affected by the health messages printed on alcohol products (Glock and Krolak-Schwerdt 2013). Scholes-Balog, Heerde, and Hemphill (2012) and Knai et al. (2015) further suggest that while consumers may acknowledge these health warnings, they have little if any impact on consumption behaviours. Prominent health messages that are content specific are arguably more likely to be noticed by consumers and thus influence consumption patterns (Agostinelli and Grube 2002; Anderson, Chisholm, and Fuhr 2009). While a recent study of health messages relating to alcohol within sports sponsorship revealed anti-alcohol messages had an effect, the scope of the research did not extend to include parallel pro- and anti-health messages (Rosenberg and Ferguson 2014). Clegg Smith, Cukier, and Jernigan (2014) also examined the efficacy of health messages in promoting responsible alcohol consumption behaviours. Examining messages similar to those proposed for the present study (i.e. Drink Responsibly), the authors found that instead of promoting positive alcohol attitudes, the health messages had a marketing effect on the product rather than an educational impact on the consumer. What is perhaps most problematic, as outlined by Clegg Smith, Cukier, and Jernigan (2014) and other scholars (see e.g. Atkin, McCardle, and Newell 2008; Barry and Goodson 2010) is the ambiguity surrounding the health message and the absence in defining the term "responsible". This sentiment is echoed by other scholars who acknowledge the subjectivity associated with *drinking responsibly* and highlight the need to consider target audiences when developing alcohol health campaigns (Harding and Stockley 2007; Martin-Moreno et al. 2013). As such, the onus on determining appropriate consumption behaviours is left to the discretion of the consumer. Despite this small yet growing body of literature, within the context of sports the effectiveness of health messages is unclear, particularly when messages are constrained simply to the brand (e.g. 'Budweiser') or a short phrase (i.e. 'Drink Responsibly'). Moreover, such campaigns may be effective, but only when applied as part of a multifaceted alcohol harm-reduction approach (Dunstone et al. 2017; Wakefield, Loken, and Hornik 2010). As such, the present study seeks to understand whether health messages in conjunction with alcohol sponsorship enhance player awareness.

Research aims and hypotheses

We conducted an experimental study that examined the impact of concurrently embedded sponsorship and anti-alcohol health messages in sports video games on brand recall and preferences. We are particularly interested in the effects of health messages in conjunction with sponsorship messages because of the increasing use of health messaging in a sports context, including fantasy gaming, in stadia and in broadcast media. We focused upon video games, given that alcohol-linked sponsorship impacts within games are under-researched, and that a large and growing proportion of young audiences typically engage with this medium. We anticipated that the combined exposure of alcohol sponsorship messages and health messages within video games might weaken the main effect of alcohol brand exposure. We hypothesized the following:

Hypothesis 1: The presence of health messages within games will moderate the effect of an alcohol brand placement within games on a player's brand choice and sponsor recall and recognition. Specifically, participants who are exposed to health messaging will have:

(1) diminished recall and recognition of the alcohol sponsor brand and
(2) less likelihood of alcohol branded choice than those players who did not receive the embedded health message.

Methods

Participants

The sample for the present study comprised of 244 Australian citizens who voluntarily participated in an online study. The demographic composition of the sample included people aged between 18 and 30 years ($M = 23.07$) with an almost equal gender distribution (56.6% female). All of the participants in the study consumed alcohol, with a reported average of 1.52 standard drinks per day consumed throughout the month prior to the study, and a reported average of 1.24 drinks consumed per day throughout the week prior to the study. Participants were compensated $6 for completing the experiment and were recruited through an online consumer panel in Qualtrics. In order to be eligible to participate in the study, participants were screened for the following attributes: they were required to be between 18 and 30 years old, current alcohol drinkers, Australian residents for at least one year and fluent in English. Participants were also required to have moderate gaming experience and therefore were competent at playing sports fantasy games and representative of a typical gaming audience. To assess this level of gaming experience, participants were asked to respond to the item, 'How often do you play online games?' Responses were through a five-point Likert scale anchored by 1 = 'not very frequently' and 5 = 'very frequently'. Moderate playing participants were selected from those who responded 3–4 on the scale. Very frequent players (5) were omitted on the basis that the degree of concentration and therefore attention to peripheral game aspects such as the signage needed to be controlled in the study (Kim, Walsh, and Ross 2008; Walsh et al. 2013). After passing the screening, demographics including the participant's gender, postcode and ethnicity were obtained. From here, participants were randomly assigned to conditions for the two studies, and the order of the game presentation was counterbalanced. Finally, an overall rating for the appeal of each of the games (out of 5) was gathered before participants moved on to complete the survey measures.

Design

Participants were advised that they would be testing two computer game prototypes, followed by a short survey about alcohol consumption habits and sports. The first video game was based on V8 Supercar racing, and the second game was based on FIFA World Cup soccer. These games were selected due to their universal popularity as sports brands, for spectating and for gaming. Participants were given a maximum 3 minutes playing time per game, to ensure that the extent of exposure was controlled. The survey took approximately twenty minutes to complete.

Procedure

The study comprised a 3 × 2 between-participants design and examined the independent and interactive effects of alcohol brand exposure and alcohol health messages. There were two independent variables: brand exposure (alcohol brand; non-alcohol brand; control) and alcohol health message (present; absent). Brand advertising included brand logo advertising (alcohol vs. non-alcohol vs. no brand), which was displayed on the barrier signage within the game. Alcohol branded messaging consisted of XXXX Gold and Budweiser beer and non-alcohol branded messaging included Mother and Powerade sponsoring the V8 Supercars and FIFA World cup respectively. The alcohol–sport brand pairings mirrored actual sponsorship relationships in the sports used as stimuli to ensure their plausibility. The non-alcohol brand control consisted of the sport branding, either 'FIFA World Cup' or 'V8 Supercars.' The alcohol health message variable consisted of the words 'Drink Responsibly,' which reflected the well-established Australian federal government's health campaign and was therefore plausible messaging to the Australian participants. Participants in the 'alcohol brand present/control' condition saw alcohol and non-alcohol brand advertising coupled with the health message. Those participants who did not see the health message were included in the 'brand present/alcohol brand absent' condition, and the 'alcohol brand absent/control' condition. Messaging was manipulated through Photoshop software to form the six different conditions. Each participant was randomly allocated to one of the six conditions by the researchers and played each game for three minutes, which was therefore the length of exposure to the branded conditions. Figure 1 details the conditions and gaming stimuli used for the FIFA World Cup game for the study.

Measures

To understand whether the manipulations had been successful, participants were asked at the end of the survey whether they had noticed the presence of the alcohol brand within the game as well as the presence of the health message. Participants could answer 'yes, no, and unsure'. These items were asked amongst participants across all conditions and their responses matched with the specific condition the participant had completed. A detailed summary of all measures adopted in the study is outlined in the Appendix 1.
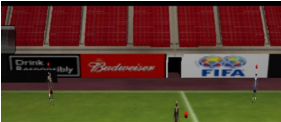

	Alcohol Brand	*Non-alcohol Brand*	*Control*
Present	"Drink Responsibly" message displayed alongside Budweiser brand and FIFA logo on barrier signage only.	"Drink Responsibly" message displayed alongside Powerade brand and FIFA logo on barrier signage only.	"Drink Responsibly" message displayed alongside FIFA logo on barrier signage only.
Absent	Budweiser brand and FIFA logo displayed on barrier signage only.	Powerade brand and FIFA logo displayed on barrier signage only.	FIFA World Cup displayed on barrier signage only.

Figure 1. Example conditions and stimuli.

Brand recall and recognition

Cognitive outcomes have largely been measured by a range of recall and recognition measures, including response latency, sponsor–event matching and thought elicitation (e.g. Johar and Pham 2000). Accurate identification of the event sponsors as assessed by recall or recognition is one of the most commonly used measures of sponsorship effectiveness, given that a major objective of sponsorship is brand awareness (Biscaia et al. 2014; Cornwell 1995; Johar and Pham 2000; Walsh, Kim, and Ross 2008). In our study, we tested recall of the sport and sponsor brand name recognition. Across all of the conditions, participants were asked to recall the names of the sports event that each game was based upon, as an attention check. If a participant could not recall the sports event name, participants were encouraged to select the 'don't recall' response option. Participants were then tested on 1. Free recall of the brand sponsoring the game (i.e. 'Please name the brand which sponsors the game you have just played.') and 2. Sponsor brand recognition. To measure recognition within the control conditions, participants were given a list of eight names relating to the featured sport and including the correct name within the list. In the alcohol exposure conditions, participants were asked to recall the name of the alcohol sponsor brand where they were presented a list of eight brand names (including alcoholic and non-alcoholic brand names, depending on the condition each participant was exposed to) in order to make their selection. All dependent, independent and control measures used in the study are summarized in Appendix 1.

Brand choice

A series of 16 brand logos were presented to each participant following the question: 'What beverage below do you most feel like drinking now?' Eight of the 16 beverages were non-alcoholic (e.g. Gatorade, Powerade, Mother, Redbull, Lipton Ice Tea, Pepsi, Solo), and eight were alcoholic, including the sponsor brand embedded in the alcohol present condition (e.g. Budweiser, XXXX Gold beer, Vodka Cruiser, VB beer, Smirnoff, Carlton Draught, Jacob's Creek sparkling wine, Yellow wine).

Brand familiarity

Brand familiarity was measured as a covariate due to its established impact upon sponsor brand recall and response (Cornwell, Weeks, and Roy 2005). Six items were included to examine the degree of familiarity and perceptions amongst each participant towards the brands they were exposed to in each game. The items within the control conditions related to FIFA World Cup soccer and V8 Supercar racing. The items within the alcohol brand conditions related to XXXX Gold and Budweiser beer. For the non-alcohol brand conditions, the items concerned Mother and Powerade. Participants responded using a seven-point scale adopted by prior research and anchored 'negative/positive', 'unfavourable/favourable', 'bad/good', 'very familiar/very unfamiliar', 'not knowledgeable/very knowledgeable', and 'very inexperienced/very experienced' (Cornwell, Weeks, and Roy 2005).

Sport and gaming involvement

Highly involved consumers display stronger positive attitudes towards the sponsor, and there is a greater chance they will express a preference for the sponsor's product because of its affiliation with the event (Bennett 1999; Kohl and Otker 1985; Meenaghan 2001). We therefore used three items that examined the degree to which participants were involved

in car racing or soccer as a covariate measure in the study. Participants responded on a seven-point scale to items such as 'unimportant/very important', 'personally irrelevant/personally relevant' and 'of no concern/of great concern', used in prior research (e.g. Bennett 1999). On a seven-point scale, participants recorded their level of involvement, concentration, attention, interest and absorption in each game given the known impact of gaming engagement upon game appeal and in game sponsor preference and memory. *Sponsor/sport congruence.*

Event-sponsor fit leads to positive attitudes towards the sponsor (e.g. Rifon et al. 2004; Roy and Cornwell 2004) and positively impacts purchase intentions (Roth and Romeo 2000). Five items were therefore included that measured on a seven-point scale whether participants perceived congruence between each sporting event and the brand (Pappu and Cornwell 2014; Simmons and Becker-Olsen 2006). Participants in the control conditions did not complete this section. Overall, fit was moderate to high for each of the sponsor–sport pairings ($M = 4.35$).

Results

Sequential logistic regression analyses were performed using SPSS NOMREG to predict recall or recognition of the brand sponsor during each game, to predict whether each participant would be inclined to consume the brand sponsor drink immediately after playing the games, and to measure the likelihood that participants would drink alcohol during the weekend. These predictions were initially made on the basis of the health message awareness for brand exposure condition and the health message awareness for health message condition, in addition to a series of covariates, including sport event familiarity/attitude, perceived benefits/risks of alcohol, intention to avoid alcohol, sport involvement, an attention check and the participants' gaming frequency. These predictions were then repeated after adding the brand exposure condition (alcohol brand vs. non-alcohol brand vs. control) and the health message (present vs. absent). An evaluation of the adequacy of expected frequencies for these predictors demonstrated no reason to restrict model goodness-of-fit tests.

Recall of sponsoring brand

The model fit for assessing the correct recall of the brand sponsor during the car racing game using only the health message awareness and the covariates was reasonable, χ^2 $(149) = 167.34$, $p = .145$, using a Pearson criterion. However, despite the predictions made in Hypothesis (1a), when brand sponsor and health message conditions were added, there was no improvement of fit, $\chi^2 (146) = 194.16$, $p = .005$, Nagelkerke R2 = .51, using a Pearson criterion. The overall classification was moderate with the first model, and with the addition of brand sponsor and health message conditions, only marginal improvement was observed. On the basis of the health message awareness and covariates alone, 90.1% of cases were correctly classified into hits and misses, with 94.4% of misses correctly classified and only 5.6% of hits correctly classified. These results suggest that cases were over-classified as misses in this analysis. Following the addition of brand sponsor and sponsor placement conditions, correct classification increased minimally to 92.5%, with 93.2% of misses correctly classified and 6.8% of hits correctly classified. In these analyses, only one predictor, brand health message awareness, statistically significantly enhanced prediction ($p < .001$).

The model fit for assessing the correct recognition of the brand sponsor during the soccer game on the basis of the health message awareness and covariates alone was statistically moderate, χ^2 (149) = 164.02, p = .189, using a Pearson criterion. However, with the addition of the brand sponsor and health message conditions the model fit was statistically better, χ^2 (146) = 132.61, p = .779, Nagelkerke R2 = .23, using a Pearson criterion, but the overall classification was poor. With both models, 92.5% of cases were correctly classified into hits and misses, with the whole 92.5% of cases falling into correctly classified misses. None of the small number of hits (12) was correctly classified. The results of the analysis show no support for Hypothesis (1a) or (1b) as none of the predictor variables statistically significantly enhanced prediction within the models. Thus, the central position of health messages within games did not moderate recall of embedded alcohol brands.

Recognition of sponsoring brand

Similarly to the recall analyses, the model fit for assessing the correct recognition of the brand sponsor during the V8 Supercar game based only on the health message awareness and covariates was unimpressive, χ^2 (149) = 183.31, p = .029, using a Pearson criterion. The addition of the brand sponsor and health messaging conditions revealed a good improvement in the model fit, χ^2 (146) = 159.28, p = .214, Nagelkerke R2 = .23, using a Pearson criterion. The overall classification was moderate with the first model, but even with the addition of brand sponsor and sponsor placement conditions, it did not improve. On the basis of the health message awareness and covariates alone, 79.5% of cases were correctly classified into hits and misses, with 87% of misses correctly classified and only 13% of hits correctly classified. Following the addition of brand sponsor and sponsor placement conditions, correct classification decreased slightly to 77%, with 89.4% of misses correctly classified and 10.6% of hits correctly classified. In these analyses, only the brand health message awareness predictor statistically significantly enhanced prediction (p < .001).

Recognition of the brand sponsor throughout the FIFA World Cup game on the basis of the health message awareness and covariates, χ^2 (149) = 160.54, p = .245, using a Pearson criterion demonstrated a good model fit. After adding the brand sponsor and health message conditions, there was a marginal improvement in the model of fit, χ^2 (156) = 161.54, p = .179, Nagelkerke R2 = .34, using a Pearson criterion. In the first model, the classification was adequate and improved minimally after adding brand sponsor and health message conditions. On the basis of the health message awareness and covariates alone, 77% of cases were correctly classified into hits and misses, with 87% of misses correctly classified and 13% of hits correctly classified. Overall, with the addition of brand sponsor and health messaging conditions, correct classification increased slightly to 78.9%, with correct classification of misses decreasing marginally at 80.1% and the correct classification of hits increasing slightly to 19.9%. In keeping with this, the alcohol condition predictor statistically significantly enhanced prediction for both the alcohol and non-alcohol conditions (p = .003 and p = .001). Participants within the alcohol condition were five times more likely to produce misses than hits, while participants in the non-alcohol condition were six times more likely to produce misses than hits.

Brand choice

When examining the model fit of brand choice amongst participants, the inclusion of the health message predictor variable with the covariates alone had a moderate outcome, χ^2 (292) = 317.66, p = .145, using a Pearson criterion. With the addition of brand sponsor and sponsor placement conditions, there was no improvement in the model fit, χ^2 (286) = 323.23, p = .064, Nagelkerke R2 = .25, using a Pearson criterion. In the first model, the overall classification was inadequate, and even with the addition of brand sponsor and health message conditions the outcome did not improve. When examining the health message awareness and covariates alone, 62.1% of choices were correctly classified, with 87.6% of choices correctly classified for non-sponsoring non-alcohol brands, 4.3% of choices correctly classified for sponsoring brands and 8.1% for non-sponsoring non-alcohol brands. Correct classification decreased to 62.7% when brand sponsor and health message conditions were added, with 88.2% of choices correctly classified for non-sponsoring non-alcohol brands, 4.3% correctly classified for sponsoring brands and 7.5% correctly classified for non-sponsoring alcohol brands. These findings give no support for Hypothesis (1a) or (1b) as no individual predictors significantly enhanced prediction of brand choice amongst participants.

Discussion

The findings of this study demonstrate that the presence of health messages in conjunction with alcohol sponsorship did not affect brand recall, brand recognition or brand choice amongst participants. As such, Hypothesis (1a) and (1b) were not supported. These findings are robust in the context of gaming media, given that we developed new games specifically for the study to control for familiarity and experience. We also controlled for known influences of alcohol brand awareness and choice, including participants' brand preferences, drinking habits, brand familiarity and sporting involvement. It is possible that the ambiguity surrounding the health message did not impact consumer preferences. This result is consistent with commentary acknowledging the ambiguity and subjectivity associated with 'drinking responsibly' (e.g. Clegg Smith, Cukier, and Jernigan 2014; Barry and Goodson), with determination of appropriate consumption behaviour resting with consumers. This suggests that health campaigns need to be enriched beyond just a short phrase, and customized for target audiences (Martin-Moreno et al. 2013). In other words, they did not convey a health message and instead were ingrained as a marketing tool for the product (Clegg Smith, Cukier, and Jernigan 2014). Thus, the findings in the present study may be consistent with other research across various media platforms that has examined the effects of health messages in alcohol products (see e.g. Babor, Miller, and Edwards 2010; Clegg Smith, Cukier, and Jernigan 2014; Wakefield, Loken, and Hornik 2010). Specifically, we find in-game advertisements in conjunction with health messaging have similar effects on brand recall and recognition. Further research is warranted to extrapolate the effects of health messaging, particularly in a non-traditional advertising format such as a gaming platform.

The small yet growing body of literature examining the impacts of health messaging in conjunction with alcohol sponsorship questions the efficacy of such messages in promoting safe alcohol consumption attitudes and behaviours (Hill et al. 2005). Thus, despite being a long-standing health campaign endorsed by the Australian Government, this research suggests that a 'Drink Responsibly' slogan may not be resonating with audiences. In their

textual analysis of responsibility campaigns, Clegg Smith and colleagues (2014) noted that health messages were almost always inserted into the advertisement with much smaller font than the advertised product logo and associated information. As such, it is possible that the visibility of the message is not having an impact. It is also possible that consumers have become desensitized to responsibility campaigns or are not engaged enough with the content of the message. Given the health risks associated with alcohol consumption (Bye and Rossow 2010), determining the most effective means by which to inform audiences about safe consumption behaviours and attitudes is paramount, particularly for brands and advertisers. Future research would benefit from understanding the types of health campaigns most likely to be received by audiences.

Exposure to in-game alcohol sponsor brands positively predicted sponsor recall and recognition and alcohol branded choice, indicating that the impacts of in-game alcohol sponsorship placement in terms of brand awareness and preference objectives are strong. One surprising finding was that the in-game exposure to an alcohol brand enhanced general alcohol branded category choice, and not just sponsor brand choice. This has policy implications, as the banning of higher alcohol content in video games, in sporting broadcasts or even in stadia may have little impact upon consumption behaviour. Our results therefore suggest that exposure to an alcohol sponsor may cue alcohol consumption behaviour generally, including spirits, wine and ready-mixed drinks. These findings could potentially be ascribed to the 1:1 ratio of in-game sponsorship to health messages used in our study. On the other hand, players may misperceive the incorporation of health messages as a strategic move by alcohol companies to enhance their reputation (Hastings and Angus 2011). Future analytical inquiry would benefit from testing a stronger ratio of health messages to alcohol sponsorship and testing players' attributed advertising motives of the health messaging (Saffer 2002).

Additionally, examining the influence of health messaging on consumer attitudes based on the source of the message would also be worth examining given the notion that source attractiveness and credibility have the potential to be persuasive within the context of advertising. Further research on this issue would inform current policy discussions in relation to ring-fencing of alcohol excise taxes for health campaigns (Goldsmith, Lafferty, and Newell 2000). As participants were relatively experienced gamers and reported moderate to high levels of engagement with the games, perhaps they did not pay sufficient attention to the branding exposure (Walsh et al. 2013). The newly developed games for the study would also enhance the gaming engagement level of participants, as they had no previous exposure. However, our findings that alcohol branded messaging awareness and choice were not moderated by health messaging in game are concerning, given the reach and significant growth of gaming and potential to access players, and spectators who may be younger siblings or offspring of gamers (Hval Olsen 2015).

There are some limitations with our study which should be noted. First, our findings are confined to two different sporting video games and alcohol brands, which limits external validity. Further research aimed at replicating our findings across different sports–sponsor pairings and different health messaging is warranted. The inclusion of 'Drink Responsibly' as our health message stimulus could have been confused with the 'Enjoy Responsibly' slogan of Heineken, when restricted from having its name cited. Hence, this health message that comes from the brand could have the opposite effect. However, as Heineken had not experienced this restriction in Australia, the Australian participants are unlikely to be

impacted. Another limitation was the restricted game playing time of three minutes, which is not a realistic exposure length for frequent game players. Further research testing impacts of the length of exposure and playing time would be worthwhile. As the aim of the study was to examine the effects of in-game health messaging, the focus was on the presence or absence of a health message. However, previous research has highlighted the potential to enhance brand awareness when a product or message is positioned in the game where the player has minimal ability to manipulate the game (Walsh et al. 2013). Thus, future research could consider focusing on the placement of health messages to determine whether players' brand awareness is affected.

Conclusion

The aim of this study was twofold. Firstly, this research sought to understand whether embedded alcohol sponsorship messages in sports video games had an impact on the consumption and alcohol brand preferences amongst young players. Secondly, this study examined whether the incorporation of health messages alongside alcohol sponsorship-linked brand placement in-game mediated the effects of sponsorship messages on awareness and consumption preferences. While there is a well-established connection between alcohol advertising exposure in broadcast media and consumption preferences, this relationship within the context of gaming has been a neglected area of research. Our findings that health messaging has no impact upon alcohol brand preference and choice, at least in equal ratio to alcohol brand appearances in-game, have important health and policy implications. Given that one-third of gamers are under the age of 18, and that many are under the age of thirty, the risk of exposure is real and its impact upon consumption causally evidenced. Consequently, future research aimed at identifying moderating factors in the alcohol sponsorship and consumption nexus in gaming media is warranted to discern strategies through which alcohol advertising can influence awareness without normalizing the effects of alcohol. This research provides much needed evidence suggesting that regulation of advertising in gaming media may be warranted and that further examination of the extent of health messaging in relation to sponsor-linked brand placement is needed.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

References

Agostinelli, G., and J. Grube. 2002. "Alcohol Counter-advertising and the Media." *Alcohol Research & Health* 26 (1): 15–21.
Anderson, P., A. de Bruijn, K. Angus, R. Gordon, and G. Hastings. 2009. "Impact of Alcohol Advertising and Media Exposure on Adolescent Alcohol Use: A Systematic Review of Longitudinal Studies." *Alcohol and Alcoholism* 44 (3): 229–243. doi:10.1093/alcalc/agn115.

Anderson, P., D. Chisholm, and D. C. Fuhr. 2009. "Effectiveness and Cost-effectiveness of Policies and Programmes to Reduce the Harm Caused by Alcohol." *The Lancet* 373 (9682): 2234–2246. doi:10.1016/S0140-6736(09)60744-3.

Atkin, J. L., M. McCardle, and S. J. Newell. 2008. "The Role of Advertiser Motives in Consumer Evaluations of 'responsibility' Messages from the Alcohol Industry." *Journal of Marketing Communications* 14 (4): 315–335. doi:10.1080/13527260802141447.

Australian Government. 2009. *Australia: The Healthiest Country by 2020*. Edited by National Preventative Health Taskforce. Canberra: Commonwealth of Australia.

Australian Medical Association. 2012. *Alcohol Marketing and Young People: Time for a New Policy Agenda*. Canberra: Australian Medical Association.

Babor, T., P. Miller, and G. Edwards. 2010. "Vested Interests, Addiction Research and Public Policy." *Addiction* 105 (1): 4–5. doi:10.1111/add.2010.105.issue-1.

Barry, A. E., and P. Goodson. 2010. "Use (and Misuse) of the Responsible Drinking Message in Public Health and Alcohol Advertising: A Review." *Health Education & Behavior* 37 (2): 288–303. doi:10.1177/1090198109342393.

Bennett, R. 1999. "Sports Sponsorship, Spectator Recall and False Consensus." *European Journal of Marketing* 33 (3–4): 291–313. doi:10.1108/03090569910253071.

Biscaia, R., A. Correia, S. Ross, and A. Rosado. 2014. "Sponsorship Effectiveness in Professional Sport: An Examination of Recall and Recognition Among Football Fans." *International Journal of Sports Marketing and Sponsorship* 16 (1): 2–18. doi:10.1108/IJSMS-16-01-2014-B002.

Bye, E. K., and I. Rossow. 2010. "The Impact of Drinking Pattern on Alcohol-related Violence Among Adolescents: An International Comparative Analysis." *Drug and Alcohol Review* 29 (2): 131–137. doi:10.1111/j.1465-3362.2009.00117.x.

Casswell, S. 2013. "Vested Interests in Addiction Research and Policy. Why Do we Not See the Corporate Interests of the Alcohol Industry as Clearly as we see Those of the Tobacco Industry?" *Addiction* 108 (4): 680–685. doi:10.1111/add.2013.108.issue-4.

Casswell, S., and T. Thamarangsi. 2009. "Reducing Harm from Alcohol: Call to Action." *The Lancet* 373 (9682): 2247–2257. doi:10.1016/S0140-6736(09)60745-5.

Cauberghe, V., and P. De Pelsmacker. 2010. "Advergames." *Journal of Advertising* 39 (1): 5–18. doi:10.2753/JOA0091-3367390101.

Cianfrone, B. A., J. J. Zhang, G. T. Trail, and R. J. Lutz. 2008. "Effectiveness of In-game Advertisements in Sport Video Games: An Experimental Inquiry on Current Gamers." *International Journal of Sport Communication* 1 (2): 195–218. doi:10.1123/ijsc.1.2.195.

Clegg Smith, K., S. Cukier, and D. H. Jernigan. 2014. "Defining Strategies for Promoting Product Through Drink Responsibly Messages in Magazine Ads for Beer, Spirits, and Alcopops." *Drug and Alcohol Dependence* 142: 168–173. doi:10.1016/j.drugalcdep.2014.06.007.

Cody, K., and S. Jackson. 2014. "The Contested Terrain of Alcohol Sponsorship of Sport in New Zealand." *International Review for the Sociology of Sport* 51 (4): 375–393. doi:10.1177/1012690214526399.

Cornwell, T. B. 1995. "Sponsorship-linked Marketing Development." *Sport Marketing Quarterly* 4: 13–24.

Cornwell, T. B., C. S. Weeks, and D. P. Roy. 2005. "Sponsorship-linked Marketing: Opening the Black Box." *Journal of Advertising* 34 (2): 21–42. doi:10.1080/00913367.2005.10639194.

Dardis, Frank E., M. Schmierbach, and A. M. Limperos. 2012. "The Impact of Game Customization and Control Mechanisms on Recall of Integral and Peripheral Brand Placements in Videogames." *Journal of Interactive Advertising* 12 (2): 1–12. doi:10.1080/15252019.2012.10722192.

DISCUS (Distilled Spirits Council of the United States). 2011. *Code of Responsible Practices for Beverage Alcohol Advertising and Marketing*. Edited by Distilled Spirits Council. Washington, DC: Distilled Spirits Council of the United States.

Dunstone, K., E. Brennan, M. D. Slater, H. G. Dixon, S. J. Durkin, S. Pettigrew, and M. A. Wakefield. 2017. "Alcohol Harm Reduction Advertisements: A Content Analysis of Topic, Objective, Emotional Tone, Execution and Target Audience." *BMC Public Health* 17 (1): 2224–325. doi:10.1186/s12889-017-4218-7.

Entertainment Software Association. 2016. *Essential Facts About the Computer and Video Game Industry*. Washington, DC: Entertainment Software Association.

Evans, W. D. 2008. "Social Marketing Campaigns and Children's Media Use." *The Future of Children* 18 (1): 181–203. doi:10.1353/foc.0.0009.

Gallagher, K. M., and J. A. Updegraff. 2012. "Health Message Framing Effects on Attitudes, Intentions, and Behavior: A Meta-analytic Review." *Annals of Behavioral Medicine* 43 (1): 101–116. doi:10.1007/s12160-011-9308-7.

Glassman, T., C. E. Werch, E. Jobli, and H. Bian. 2007. "Alcohol-related Fan Behavior on College Football Game Day." *Journal of American College Health* 56 (3): 255–260. doi:10.3200/JACH.56.3.255-260.

Glock, S., and S. Krolak-Schwerdt. 2013. "Changing Outcome Expectancies, Drinking Intentions, and Implicit Attitudes Toward Alcohol: A Comparison of Positive Expectancy-related and Health-related Alcohol Warning Labels." *Applied Psychology: Health and Well-Being* 5 (3): 332–347. doi:10.1111/aphw.12013.

Goldsmith, R. E., B. A. Lafferty, and S. J. Newell. 2000. "The Impact of Corporate Credibility and Celebrity Credibility on Consumer Reaction to Advertisements and Brands." *Journal of Advertising* 29 (3): 43–54. doi:10.1080/00913367.2000.10673616.

Grunseit, A. C., R. MacNiven, R. Orr, M. Grassmayr, B. Kelly, D. Davies, S. Colagiuri, and A. E. Bauman. 2012. "Australian athletes? Health behaviours and Perceptions of Role Modelling and Marketing of Unhealthy Products." *Health Promotion Journal of Australia* 23 (1): 63–69.

Gupta, P. B., and K. R. Lord. 1998. "Product Placement in Movies: The Effect of Prominence and Mode on Audience Recall." *Journal of Current Issues & Research in Advertising* 20 (1): 47–59.

Harding, R., and C. S. Stockley. 2007. "Communicating Through Government Agencies." *Annals of Epidemiology* 17 (5): S98–S102.

Hastings, G., and K. Angus. 2011. "When is Social Marketing Not Social Marketing?" *Journal of Social Marketing* 1 (1): 45–53.

Heaven, D. 2014a. "Esport by Numbers." *New Scientist* 223 (2982), 19. doi: 10.1016/S0262-4079(14)61578-5.

Heaven, D. 2014b. "Rise and Rise of Esports." *New Scientist* 223 (2982), 17. doi: 10.1016/S0262-4079(14)61574-8.

Hill, S. C., S. R. Thomsen, R. M. Page, and N. Parrott. 2005. "Alcohol Advertisements in Youth-oriented Magazines: Persuasive Themes and Responsibility Messages." *American Journal of Health Education* 36 (5): 258–265. doi:10.1080/19325037.2005.10608194.

Hval Olsen, A. H. 2015. "The Evolution of eSports: An Analysis of its Origin and a Look at its Prospective Future Growth as Enhanced by Information Technology Management Tools." Masters of Arts, Management of Information Technology, Coventry University.

Jernigan, D. H., J. Ostroff, and C. Ross. 2005. "Alcohol Advertising and Youth: A Measured Approach." *Journal of Public Health Policy* 26 (3): 312–325. doi:10.1057/palgrave.jphp.3200038.

Johar, G. V., and M. T. Pham. 2000. "Relatedness, Prominence, and Constructive Sponsor Identification." *Advertising & Society Review* 1 (1). doi: 10.1353/asr.2000.0006.

Jones, S. C. 2010. "When Does Alcohol Sponsorship of Sport Become Sports Sponsorship of Alcohol? A Case Study of Developments in Sport in Australia." *International Journal of Sports Marketing and Sponsorship* 11 (3): 67–78. doi:10.1108/IJSMS-11-03-2010-B007.

Jones, S. C., L. Phillipson, and L. Barrie. 2010. "'Most men drink… especially like when they play sports' – Alcohol Advertising During Sporting Broadcasts and the Potential Impact on Child Audiences." *Journal of Public Affairs* 10 (1–2): 59–73. doi: 10.1002/pa.340.

Jones, S. C., L. Phillipson, and M. Lynch. 2006. "Alcohol and Sport: Can We Have One Without the Other?" The Australian and New Zealand Marketing Academy (ANZMAC) Conference, Queensland University of Technology, Brisbane, Australia, December 4–6, 2006.

Kelly, S. J., M. Ireland, F. Alpert, and J. Mangan. 2014. "The Impact of Alcohol Sponsorship in Sport upon University Sportspeople." *Journal of Sport Management* 28 (4): 418–432. doi:10.1123/jsm.2013-0078.

Kelly, S., M. Ireland, F. Alpert, and J. Mangan. 2015. "Young Consumers' Exposure to Alcohol Sponsorship in Sport." *International Journal of Sports Marketing and Sponsorship* 16 (2): 2–21. doi:10.1108/IJSMS-16-02-2015-B002.

Kim, Y., P. Walsh, and S. D. Ross. 2008. "An Examination of the Psychological and Consumptive Behaviors of Sport Video Gamers." *Sport Marketing Quarterly* 17 (1): 44–53.

Kinard, B. R., and K. B. Hartman. 2013. "Are You Entertained? The Impact of Brand Integration and Brand Experience in Television-related Advergames." *Journal of Advertising* 42 (2–3): 196–203. doi:10.1080/00913367.2013.775794.

Knai, C., M. Petticrew, M. A. Durand, E. Eastmure, and N. Mays. 2015. "Are the Public Health Responsibility Deal Alcohol Pledges Likely to Improve Public Health? An Evidence Synthesis." *Addiction* 110 (8): 1232–1246. doi:10.1111/add.12855.

Kohl, F., and T. Otker. 1985. "Sponsorship – Some Practical Experiences in Philips Consumer Electronics." ESOMAR Seminar on Below-the-Line and Sponsoring: The Use of Promotion and Sponsorship in the Marketing Mix, Milan, Italy, November 6–8.

Laakkonen, J. 2014. "Business Models in Esports: Case Assembly Winter 2014 Steelseries Dota 2 Invitational." Bachelor's thesis, International Business Management, Turku University of Applied Sciences.

Lee, M., and R. J. Faber. 2007. "Effects of Product Placement in On-line Games on Brand Memory: A Perspective of the Limited-capacity Model of Attention." *Journal of Advertising* 36 (4): 75–90. doi:10.2753/JOA0091-3367360406.

Macniven, R., B. Kelly, and L. King. 2015. "Unhealthy Product Sponsorship of Australian National and State Sports Organisations." *Health Promotion Journal of Australia* 26 (1): 52–56. doi:10.1071/HE14010.

Maher, A., N. Wilson, L. Signal, and G. Thomson. 2006. "Patterns of Sports Sponsorship by Gambling, Alcohol and Food Companies: An Internet Survey." *BMC Public Health* 6 (1): 1–104. doi:10.1186/1471-2458-6-95.

Mallinckrodt, V., and D. Mizerski. 2007. "The Effects of Playing an Advergame on Young Children's Perceptions, Preferences, and Requests." *Journal of Advertising* 36 (2): 87–100. doi:10.2753/JOA0091-3367360206.

Martin-Moreno, J. M., M. E. Harris, J. Breda, L. Møller, J. L. Alfonso-Sanchez, and L. Gorgojo. 2013. "Enhanced Labelling on Alcoholic Drinks: Reviewing the Evidence to Guide Alcohol Policy." *The European Journal of Public Health* 23 (6): 1082–1087. doi:10.1093/eurpub/ckt046.

Meenaghan, T. 2001. "Understanding Sponsorship Effects." *Psychology & Marketing* 18 (2): 95–122. doi:10.1002/(ISSN)1520-6793.

Nelson, M. R. 2002. "Recall of Brand Placements in Computer/Video Games." *Journal of Advertising Research* 42 (2): 80–92. doi:10.2501/JAR-42-2-80-92.

Nelson, M. R., H. Keum, and R. A. Yaros. 2004. "Advertainment or Adcreep Game Players? Attitudes toward Advertising and Product Placements in Computer Games." *Journal of Interactive Advertising* 5 (1): 3–21. doi:10.1080/15252019.2004.10722090.

Nelson, T. F., and H. Wechsler. 2003. "School Spirits: Alcohol and Collegiate Sports Fans." *Addictive Behaviors* 28 (1): 1–11. doi:10.1016/S0306-4603(01)00296-9.

Newzoo. 2015. "The Global Growth of Esports: Trends Revenues, and Audience Towards 2017." *Newzoo.* https://www.newzoo.com/esportsreport.

O'Brien, K. S., J. Ferris, I. Greenlees, S. Jowett, D. Rhind, P. A. Cook, and K. Kypri. 2014. "Alcohol Industry Sponsorship and Hazardous Drinking in UK University Students Who Play Sport." *Addiction* 109 (10): 1647–1654. doi:10.1111/add.2014.109.issue-10.

O'Brien, K. S., and K. Kypri. 2008. "Alcohol Industry Sponsorship and Hazardous Drinking Among Sportspeople." *Addiction* 103 (12): 1961–1966. doi:10.1111/add.2008.103.issue-12.

O'Brien, K. S., P. G. Miller, G. S. Kolt, M. P. Martens, and A. Webber. 2011. "Alcohol Industry and Non-Alcohol Industry Sponsorship of Sportspeople and Drinking." *Alcohol and Alcoholism* 46 (2): 210–213. doi:10.1093/alcalc/agq095.

Pappu, R., and T. B. Cornwell. 2014. "Corporate Sponsorship as an Image Platform: Understanding the Roles of Relationship Fit and Sponsor–Sponsee Similarity." *Journal of the Academy of Marketing Science* 42 (5): 490–510. doi:10.1007/s11747-014-0373-x.

Peters, S., and G. Leshner. 2013. "Get in the Game: The Effects of Game-product Congruity and Product Placement Proximity on Game Players' Processing of Brands Embedded in Advergames." *Journal of Advertising* 42 (2–3): 113–130. doi:10.1080/00913367.2013.774584.

Pettigrew, S., M. Rosenberg, R. Ferguson, S. Houghton, and L. Wood. 2013. "Game On: Do Children Absorb Sports Sponsorship Messages?" *Public Health Nutrition* 16 (12): 2197–2204. doi:10.1017/S1368980012005435.

Rifon, N. J., S. M. Choi, C. S. Trimble, and H. Li. 2004. "Congruence Effects in Sponsorship: The Mediating Role of Sponsor Credibility and Consumer Attributions of Sponsor Motive." *Journal of Advertising* 33 (1): 30–42. doi:10.1080/00913367.2004.10639151.

Rosenberg, M., and R. Ferguson. 2014. "Maintaining Relevance: an Evaluation of Health Message Sponsorship at Australian Community Sport and Arts Events." *BMC Public Health* 14 (1): 276–1430. doi:10.1186/1471-2458-14-1242.

Roth, M. S., and J. B. Romeo. 2000. "Co-promotions Drive Health Plan Satisfaction and Subscriber Appeal." *Marketing Health Services* 19 (4): 21–28.

Roy, D. P., and T. B. Cornwell. 2004. "The Effects of Consumer Knowledge on Responses to Event Sponsorships." *Psychology & Marketing* 21 (3): 185–207. doi:10.1002/(ISSN)1520-6793.

Saffer, H. 2002. "Alcohol Advertising and Youth." *Journal of Studies on Alcohol, Supplement* 14: 173–181. doi:10.15288/jsas.2002.s14.173.

Scholes-Balog, K. E., J. A. Heerde, and S. A. Hemphill. 2012. "Alcohol Warning Labels: Unlikely to Affect Alcohol-related Beliefs and Behaviours in Adolescents." *Australian and New Zealand Journal of Public Health* 36 (6): 524–529. doi:10.1111/j.1753-6405.2012.00934.x.

Siemens, J. C., S. Smith, and D. Fisher. 2015. "Investigating the Effects of Active Control on Brand Recall Within In-Game Advertising." *Journal of Interactive Advertising* 15 (1): 43–53. doi:10.1080/15252019.2015.1021432.

Simmons, C. J., and K. L. Becker-Olsen. 2006. "Achieving Marketing Objectives Through Social Sponsorships." *Journal of Marketing* 70 (4): 154–169. doi:10.1509/jmkg.70.4.154.

Smith, S. W., C. J. Atkin, and J. Roznowski. 2006. "Are 'drink responsibly' Alcohol Campaigns Strategically Ambiguous?" *Health Communication* 20 (1): 1–11. doi:10.1207/s15327027hc2001_1.

Statista. 2016. "Global Sponsorship Spending by Region from 2009 to 2016 (in Billion U.S. Dollars)." https://www.statista.com/statistics/196898/global-sponsorship-spending-by-region-since-2009/.

Superdata. 2014. "Esports: The Market Brief." *Superdata*. http://www.snjv.org/wp-content/uploads/2015/05/eSports_Market_Brief_2015_SuperData_Research.pdf.

Wakefield, M. A., B. Loken, and R. C. Hornik. 2010. "Use of Mass Media Campaigns to Change Health Behavior." *The Lancet* 376 (9748): 1261–1271. doi:10.1016/S0140-6736(10)60809-4.

Walsh, P., Y. Kim, and S. D. Ross. 2008. "Brand Recall and Recognition: A Comparison of Television and Sport Video Games as Presentation Modes." *Sport Marketing Quarterly* 17 (4): 201–208.

Walsh, P., M. H. Zimmerman, G. Clavio, and A. S. Williams. 2013. "Comparing Brand Awareness Levels of In-game Advertising in Sport Video Games Featuring Visual and Verbal Communication Cues." *Communication & Sport* 2 (4): 386–404. doi:10.1177/2167479513489120.

Westberg, K., C. Stavros, A. C. Smith, G. Munro, and K. Argus. 2016. "An Examination of How Alcohol Brands Use Sport to Engage Consumers on Social Media." *Drug and alcohol review*. Online first: 1–8. doi:10.1111/dar.12493.

Winkler, T., and K. Buckner. 2006. "Receptiveness of Gamers to Embedded Brand Messages in Advergames: Attitudes Towards Product Placement." *Journal of Interactive Advertising* 7 (1): 3–32. doi:10.1080/15252019.2006.10722123.

Wise, K., P. D. Bolls, H. Kim, A. Venkataraman, and R. Meyer. 2008. "Enjoyment of Advergames and Brand Attitudes: The Impact of Thematic Relevance." *Journal of Interactive Advertising* 9 (1): 27–36. doi:10.1080/15252019.2008.10722145.

World Health Organisation. 2010. Global Strategy to Reduce the Harmful Use of Alcohol. Geneva, Switzerland: World Health Organization. http://www.who.int/substance_abuse/msbalcstragegy.pdf.

World Health Organisation. 2014. Global Status Report on Alcohol and Health. Geneva, Switzerland: World Health Organization. http://apps.who.int/iris/bitstream/10665/112736/1/9789240692763_eng.pdf.

Appendix 1. Measures

Variable	Measure
Dependent variables	
Free recall	'Please name the sponsor in the game you just played'
Recognition	'Please recall the name of the sponsor in the game you just played by selecting the name from the following list' (eight names displayed)
Brand choice	'What beverage below do you most feel like drinking now?' (Select from 16 brand logos, including 8 alcoholic and 8 non-alcoholic brands)
	'I do not feel like drinking any of these brands right now'
Independent variables	
Health messaging	Manipulated (present vs. absent)
Alcohol sponsorship	Manipulated (present, non alcohol, absent)
Control variables	
Brand preference	'Please record your level of enjoyment of beer'
	Single item, seven-point scale
	1 = 'Do not enjoy it at all' to 7 = 'Enjoy it very much'
	'What brand of beer do you usually drink?'
Brand familiarity	'please indicate how familiar are you with [BRAND]'. I find [BRAND]
	3 items, seven-point scale
	1 = 'very unfamiliar to 7 = very familiar', 1 = 'not knowledgeable to 7 = very knowledgeable'
	1 = 'very inexperienced to 7 = 'very experienced'
Sponsor-sport congruence	5 items, seven-point scales
	1 = 'does not make sense to 7 = makes sense'
	1 = 'low fit to 7 = high fit'
	1 = 'not complementary to 7 = complementary'
	1 = 'inconsistent to 7 = consistent'
	1 = 'unrepresentative to 7 = representative' 2006)
Sport involvement	'How involved are you with car racing/soccer?'
	3 items, 7 point scale
	1 = 'unimportant to 7 = very important', 1 = 'personally irrelevant to 7 = personally relevant'
	1 = 'of no concern to 7 = 'of great concern'
Gaming involvement	5 items, seven-point scales
	'Please circle the level of [involvement, concentration, attention, interest, and absorption] in the game you have just played by circling the scale below where 1 = very low to 7 = very high'
Alcohol consumption behaviours	2 items
	'How many standard drinks would you consume daily, averaged over the previous month?'
	'How many standard drinks would you have consumed during the past week?'