

A new frontier: alcohol sponsorship activation through esports

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Received 15 March 2020
Revised 24 June 2020
Accepted 1 December 2020

Abstract

Purpose – The purpose of this paper is to examine the impact of alcohol sponsorship-linked advertising through esports upon young gaming audiences and how gaming behaviours affect advertising response.

Design/methodology/approach – A cross-sectional survey study was employed to examine the prevalence and nature of alcohol advertising in esports, and the impact of esports participation upon young audiences' consumption and preferences concerning alcohol. Survey data were collected from 976 young Australian gamers aged between 16 and 34 years (58.9% male) using online questionnaires.

Findings – Results revealed a vulnerability to alcohol sponsorship and advertising among 25 to 34-year-old and heavy gamer cohorts. As predicted, heavy gamers were more receptive to alcohol advertising in terms of awareness, preference and consumption while gaming than casual gamers.

Practical implications – This research advances theories of consumer behaviour and advertising exposure situated in a new landscape of converging virtual and real experiential marketing. It also provides much-needed evidence to guide marketing strategy to the next-generation audiences and regulation of new and burgeoning digital platforms. Our research also highlights a need for policy to address the burgeoning, largely unregulated nature of online gaming.

Originality/value – This research provides the first empirical evidence of the impacts of alcohol-linked sponsorship in esports upon young playing and streaming audiences. It informs marketing strategy and policy in relation to the rapidly growing, potentially vulnerable online competitive gaming audience.

Keywords Esports, Advertising, Sponsorship, Alcohol, Policy

Paper type Research paper

Introduction

Esports, defined as competitive online video gaming is rapidly becoming the largest entertainment industry in the world, with an audience of 500 million globally, prize money totalling \$150.8 million in 2019, and revenues projected to grow to \$1.2 billion in 2020 (Newzoo, 2018). The COVID-19 pandemic has further fuelled the growth of esports, with many sports such as the NBA and Formula One diversifying into simulated sport through online competitions, in an attempt to fill the void of live sport. While live esports tournaments have been similarly restricted to live sport, esports have been more readily able to adapt to a completely online broadcast, attracting both sports fans and esports fans (Adgate, 2020). With esports audiences rapidly growing, companies are focusing on monetising this audience. Esports represent an attractive opportunity for companies, traditional sports, and entertainment organizations keen to engage with valuable millennial and Gen Z consumers. Sponsorship and media rights are driving revenue growth, and players and teams are developing their brands and building their own audiences and loyal fan bases. The industry

The authors acknowledge funding support from the Foundation for Alcohol Research and Education.

This manuscript has not been published elsewhere and has not been submitted simultaneously for publication elsewhere. The authors declare no potential conflicts of interest with respect to the research, authorship and/or publication of this paper.



is attracting major brand sponsors including Red Bull, McDonald's, Anheuser-Busch and Coca-Cola, and many traditional sports brands including the Formula One, NBA, NFL, AFL and A-League have established their own esports franchises and leagues.

While there is some discrepancy in relation to the definition of esports, esports can be defined as an "organised and competitive approach to playing computer games" (Seo and Jung, 2016, p. 636). Hamari and Sjöblom (2017) expand this definition to include professional and amateur gaming, video games, the use of consoles, tablets and mobiles, and contemporary forms of gaming, such as virtual reality and augmented reality. Esports can therefore be considered a form of sports where the primary aspects of the sport are facilitated by electronic systems; both the input of players and teams along with the output of the esports system are facilitated by human-computer interfaces (Hamari and Sjöblom, 2017; Hallmann and Giel, 2019).

Esports are comprised of a globally connected industry of game publishers, tournament owners, leagues, teams, players, spectators, sponsors and media. Esports feature tournaments played across various platforms, competitions that take place both online and offline, and events taking place around the world. While the largest tournaments are still held in local stadiums, newer venues are focusing on smaller competitions, hence bringing esports closer to fans and mainstream growth. Given the potential vulnerability of the young audience engaging with unregulated media platforms, it is critical that insight is gained into the esports landscape and potential for exposure to risky product categories increasingly affiliated through sponsorship with esports. To date, no study has examined the relationship between preferences and behaviours amongst esports participants as a function of alcohol and other harmful product sponsorship-linked marketing associated with the sector. While sponsorship-linked marketing by harmful products such as alcohol, gambling and junk food in sport has been previously examined, the rapidly growing, largely unregulated, digital context of esports and simulated sports has only received limited research attention.

Product placement and sponsorship in video games

Findings from a recent content analysis study highlight that exposure to harmful categories through esports is pervasive and well integrated into gaming content and environment (Chambers, 2020; Kelly and Gerrish, 2019). The exponential reach of esports via platforms including Twitch and YouTube combined with uniquely engaging content consumed in extended periods, means that these activations have potential to leverage strong exposure. Junk food and alcohol categories have been found to be most common, with advertising tactics typically including embedded content through streaming and event-related activations. Moreover, a recent review found that sports sponsorships with food and beverage companies often promote nutrient-poor and energy-dense foods within video games, which in turn leads to increased preferences for, and consumption of, such products (Bragg *et al.*, 2018). With the rise of esports, companies are beginning to capitalise on this new media as a platform for promotion. A key advantage of product placement in video games is that users spend prolonged amounts of time engaged with the games, resulting in increased brand exposure time (Martí-Parreño *et al.*, 2017). Studies have found this form of in-game advertising to produce strong effects on participant's memory processing (Goodman *et al.*, 2018; Yang *et al.*, 2006). Furthermore, experimental studies have found a causal link between the presence of food brands in video games and increased consumption and liking of energy-dense snack foods among youth (Dias and Agante, 2011; Folkvord *et al.*, 2013; Harris *et al.*, 2012).

There is also research that shows the impacts of alcohol-branded advertising and promotion of other risky product categories (e.g. energy drinks) within the gaming sphere. Multiple European studies involving school-aged samples have demonstrated relationships between

substance use (i.e. alcohol and tobacco) and participation in video games (Coëffec *et al.*, 2015; Cranwell *et al.*, 2016; Van Rooij *et al.*, 2014). Although the link between gaming and substance use has been found consistently across adolescent samples, whether this is directly impacted by the type of advertising within esports remains unknown. Hence, there is a lack of recent research on the evolved and highly commercialised context of online competitive gaming and impacts of associated advertising upon audiences who engage through playing and streaming.

Research aims

These findings suggest reason for concern regarding the recent growth in esports sponsorships with alcohol, gambling and energy drink companies (e.g. 5 Hour Energy sponsoring Detroit Renegades in Counter-Strike: Global Offensive) (Wolf, 2017). It is therefore timely to examine the nature, extent and impacts of harmful product advertising and sponsorship in the high-growth esports landscape. Our research was conducted to address the two key questions relating to competitive online gaming:

- (1) How does exposure to alcohol brands through esports influence young gaming audiences?
- (2) How does gaming behaviour affect susceptibility to alcohol advertising through gaming?

This research provides timely insight into the esports ecosystem, consumer behaviour within it and the implications for unhealthy marketing to young participants. We report findings from a cross-sectional survey examining the impact of esports participation on young audiences' consumption and preferences concerning alcohol. We build upon theories of mere exposure, expertise and the theory of planned behaviour by examining their relevance in a rapidly growing, under-researched context. Research outcomes will be used to inform health policy and governance of the esports industry, advertising regulation in newer digital media, gaming publishers and sponsors in the sector. It is anticipated that this research will position policymakers to make informed decisions in this critical and burgeoning landscape in sport and entertainment.

Literature review

Since 2016, more than 600 esports sponsorship agreements have been made (Nielsen, 2019) with major brand categories including fast food, alcohol, gambling, and energy drinks. Despite this, there have been no empirical studies assessing the impact that exposure to these brands has on esports participants' consumption and preference behaviours associated with sponsorship and advertising embedded in esports. In particular, research overlooks minors' engagement with esports, and no research has examined impacts of partner activations through esports. While product placement and advertising exposure effects in video games have been examined (Brand and Todhunter, 2016; Lee and Schoenstedt, 2011; Marti-Parreño *et al.*, 2017), the newly evolved and hyper-connected context of esports represents a new domain warranting research. This research responds to this gap and is one of the first studies on the impacts of alcohol advertising and sponsorship in esports. The esports sector is currently self-regulated, and while there has been some positive governance exhibited, this governance is inconsistent across jurisdictions and difficult to enforce due to the global nature of the esports ecosystem. In Australia, alcohol advertising is restricted in above the line and digital media through the [Alcohol Beverages Advertising Code \(2019\)](#). However, this code has limited reach in an esports context, as it is only mandated to cover voluntary signatories to the code and does not extend to sponsorship and activations including branded content, influencer endorsement and event marketing. While this code is Australian-specific,

it reflects the idiosyncratic nature and weak enforcement of advertising restrictions applying to digital platforms in other jurisdictions.

Although research on esports sponsorship impacts upon audiences is very limited, there has been extensive research examining alcohol-linked sponsorship in sport, which may provide some theoretical guidance for predictions of impacts in an esports context. While the two contexts significantly differ in terms of content, audience and engagement strategies, there are commonalities in terms of the uncertainty of competitive outcome and sponsored assets, including teams, athletes and broadcast access. We therefore review extant literature on impacts of sponsorship in sport with the aim of identifying relevant theory that may explain consumers' response to sponsorship-linked advertising by harmful product categories such as alcohol in esports.

Sports sponsorship research

Previous research, largely through cross-sectional surveys and content analyses, has demonstrated that exposure to alcohol sponsorship-linked advertising is prevalent in sport, and is associated with more favourable attitudes towards advertised brands, elevated brand awareness and acts as a cue to behaviour (e.g. Kelly *et al.*, 2011; Cornwell, 2019). Unhealthy product advertising in sport has increased over the past decade, to the extent that gambling, alcohol, junk food and energy drinks are now firmly embedded as sponsors, and often consumed during sports events (Shoffner and Koo, 2020). Unhealthy product sponsorship has been regarded as controversial by consumers and policy makers (Danylchuk and MacIntosh, 2009; Macniven *et al.*, 2015). For example, studies have found adverse consumer perceptions of unhealthy fast food sponsors at sports events (Pappu and Cornwell 2014). The impacts of unhealthy sponsorship in sport have extended across professional, regional and local sports, including junior sports (Kelly *et al.*, 2011; Gonzalez *et al.*, 2020). Fandom or affinity with the sponsored sport has also been demonstrated to be positively associated with more favourable attributions, affect and behaviours in relation to sponsors (Wann *et al.*, 2016; Biscaia *et al.*, 2013). Social identity theory has been applied in a sports sponsorship processing context, with team identification and involvement being found to influence purchase intent and attitudes toward the sponsored product (Madrigal, 2001).

Traditionally, the concept of fit between sponsor and sponsored property has been applied to understanding how sponsorship is processed by audiences, with stronger perceived fit translating to more positive brand outcomes in terms of image, awareness, affect and behaviour (e.g. Olsen and Thjøme, 2003). Fit has also been demonstrated to have a stronger effect when combined with similarity between the partnering entities (Pappu and Cornwell, 2014; Kim *et al.*, 2015). Motive attributions, or the inferences that individuals make about reasons for sponsor partnering are influential in development of attitudes toward the sponsor and sponsee (Woisetschlager *et al.*, 2017). The perceived inconsistency between unhealthy product sponsorship and the notion of sport as a vehicle for health (Danylchuk and MacIntosh, 2009) has prompted a renewed focus upon authenticity of the sponsorship. For example, Charlton and Cornwell (2019) demonstrated that authenticity can be a better predictor of consumer attitudes than sponsorship fit using a perceived brand authenticity scale. Individuals involved with, and who strongly identify with the sponsored property may extend this identification and positive attitudes to the sponsorship relationship and the sponsor (Kim *et al.*, 2015; Herrmann *et al.*, 2016; Cornwell, 2019). This provides some explanation for harmful product sponsorship eliciting positive evaluations despite the inconsistency in health positioning. In addition, negative perceptions that may be associated with harmful product sponsorship may be attenuated through corporate social responsibility initiatives aimed at promoting authenticity (Shoffner and Koo, 2020; Becker-Olsen *et al.*, 2006).

Table 1 summarises key studies on harmful product sponsorship through sport over the past decade. While not exhaustive, it highlights the application of mere exposure theory in most studies, along with typically cross sectional survey and content analysis methods. Mere exposure has been used to explain the relationship between exposure to alcohol advertising and cognitions and behaviours among young consumers (e.g. Hanewinkel *et al.*, 2007; Fielder *et al.*, 2009). The weight of research suggests that repetitive exposure produces feelings of familiarity and appeal Olson and Thjomøe (2003), in addition to normalisation and endorsement of the alcohol sponsor. A causal relationship has been found between exposure and alcohol consumption through several longitudinal studies (Ellickson *et al.*, 2005; Snyder *et al.*, 2006), and athletes sponsored by alcohol companies have been found to consume and prefer alcohol more than those not sponsored by alcohol (O'Brien *et al.*, 2011; Teal *et al.*, 2019). A systematic review by Brown (2016) corroborated prior research by finding an association between alcohol sports sponsorship and alcohol consumption. In addition to mere exposure, the Elaboration Likelihood Model of persuasion (Cacioppo and Petty, 1984) has been applied to understand how advertising and sponsorship might impact audiences. This framework proposes dual routes of information processing, central (i.e. high level of processing) and peripheral (i.e. low level processing), which may occur when exposed to persuasive advertising, and is potentially useful in the context of predicting responses and processing in online gaming, given the embeddedness of sponsorship and advertising in game through branded content, rewards and banners (Kelly and Gerrish, 2019).

Theoretical framework and hypotheses

Mere exposure

Research suggests gamers are exposed extensively to advertising and sponsorship affiliated with gaming, both embedded in the content of games, and linked more peripherally, in streaming or tournament environments. The sports sponsorship literature discussed demonstrates that this repeated exposure has been demonstrated by mere exposure theory to produce enhanced memory and appeal effects (Monin, 2003; Zajonc, 1968). Moreover, peripheral and subconscious messaging has been shown to be processed consciously and favorably (Bornstein, 1989; Janiszewski, 1990). The mere exposure hypothesis has been supported in sponsorship and advertising research as a mechanism of consumer processing (Zajonc, 1968; Bennett, 1999), across a range of stimuli Bornstein (1989); Cornwell *et al.* (2005). That is, frequency promotes familiarity, which is associated with positive attitudes. Perceptual fluency has also been used as an explanation for the relationship between exposure and positive affect, premised on the basis that known representations are more easily accessed for cognitive processing, making messaging more likeable (Bornstein and D'Agostino, 1994). Hence, based upon the mere exposure theory well established in sport sponsorship research, the repeated exposure to advertising and sponsorship is likely to lead to heightened and more favorable cognitive and affective processing by gamers.

Expertise

Previous research has established that experts tend not to lose focus on peripheral stimuli, in contrast to novices, and are thus likely to have a stronger awareness of product placement or sponsorship in game (Green and Bavelier, 2003; Greenfield *et al.*, 1994; West *et al.*, 2008). Specifically, as one focuses on a specific location, the resolution of the surrounding, unexpected locations blurs. However, Greenfield *et al.* (1994), suggest that when experts focus their attention they do not lose resolution in the periphery as much as novices and hence have greater awareness of the outlying stimuli.

Table 1.
Harmful product
sponsorship-linked
advertising in sport
literature overview

Citation	Harmful products examined	Sport context	Method	Theoretical framework	Findings
Bestman <i>et al.</i> (2015)	Junk food, gambling, alcohol	AFL, NRL, Cricket, NBL	Children were asked to match team logos with the logos of their shirt sponsors	Mere exposure	The study revealed that over three-quarters of children were able to correctly recall the shirt sponsor of at least one professional sports team. The study further revealed that team-sponsor associations appear to occur at both the product category and brand level
Djokari <i>et al.</i> (2019)	Gambling	Football	Survey of British adults and children	Mere exposure	Surveyed children who reported watching a large amount of football (and therefore broadcasts featuring gambling advertisements) were found to be significantly more likely to be able to recall the names of gambling brands than other children
Ellickson <i>et al.</i> (2005)	Alcohol	Football and basketball	Survey of American school children	Mere exposure	Exposure to alcohol advertising in more common venues, such as sports and supermarkets, was found to more strongly predict future drinking of children who had not yet started drinking
Pappu and Cornwell (2014)	Junk Food	Charitable causes	Experiments	Fit and similarity of sponsorship relationship	Similarity between a corporate sponsor and a sponsored cause can interact with fit, influencing sponsorship evaluations directly and shaping attitudes and behavioral intentions toward constituents indirectly
Gonzalez <i>et al.</i> (2020)	Alcohol Junk food	Junior sports clubs	Survey of parents of junior sports participants and club representative	Mere exposure; normalisation	Large proportions of community sports clubs with junior members are sponsored by the alcohol industry and the fast food industry
Houghton <i>et al.</i> (2014)	Alcohol	2008 European Rugby Cup	Survey of children in Munster and other areas of Ireland	Mere exposure	Children from Munster, being the province of the 2008 European Rugby Cup winning team, were found to be significantly more able to correctly identify the alcohol sponsor of the event than children in other areas of Ireland (69.9% vs. 21.5%)
Jones <i>et al.</i> (2020)	Gambling	Football	Literature review / critical analysis	Normalisation	This paper argues that football plays a key role in the promotion and normalisation of gambling and, therefore, in the prevalence of problem gambling because of the evidence that exposure to gambling translates into gambling behaviour

(continued)

Citation	Harmful products examined	Sport context	Method	Theoretical framework	Findings
Kelly <i>et al.</i> (2011)	Junk food	Australian sport	Survey of children participating in Australian sport	Mere exposure	Surveyed children aged between 10–14 years were found to have a high awareness of corporate sponsors of their own sports clubs. Food and beverage sponsors of youth teams were more readily recalled by children than any other type of sponsors
Kelly <i>et al.</i> (2012)	Junk food	Australian junior sports clubs	Survey of parents, officials, and governing sporting organisations	Mere exposure	55% of regional association officials and 55% of sports club officials were found to perceive that sports club sponsorship by junk food and alcohol companies could negatively affect children. Companies by 64% of parents
Kelly and Gerrish (2019)	Alcohol, energy drinks, junk food, gambling	Esports	Content analysis of esports sponsorships	Mere exposure	Of esports sponsorships reviewed, 60% related to junk food, 15% to gambling, 15% to alcohol and 0% to energy drinks
Kelly <i>et al.</i> (2017)	Alcohol	Various Australian club and professional sports	Survey of athletes	Mere exposure	There was found to be a relationship between alcohol sponsorship of sports teams and increased alcohol consumption among participants in the sponsored sport / team
Macniven <i>et al.</i> (2015)	Junk food, soft drinks, alcohol, gambling	Australian national and state sports organisations	Content analysis of national sports organisations (NSOs) and state sports organisations (SSOs) websites	Mere exposure	A total of 413 websites operated by 53 different sports were reviewed. Food and beverage companies were found to account for 45.5% of “unhealthy” sponsors. Alcohol companies made up 38.9% whilst gambling services / providers accounted for the remaining 14.6% of “unhealthy” sponsors
Nuss <i>et al.</i> (2019)	Junk food, alcohol, gambling	AFL	Content analysis of AFL Grand Final television broadcast	Mere exposure	The purpose of this study was to assess the frequency, duration, and nature of “unhealthy” marketing 2017 AFL Grand Final
O'Brien <i>et al.</i> (2014)	Alcohol	British university sports	Survey of British university athletes	Exposure	Receipt of alcohol sponsorship by university teams, clubs, and individual athletes was positively associated with significantly higher AUDIT-consumption (alcohol consumption) scores for sponsored athletes as compared to athletes who did not receive sponsorship from alcohol companies (either individually or through a club or team). Athletes in receipt of alcohol industry sponsorship were also found to be more likely to be hazardous drinkers than other athletes

(continued)

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Citation	Harmful products examined	Sport context	Method	Theoretical framework	Findings
<i>O'Brien et al. (2011)</i>	Alcohol	Various Australian sports	Survey of athletes	Exposure	The receipt of sponsorship by alcohol companies was found to be positively associated with increased alcohol consumption among the surveyed athletes. No link between increased alcohol consumption and sponsorship by non-alcohol brands was revealed
<i>Sartori et al. (2018)</i>	Junk food, alcohol, gambling	AFL	Content analysis of websites and uniforms	Mere exposure	28% of AFL teams were found to have at least one "unhealthy" sponsor on their playing uniforms whilst "unhealthy" sponsors were found to account for at least 10% of the sponsorship of 72% of AFL clubs
<i>Shoffner and Koo (2020)</i>	Junk food	Olympic Games	Consumer survey	Elaboration Likelihood Advertising Model (ELAM)	The results of the study suggested, though inconclusively, that consumers develop unfavourable attitudes towards sporting events when there is higher elaboration due to unhealthy product sponsors and CSR initiatives. That is, unauthentic sponsorships may ultimately be detrimental to an event, particularly as younger consumers are becoming more alert to inconsistent sponsorship agreements and unauthentic CSR initiatives
<i>Watson et al. (2016)</i>	Junk food, alcohol, gambling	Australian junior sport	Content analysis	Mere exposure	This study found that almost all (91%) food and beverage company sponsors of Australian junior sport are junk food companies
<i>Zerhouni et al. (2016)</i>	Alcohol	2011 Heineken Cup Final and 2013 Rugby Championships Semi-Final	Survey of university students	Mere exposure	Exposure to alcohol advertising during sporting events was found to positively influence perceptual identification and implicit attitudes towards the brand immediately after exposure to the advertising
<i>de Bruijn et al. (2012)</i>		Large scale study across four European countries	International survey study	Mere Exposure	Exposure to alcohol-branded sport sponsorship was found to increase young adolescents' intention to drink alcohol and also increased the odds that they had drunk alcohol in the past 30 days. ²²
<i>Macniven et al. (2015)</i>	Beverage, alcohol and gambling	Peak Australian sporting organisations	Website audits of 53 sports and survey	Exposure	Overall, 39 sports had at least one unhealthy sponsor, and 10% of all sponsors were rated as unhealthy

As discussed above, the Elaboration Likelihood Model of advertising processing suggests that stimuli are processed by either central (i.e. high degree of cognitive effort) or peripheral routes (i.e. low degree of cognitive effort). It is expected that the common peripheral cue of emotive appeal typically associated with harmful product advertising is likely to be equally inherent in online gaming content (Kim *et al.*, 2015). The combination of mere exposure, expertise and peripheral processing affiliated with online gaming suggests that heavier gamers will have more exposure to advertising and notice its typically peripheral cues and messaging. Brand awareness and attitudes are important components of brand equity and desirable marketing outcomes (Keller *et al.*, 2008). Specifically, brand awareness measures whether consumers know about a certain brand and whether they can recall or distinguish it, and brands of which consumers are aware are more likely to be included in consumers' consideration sets and preferred when making purchase decisions (Barreda *et al.*, 2015). We therefore hypothesise that heavier (i.e. expert) gamers will be more likely to notice and like advertising and sponsorship activation in esports and gaming, compared to casual gamers (i.e. novice players). Specifically, we hypothesise that:

- H1. Heavy competitive online gaming (esports) will be associated with greater advertising awareness than casual gaming.
- H2. Heavy competitive online gaming (esports) will be associated with stronger advertising preference than casual gaming.

The well-established Theory of Planned Behaviour (Ajzen, 1991) predicts that behaviour is determined by behavioural intention, which in turn is attributable to attitudes to the behaviour. In marketing, consumer response to advertising has been conceptualised in terms of a hierarchy of effects model, encompassing attention, attitude formation, preference and behaviour, and which assumes that attention responses are an antecedent to actual processing (e.g. Barry and Howard, 1990). Several different hierarchical models have been proposed in the advertising literature, there is consensus in relation to the three dimensions of the model of consumer response, including cognition, affect and conation (MacKenzie *et al.*, 1986). On the basis of these models of consumer decision making, we therefore predict that positive attitudes towards alcohol sponsors formed through mere exposure will produce stronger consumption intent and actual consumption among audiences, particularly for heavier gamers.

- H3. Heavy competitive online gaming (esports) will be associated with consumption of advertised alcohol brands more than casual gaming.

Methodology

Participants and design

The population for the survey was Australian gamers aged between 16 and 34 years. Data were collected from $n = 976$ respondents who identified as gamers, and were recruited in three different cohorts: 16–17 years ($n = 175$), 18–24 years ($n = 401$) and 25–34 years ($n = 400$). All survey respondents were screened with the following questions to determine their gaming habits: “During the past four weeks, how often did you play/watch competitive online games, such as Fortnite, League of Legends, Rocket League, Overwatch, FIFA19, or World of Warcraft?” Participants were screened out as “non-gamers” if they responded “not at all” to both playing or watching. Subsequent questions in the survey determined frequency and duration of gaming online and therefore whether respondents were heavy or casual gamers. Gender distribution was a targeted quota to align with known disproportionate gaming participation among males, with 58.9% male respondents. Non-random quota sampling is justified in this context, given the research focus upon the gaming sub-group of

the population (Melnick *et al.*, 1991; Sharma, 2017). The survey was conducted using online panel companies Dynata and Student Edge Youth Panel. Surveys were distributed via email invitations or an online survey portal, where participants were invited to take part in the study for payment. The survey was conducted using Qualtrics software and took approximately 15 min to complete. Data were collected over 2 weeks in August 2019.

Measures

The survey involved several areas of interest, including demographic questions such as age, gender and postcode; esports consumption patterns and gaming addiction; professional aspirations; noticing and awareness of advertising and sponsorship in games; preference and appeal of advertising and sponsorship in games; consumption of advertised and sponsored brands in games; and alcohol consumption habits. The survey comprised 53 questions, and several items were adopted and adapted from existing scale measures. The survey was developed and reviewed using a multi-stage process by several health and marketing experts to ensure content validity. Variables were comprised of a combination of both single- and multi-item scales, dependent on the construct of interest. Multi-item scales consisted of the Gaming Addiction Scale and a scale measuring overall brand appeal. Gaming addiction was measured using a 6-item Gaming Addiction Scale (Lemmens *et al.*, 2009; $\alpha = 0.85$) and brand appeal was measured using a 3-item scale with excellent reliability, $\alpha = 0.91$. The remaining dependent variables were single-item constructs. Items were measured using a combination of categorical responses, qualitative responses and various 5-, 6- and 7-point Likert scales (e.g. ranging from Never to Very often or Strongly agree to Strongly disagree).

Data analysis

Analysis was undertaken on participants who identified as gamers, using a combination of descriptive and frequency statistics, linear regression, multiple linear regression and chi-square test of independence. Significant chi-square analyses were followed up with standardised residual post-hoc analyses (Beasley and Schumacker, 1995), using Bonferroni corrections. All reported significant post-hoc chi-square analyses were significant to the $p < 0.05$ level. There was a focus on comparisons between cohorts, heavy/causal gamers and addicted/non-addicted gamers, as outlined above. Results from the survey were analysed in terms of their ability to answer the key research aims and test the three hypotheses. See Appendix 1 for all means and standard deviations of key dependent variables. The survey adopted sub-scales from previous research, which needed to retain their respective anchors for psychometric property reliability. *Before running the tests, the data were cleaned and assumptions of all the tests were checked. The presence of outliers was found in three questions. These outliers were removed, and analyses were run with the removed outliers. No differences were found in the interpretation of results, data retaining the outliers are reported as no other assumptions were violated, and the data retaining the differing response anchors are reported (Gelman and Hill, 2006).* Descriptive analyses were undertaken in relation to demographic profiling and gaming behaviours among the sample.

Results

Demographic details

Around 60% of the population were classified as gamers, indicating they played or watched an online competitive game at least once in the past 4 weeks. Males ($\chi^2(2, N = 1546) = 139.03, p < 0.001$), and 18 to 34-year-olds ($\chi^2(2, N = 1550) = 28.79, p < 0.001$) were more likely to be gamers. Of gamers, 54.4% were casual gamers and 45.6% were heavy gamers, with heavy gamers more likely to be males, ($\chi^2(2, N = 975) = 84.10, p < 0.001$).

Gaming frequency

In a typical week, the majority of gamers played and watched esports between 1 and 2 days per week. Gamers aged 16–17 years were more likely to play ($\chi^2(12, N = 956) = 22.54, p < 0.032$) and watch ($\chi^2(12, N = 954) = 32.22, p < 0.001$) games less, compared to older cohorts. Of those who played online games at least once in the past 4 weeks, most played between 1–2 h per day (27.9%), followed by 2–3 h (23.2%), less than 1 h (13.2%), and finally 3–4 h (10.5%). Of those who watched online games at least once in the past 4 weeks, most watched between 1–2 h per day (19.1%), followed by 2–3 h (11.7%), less than 1 h (7.6%), and 3–4 h (6.8%).

Gaming addiction

Our analysis examined esports consumption habits, and contrasted between heavy/casual gamers, addicted/non-addicted gamers and cohorts, on a range of advertising and sponsorship questions. Those who played 3–4 days per week or more were categorised as heavy gamers, and those who played 1–2 days per week or less were categorised as casual gamers, using the median number of days per week spent gaming (1–2 days) as a cut-off. Addicted gamers were gamers who endorsed at least “sometimes” to 4 out of the 6 criteria measuring gaming addiction. This was based on the polythetic criteria used in [Lemmens *et al.* \(2009\)](#), where endorsement of at least half the criteria is required for a diagnosis, consistent with the DSM-V method for classification of gambling addiction ([American Psychiatric Association, 2013](#)). This approach revealed 53% of gamers were addicted. Addicted gamers were more likely to be aged 25 to 34, and 16 to 17-year-olds were less likely to be addicted to gaming, ($\chi^2(2, N = 976) = 32.11, p < 0.001$).

In contrast, taking a monothetic approach, where all criteria for addiction must be met, our sample revealed 21.7% of gamers were addicted. As there is no consensus in relation to the appropriate cut-off for this measure, a number of studies use both monothetic and polythetic criteria to determine addiction and allow for comparison between the different formats ([Hussain *et al.*, 2012](#); [Macey and Hamari, 2018](#)). As the [Lemmens *et al.* \(2009\)](#) scale has been previously adopted we included it in our study, but limitations in terms of its potential overestimation should be emphasised. However, even applying the more conservative monothetic approach, reveals a rate of 21.7% of the sample identified as addicted to gaming. While high, this rate aligns with previous studies, and is impacted by the higher proportion of males in the sample ([Kuss, 2013](#); [Griffiths *et al.*, 2012](#)).

Professionals and aspiring professionals

A total of 15.7% of gamers were professional online gamers (i.e. play for prize money and/or endorsements) and 48.9% of gamers said they would like to compete in professional competitive online gaming competitions in the future. Heavy ($\chi^2(1, N = 932) = 26.31, p < 0.001$), addicted ($\chi^2(1, N = 932) = 52.41, p < 0.001$) and 18 to 34-year-old ($\chi^2(2, N = 932) = 34.43, p < 0.001$) gamers were more likely to be professionals. Heavy ($\chi^2(1, N = 763) = 56.64, p < 0.001$), addicted ($\chi^2(1, N = 763) = 66.31, p < 0.001$) and 18 to 34-year-old ($\chi^2(2, N = 763) = 12.64, p = 0.002$) gamers were also more likely to be aspiring professionals.

Devices and ad blockers

Overall, gamers (combined heavy and casual) most commonly use consoles (34%) to play esports, closely followed by computers (32%). Heavy gamers were more likely to play on a computer, whereas casual gamers were more likely to use a mobile phone ($\chi^2(3, N = 875) = 15.02, p = 0.002$). Furthermore, 16 to 17-year-olds preferred playing on a computer, 18 to 24-year-olds preferred to use consoles and 25 to 34-year-olds were more likely to use an iPad,

compared to other cohorts ($\chi^2(6, N = 875) = 22.36, p = 0.001$). Ad blocking software was extensively used, as 45% of gamers endorsed using ad blocking software on their device while playing or watching esports. Heavy ($\chi^2(1, N = 938) = 4.09, p = 0.043$) and addicted gamers ($\chi^2(1, N = 938) = 8.02, p = 0.005$) were both more likely to use ad blocking software.

Hypotheses testing

Awareness (hypothesis 1). Overall, gamers tended to feel ambivalent (30.3%) towards advertising in their favorite esports events and tournaments, with only a small percentage endorsing that they like to see ads (4.8%). Heavy and addicted gamers were more likely to endorse that they like to see advertising in their favourite esports events, whereas casual gamers were more likely to endorse that they do not like to see advertising, ($\chi^2(4, N = 976) = 17.91, p = 0.001$), supporting hypothesis one. Product placement was the most recalled type of advertising placement, closely followed by branded gaming equipment, which was also perceived as the most influential (see Figure 1). When broken down into gaming frequency, heavy gamers were more likely to have recalled seeing branded gaming equipment, whereas casual gamers were more likely to have recalled seeing product placement or venue branding esports advertising, ($\chi^2(8, N = 773) = 27.84, p = 0.001$).

Heavier gamers endorsed that they were more likely to have seen influencers in esports talk about alcohol brands (see Table 2 for all multiple regression findings with gaming frequency and age as predictors). Overall, heavier gamers also endorsed that they were more likely to notice advertising or sponsored messages while playing or watching esports. Addicted gamers were more likely to see alcohol brands advertising through esports, notice advertising or sponsored messages through esports and see alcohol brand endorsements by professional players (see Appendix 2 for all multiple regression findings with addiction and age as predictors). Additionally, compared to older cohorts, 16 to 17-year-olds were less likely to notice alcohol branded advertising through esports, less likely to notice advertising when playing esports and less likely to have seen influencers in esports endorsing alcohol brands.

Preference and appeal (hypothesis 2). Heavier and more addicted gamers were more likely to view brands that sponsor esports as positive and be influenced by them in terms of their preference for them, consistent with Hypothesis two. Additionally, addicted gamers were more likely to think alcohol advertising in esports is a good fit, compared to non-addicted

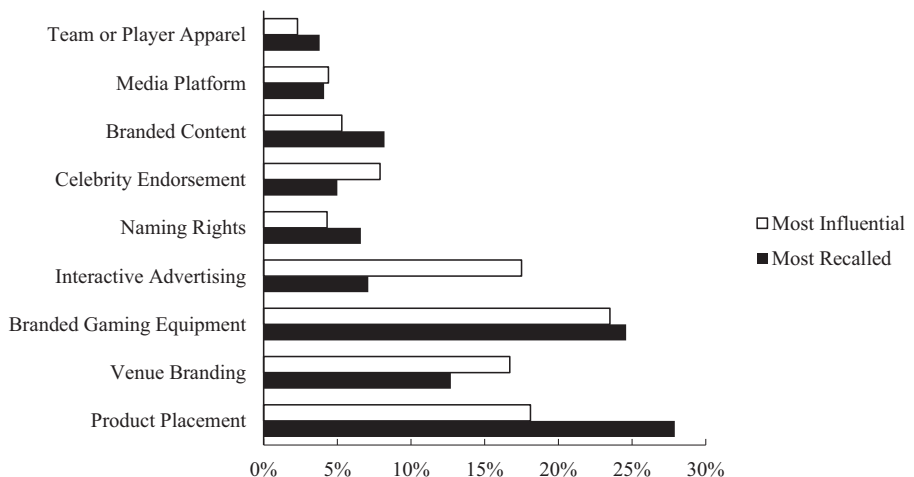


Figure 1.
Most recalled and most influential types of advertising placements

Outcomes	Standardised beta β	Overall model
<i>How often do you see alcohol brands advertising through esports/gaming?</i>		
16–17 v. 24–34 years***	–0.227	$F(3, 971) = 16.55, p < 0.001, R^2 = 4.9\%$
18–24 v. 25–34 years**	–0.107	
16–17 v. 18–24 years***	–0.144	
Heavy v. Casual *	0.055	
<i>How often do you notice advertising while playing your favourite online game?</i>		
16–17 v. 24–34 years***	–0.156	$F(3, 972) = 16.05, p < 0.001, R^2 = 4.7\%$
18–24 v. 25–34 years	–0.036	
16–17 v. 18–24 years***	–0.129	
Heavy v. Casual ***	0.151	
<i>How often do you notice advertising or sponsored messages when watching players streaming?</i>		
16–17 v. 24–34 years	0.020	$F(3, 972) = 7.36, p < 0.001, R^2 = 2.2\%$
18–24 v. 25–34 years*	0.088	
16–17 v. 18–24 years	–0.049	
Heavy v. Casual***	0.124	
<i>Have you seen big names in esports talking about or endorsing alcohol brands?</i>		
16–17 v. 24–34 years***	–0.210	$F(3, 971) = 16.42, p < 0.001, R^2 = 4.8\%$
18–24 v. 25–34 years	–0.052	
16–17 v. 18–24 years***	–0.169	
Heavy v. Casual**	0.088	
<i>View of brands that sponsor esports as negative/positive</i>		
16–17 v. 24–34 years**	–0.090	$F(3, 969) = 12.73, p < 0.001, R^2 = 3.8\%$
18–24 v. 25–34 years*	–0.088	
16–17 v. 18–24 years	–0.021	
Heavy v. Casual***	0.164	
<i>To what extent does advertising within games influence your preference for the brands advertised?</i>		
16–17 v. 24–34 years***	–0.152	$F(3, 968) = 18.62, p < 0.001, R^2 = 5.5\%$
18–24 v. 25–34 years	–0.039	
16–17 v. 18–24 years***	–0.122	
Heavy v. Casual***	0.177	
<i>In my view alcohol advertising in esports is a good fit</i>		
16–17 v. 24–34 years***	0.289	$F(3, 972) = 25.41, p < 0.001, R^2 = 7.3\%$
18–24 v. 25–34 years*	0.077	
16–17 v. 18–24 years***	0.229	
Heavy v. Casual	–0.009	
<i>If an alcohol brand is a sponsor of an online game I play/watch, I am more likely to purchase the brands products</i>		
16–17 v. 24–34 years***	0.273	$F(3, 971) = 22.36, p < 0.001, R^2 = 6.5\%$
18–24 v. 25–34 years*	0.081	
16–17 v. 18–24 years***	0.209	
Heavy v. Casual	–0.019	
<i>To what extent does advertising within games influence the likelihood you will buy the products advertised?</i>		
16–17 v. 24–34 years***	–0.152	$F(3, 972) = 15.84, p < 0.001, R^2 = 4.7\%$
18–24 v. 25–34 years	–0.037	
16–17 v. 18–24 years***	–0.123	
Heavy v. Casual***	0.153	

Table 2.
Multiple regressions
with gaming frequency
and age as predictors
(continued)

Outcomes	Standardised beta β	Overall model
<i>When playing esports, how often do you consume alcohol?</i>		
16–17 v. 24–34 years***	–0.362	$F(3, 943) = 44.06, p < 0.001, R^2 = 12.3\%$
18–24 v. 25–34 years**	–0.100	
16–17 v. 18–24 years***	–0.285	
Heavy v. Casual**	0.081	
<i>When watching esports, how often do you consume alcohol?</i>		
16–17 v. 24–34 years***	–0.370	$F(3, 938) = 45.38, p < 0.001, R^2 = 12.7\%$
18–24 v. 25–34 years***	–0.118	
16–17 v. 18–24 years***	–0.279	
Heavy v. Casual**	0.080	
I drink more alcohol when I'm gaming compared to when I'm not gaming		
16–17 v. 24–34 years***	0.232	$F(3, 969) = 16.41, p < 0.001, R^2 = 4.8\%$
18–24 v. 25–34 years**	0.091	
16–17 v. 18–24 years***	0.161	
Heavy v. Casual	–0.041	
Note(s): * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$		

Table 2.

gamers. Compared to older cohorts, 16 to 17-year-old gamers were less likely to be influenced by advertising in games in terms of their preference for brands advertised, as well as being less likely to think alcohol advertising in esports is a good fit. Those aged 18 to 24 were also less likely to think alcohol advertising in esports is a good fit, and view brands as more negative, compared to those aged 25 to 34.

Consumption (hypothesis 3). Heavy and addicted gamers were more likely to purchase products advertised because of advertising they have seen in games, as well as consume alcohol more often when playing and watching esports, as hypothesised. Addicted gamers were also more likely to purchase alcohol brands that sponsor an online game they play or watch and drink more alcohol when gaming, compared to when they are not gaming. Cohort analysis revealed that 25 to 34-year-olds were more likely to purchase an alcohol brands' products if they sponsor an online game they play or watch, consume alcohol more often when playing and watching esports, and drink more alcohol when gaming compared to when they are not gaming, compared to younger cohorts. Compared to 16 to 17-year-olds, 25 to 34-year-olds were also more likely to purchase products advertised because of advertising they have seen in games.

Differing patterns of alcohol consumption were also found between both heavy and casual and addicted and non-addicted gamers. Heavier ($\chi^2(4, N = 938) = 26.69, p < 0.001$) and more addicted gamers ($\chi^2(4, N = 938) = 53.96, p < 0.001$) were more likely to have had a drink in the past 4 weeks, compared to their casual and non-addicted counterparts. Additionally, heavier ($\chi^2(4, N = 937) = 11.05, p < 0.026$) and more addicted gamers ($\chi^2(4, N = 937) = 62.48, p < 0.001$) more often had five or more standard drinks in one occasion, again in comparison to their casual and non-addicted counterparts. Overall, regression findings suggest that the more likely gamers endorse they had seen alcohol brands advertising through esports or gaming, or had seen influencers in esports talk about or endorse alcohol brands, the more likely they were to report consuming alcohol more often when playing or watching esports, and drink more alcohol when gaming compared to when not gaming (see Table 3).

Discussion

The aims of this research were to examine the impacts of alcohol advertising and sponsorship through esports upon young participants. Our findings support research on the positive

Outcomes	Standardised beta β	Overall model
<i>Predictor - How often do you see alcohol brands advertising through esports?</i>		
When playing esports, how often do you consume alcohol?	0.459	$F(1, 944) = 252.06, p < 0.001,$ $R^2 = 21.1\%$
When watching esports, how often do you consume alcohol?	0.436	$F(1, 939) = 220.81, p < 0.001,$ $R^2 = 19\%$
I drink more alcohol when I'm gaming compared to when I'm not gaming	-0.329	$F(1, 970) = 117.89, p < 0.001,$ $R^2 = 10.9\%$
<i>Predictor - Have you seen big names in esports talking about or endorsing alcohol brands?</i>		
When playing esports, how often do you consume alcohol?	0.426	$F(1, 944) = 208.92, p < 0.001,$ $R^2 = 18.2\%$
When watching esports, how often do you consume alcohol?	0.420	$F(1, 939) = 200.65, p < 0.001,$ $R^2 = 17.6\%$
I drink more alcohol when I'm gaming compared to when I'm not gaming	-0.322	$F(1, 970) = 112.5, p < 0.001,$ $R^2 = 10.4\%$

Table 3.
Linear regressions with seeing alcohol brands advertising through esports as predictors, and consumption of alcohol as outcomes

cognitive, affective and behavioural impacts of advertising exposure, known as mere exposure theory, and extend its application to the hyper-competitive, professionalised, and potentially addictive landscape of online competitive gaming. Specifically, our findings support our hypotheses premised upon mere exposure, the Elaboration Likelihood Model of persuasive communications processing, and the link to expertise of heavy gamers compared to casual gamers. All three of our hypotheses were supported, indicating that heavier gamers are more receptive to alcohol-branded advertising than lighter gamers, in terms of awareness (H1), preference (H2) and consumption (H3).

Contributions to theory and practice

Our findings are consistent with prior research demonstrating an association between expertise and enhanced cognitive and affective response to stimuli (Green and Bavelier, 2003; Greenfield *et al.*, 1994; West *et al.*, 2008). The finding that all gamers notice alcohol-linked advertising and are receptive to it, but that heavy gamers have a more favourable response than casual gamers indicates familiarity with the game structure and content inherent with heavy gaming may prompt heuristic processing, but perhaps a more elaborative (i.e. central route) processing for casual gamers who are less familiar with the game structure. However, further research aimed at directly testing the respective information processing routes taken by gaming audiences is needed. For example, experimental research design could test the causality of different activations in game upon the extent of elaborative processing among different gaming audiences. Our findings are also consistent with several European studies involving school-aged samples which have demonstrated relationships between alcohol and tobacco use and participation in video games (Coëffec *et al.*, 2015; Cranwell *et al.*, 2016; Van Rooij *et al.*, 2014) and extends these findings to the esports context and exposure to actual consumption during gaming.

While prior research has examined alcohol-linked advertising impacts in video gaming through theoretical lenses of mere exposure, expertise and persuasion information processing, no research to date has applied these frameworks to the newly evolved and commercialised context of esports. Hence, our research extends sports sponsorship and advertising processing theoretical frameworks to digital, competitive gaming contexts which are rapidly evolving and commercialising to target increasingly larger, next-generation audiences. The elevated relevance of simulated sports and esports during the COVID-19

pandemic strengthens the relevance and timeliness of our research, with many sports and their sponsors now diversifying into this digital landscape to engage fans virtually.

Practical contribution of our research extends to gaming publishers, policy makers esports tournament owners and sponsors. Currently, esports are largely self-regulated and controlled by publishers who are incentivised to boost commercialisation of esports and therefore accept lucrative sponsorships. Despite some publishers increasing governance associated with their gaming content, such as banning some harmful product sponsorships at tournaments and restricting violent content through in game switches, regulation is neither consistently applied, nor very often enforced. For example, a content analysis recently undertaken to examine harmful product sponsorship in esports (Kelly and Gerrish, 2019; Chambers, 2020) demonstrated that several major esports tournaments are sponsored by alcohol, junk food, energy drink and gambling brands. The complexity of the transnational landscape of esports, combined with the plethora of genres and games encompassed by the esports umbrella make the prospect of universal governance complex. The streamed nature of online gaming includes many activation tactics such as branded content, commercialised channels and endorsed influencers which are not captured by current advertising regulations or advertising blocking software. The receptivity of gamers to advertising by alcohol brands suggests that regulators should be revising current advertising policy to capture the contemporary digital landscape of gaming and gaming media to ensure that vulnerable, largely underage audiences are better protected from exposure. From a sponsors' perspective, advertising through esports and gaming resonates, making it a very attractive platform through which to engage the next generation. The opportunity has been leveraged by several recent announcements of significant sponsorships of esports tournaments, teams, influencers and branded channels.

Reform is needed to address the lack of coverage of new digital landscapes and the plethora of sophisticated marketing communications strategies adopted by harmful products within them. For example, relevant advertising regulations could be amended to include a broader definition of advertising, encompassing sponsorship and endorsements. The blurring between entertainment and advertising through branded content, vlogging, and experiential activation appears to be a key strategy that will grow with increasing use of ad blocking revealed in our research. Regulation requiring identification of paid content in relation to influencer endorsement is also recommended to ensure targeted gamers are aware of the endorsed nature of the content. Chao (2017) argues for a better framework for esports governance, including the adoption of a regulatory body to facilitate the growth of the domestic esports industry. Governance of esports is still in its infancy, with regulation dependent upon how the publisher decides to exploit, or allow others to exploit, ownership in the game. With the risk associated with young participants in esports, effective and globally consistent governance is needed, and our research provides much needed, initial evidence supporting this need.

Limitations and future research

Our research is limited due to the cross-sectional nature of the survey design used by failing to capture the long term influence on preferences and consumption. Future longitudinal or causal studies are needed to examine these impacts, and the assessment of participants transitioning from casual to heavy gamers. While we have found an association between gaming and advertising awareness, preference for and consumption of alcohol while gaming, further research is needed to provide evidence of causality. However, our study provides some useful initial evidence of this relationship and is consistent with the well-established theory of planned behaviour which relates formation of preferences with behaviours (Ajzen, 1991). Our study also involved an Australian sample, yet given the global nature of esports,

research is necessary to examine our findings cross-culturally. Understanding of mechanisms explaining vulnerability to gaming addiction being stronger for older gamers than for 16–17 year old gamers is also a worthwhile direction for future research. One explanation may be that young adults have more freedom, and many may be students with an ability to participate in gaming without restriction in relation to regular sleep, parental monitoring, work requirements or obligatory school attendance. They may also have established a long history and habit of gaming over a longer period of time, culminating in heavier, and perhaps problematic gaming behaviours. Age has been established as a predictor of addictive gaming, especially among male gamers (Burleigh *et al.*, 2019), and further research is needed to examine the pathway of gamers, from initiation to heavy and addictive gaming. Self-reporting of gaming behaviours may lack reliability and validity due to social desirability bias, but recent studies demonstrate that self-diagnosis of addictive behaviours is relatively accurate (Burleigh *et al.*, 2019). The use of an online survey and panelling company might also indicate issues with non-probability sampling. This bias, however, has been limited through quota recruitment reflecting the sub-population of gamers being disproportionately represented by males. Furthermore, a non-gamer control group was not utilised to assess whether gamers are more vulnerable to alcohol-linked advertising than non-gaming populations. However, given the survey examined gaming advertising, our study was confined to gamers and motivation to gain deeper insights into particular attributes among gamers that may lead to vulnerability to harmful product advertising in gaming. Future research should therefore investigate this limitation through the use of a non-gamer control.

Results evidencing that over half of our sample were addicted gamers according to the Gaming Addiction Scale (Lemmens *et al.*, 2009) are concerning, given the association found between heavier gaming and susceptibility to alcohol-branded advertising through gaming. A key limitation in this context is that gamers are extremely heterogeneous, representing a range of demographic, social and behavioural groups, and spanning cultural landscapes. Understanding the diversity of gamers and their behaviours, and subsequently targeting interventions or marketing towards them, is key for future research on this issue. The polythetic measure tends to overestimate the prevalence of gaming addiction (Charlton, 2002; Charlton and Danforth, 2007), whereby it might include players that are “problematic” or “excessive” rather than purely “addicted” gamers (Hussain *et al.*, 2012). However, it is in line with the standard diagnostic guidelines for other mental health issues that are similar (e.g. pathological gambling and substance dependence), as demonstrated by criteria used by the DSM-V (American Psychiatric Association, 2013). We have therefore reported the monothetic measure of gaming addiction in addition to the polythetic measure, which nevertheless revealed a high proportion of addicted gamers in the sample. A range of 22–53% highlights the need to further examine heavy gamer activity and vulnerability to harmful product advertising through gaming, with a view to developing targeted interventions.

The finding that heavier gamers were more receptive to advertising in terms of awareness and preference could be explained by their gratitude towards endorsers of their community, as is the case with fans of sponsored sports (Wann *et al.*, 2016). That is, the relationship may not be attributable necessarily to mere exposure and expertise, but perhaps to fandom and loyalty toward any product supporting esports. Future research should therefore examine this relationship in more detail, including identifying mediating effects relating to players’ attributions relating to sponsorship, and whether heavy gamers are more likely to like alcohol brands and consumption, unrelated to advertising exposure. Use of a control group of non-gamers would be a useful next step in this research, and is a limitation of this study.

While it is well established that younger consumers are generally more susceptible to advertising (e.g. Harris *et al.*, 2009), the focus upon alcohol advertising in this study may be less relevant to minors, as this Australian cohort are unable to legally purchase alcohol. It is

also consistent with recent health literature finding that young people are consuming less alcohol (Pape *et al.*, 2018) and therefore may be less interested in alcohol advertising. It would be interesting to test this effect with different harmful product category advertising in gaming in future studies, including more salient categories such as energy drinks or junk food. The high proportion of professional gamers identified in the study could be attributable to the broader definition of professional gamers adopted in the survey, which included earning any prize money or endorsement earnings. This therefore captures players who might have earned a small prize or earnings insufficient to equate to full time employment through gaming. The screening question requiring some gaming for the survey may have attracted more hard core gamers, translating to this high proportion and further studies are warranted to monitor this trend, and the high proportion of aspirational professional gamers identified.

Based on our findings, various avenues for future research emerge. For instance, how and why gaming content and structure, as well as gaming participation motivations and particular gaming genres, might influence the associations found is warranted, as these points cannot be extrapolated from the current survey study. How and why specific activation strategies such as product placement, branded content or influencer endorsement might impact gamers is also of interest, to disentangle these key elements of gaming advertising strategy. Gaming history and lifestyle factors such as other activities, health and mental status, also known to influence gaming addiction and participation, were not assessed by the study. Further replication may consider examining some of these variables as possible moderators of gaming behaviour and the relationship with advertising processing and response. In light of recent research suggesting compounded effects upon addictive behaviours relating to screen time more generally, including video gaming, Internet and social media, (Burleigh *et al.*, 2019), extending this research to examine these impacts is warranted. Finally, future research should investigate the potential for esports to be a powerful platform for health messaging and sociability on the basis of the impacts revealed for harmful product advertising.

Conclusion

The unique features of esports streaming include longer duration of exposure and greater depth of engagement compared to many traditional sports and content. Given the range of marketing communications strategies adopted by partnering brands, the uniquely experiential nature of esports may represent a new domain to build theory on dynamic consumer event-based interactions in converging virtual and real worlds. Our research highlights that there are key differences in receptivity to advertising and sponsorship in online gaming between heavy and casual gamers, addicted and non-addicted gamers, and 16 to 17-year-olds and 18+ cohorts, consistent with theories of mere exposure and expertise. Gaming influencers have a powerful platform for advertising and are particularly important due to the high use of ad blocking software. The largely unregulated landscape of esports, combined with its continued commercialisation and audience growth, suggest that continued monitoring of advertising practices and their impacts is warranted. This research provides much-needed evidence for an updating of current advertising restrictions relating to harmful products to ensure that digital platforms such as esports are captured.

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Table A1.
Means and standard deviations for key dependent variables

Dependent variable	Response scale		Overall				Cohort				Frequency				Addiction			
	18-24 years		25-34 years		Heavy Gamer		Casual Gamer		Addicted Gamer		Non-Addicted Gamer		Addicted Gamer		Non-Addicted Gamer			
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD		
How often do you see alcohol brands advertising through esports/gaming?	Never (1) to Very frequently (5)	2.42	1.36	1.87	1.15	2.40	1.33	2.69	1.40	2.53	1.40	2.34	1.31	2.90	1.38	1.90	1.12	
How often do you notice advertising while playing your favourite online game?	Never (1) to Very often (5)	2.49	1.04	2.15	0.97	2.53	1.03	2.61	1.04	2.68	1.11	2.34	0.95	2.78	0.99	2.17	1.00	
How often do you notice advertising/sponsored messages while watching players' streaming?	Never (1) to Very often (5)	2.77	1.11	2.71	1.08	2.88	1.12	2.68	1.10	2.92	1.14	2.64	1.07	3.00	1.08	2.51	1.09	
Have you seen big names in esports talking about/endorsing alcohol brands?	Never (1) to Very Often (5)	2.16	1.07	1.71	0.88	2.20	1.06	2.32	1.10	2.28	1.16	2.06	0.97	2.56	1.09	1.71	0.85	
Alcohol advertising in esports is a good fit	Strongly disagree (1) to Strongly agree (5)	3.34	1.11	3.95	0.95	3.29	1.04	3.12	1.15	3.30	1.20	3.37	1.03	3.09	1.11	3.61	1.05	
Brands that sponsor esports are...	Negative (1) to Positive (7)	4.73	1.36	4.54	1.27	4.65	1.39	4.90	1.36	4.98	1.39	4.52	1.31	4.96	1.32	4.48	1.37	
Does advertising within games influence your preference for the brands advertised?	Not at all (1) to A lot (4)	2.04	0.84	1.77	0.79	2.06	0.82	2.13	0.86	2.21	0.87	1.89	0.79	2.31	0.81	1.73	0.77	
If an alcohol brand is a sponsor of an online game that I play/watch, I am more likely to purchase the brand's products	Strongly disagree (1) to Strongly agree (5)	3.11	1.16	3.71	1.10	3.08	1.14	2.88	1.12	3.07	1.24	3.15	1.09	2.86	1.13	3.40	1.14	
Does advertising within games increase the likelihood that you will buy the products advertised?	Not at all (1) to A lot (4)	1.98	0.83	1.72	0.73	2.01	0.81	2.07	0.86	2.13	0.86	1.86	0.78	2.26	0.83	1.69	0.72	
When playing esports, how often do you consume alcohol?	Never (1) to Always (5)	2.00	1.11	1.21	0.73	2.05	1.07	2.28	1.13	2.12	1.21	1.89	1.01	2.34	1.17	1.60	0.90	
When watching esports, how often do you consume alcohol?	Never (1) to Always (5)	2.06	1.16	1.23	0.73	2.10	1.13	2.38	1.18	2.19	1.24	1.95	1.08	2.43	1.21	1.64	0.94	
I drink more alcohol when gaming compared to when I'm not gaming	Strongly disagree (1) to Strongly agree (5)	3.63	1.26	4.17	1.20	3.63	1.26	3.39	1.22	3.55	1.29	3.69	1.23	3.30	1.22	4.00	1.21	

Appendix 2

Outcomes	Standardised beta β	Overall model
<i>How often do you see alcohol brands advertising through esports/gaming?</i>		
16–17 v. 24–34 years***	–0.166	$F(3, 971) = 61.32, p < 0.001, R^2 = 15.9\%$
18–24 v. 25–34 years**	–0.100	
16–17 v. 18–24 years**	–0.088	
Addicted v. Non-Addicted***	0.343	
<i>How often do you notice advertising while playing your favourite online game?</i>		
16–17 v. 24–34 years***	–0.116	$F(3, 972) = 34.61, p < 0.001, R^2 = 9.6\%$
18–24 v. 25–34 years	–0.032	
16–17 v. 18–24 years**	–0.091	
Addicted v. Non-Addicted***	0.273	
<i>How often do you notice advertising/sponsored messages when watching players streaming?</i>		
16–17 v. 24–34 years	0.054	$F(3, 972) = 19.68, p < 0.001, R^2 = 5.7\%$
18–24 v. 25–34 years**	0.091	
16–17 v. 18–24 years	–0.017	
Addicted v. Non-Addicted***	0.228	
<i>Have you seen big names in esports talking about/endorsing alcohol brands?</i>		
16–17 v. 24–34 years***	–0.146	$F(3, 971) = 67.40, p < 0.001, R^2 = 17.2\%$
18–24 v. 25–34 years	–0.046	
16–17 v. 18–24 years***	–0.111	
Addicted v. Non-Addicted***	0.369	
<i>View of brands that sponsor esports as negative/positive</i>		
16–17 v. 24–34 years*	–0.070	$F(3, 969) = 12.95, p < 0.001, R^2 = 3.9\%$
18–24 v. 25–34 years*	–0.086	
16–17 v. 18–24 years	–0.003	
Addicted v. Non-Addicted***	0.168	
<i>To what extent does advertising within games influence your preference for the brands advertised?</i>		
16–17 v. 24–34 years**	–0.102	$F(4, 971) = 47.56, p < 0.001, R^2 = 12.8\%$
18–24 v. 25–34 years	–0.035	
16–17 v. 18–24 years*	–0.075	
Addicted v. Non-Addicted***	0.330	
<i>Alcohol advertising in esports is a good fit</i>		
16–17 v. 24–34 years***	0.254	$F(3, 972) = 39.00, p < 0.001, R^2 = 10.7\%$
18–24 v. 25–34 years*	0.073	
16–17 v. 18–24 years***	0.197	
Addicted v. Non-Addicted***	–0.190	
<i>If an alcohol brand is a sponsor of an online game I play/watch, I am more likely to purchase the brands products</i>		
16–17 v. 24–34 years***	0.238	$F(3, 971) = 35.89, p < 0.001, R^2 = 10.0\%$
18–24 v. 25–34 years*	0.078	
16–17 v. 18–24 years***	0.177	
Addicted v. Non-Addicted***	–0.192	

To what extent does advertising within games influence the likelihood you will buy the products advertised?

Table B1.
Multiple regressions
with addiction and age
as predictors
(continued)

Outcomes	Standardised beta β	Overall model
16–17 v. 24–34 years**	–0.100	$F(3, 972) = 48.52, p < 0.001, R^2 = 13\%$
18–24 v. 25–34 years	–0.032	
16–17 v. 18–24 years*	–0.076	
Addicted v. Non-Addicted***	0.333	
When playing esports, how often do you consume alcohol?		$F(3, 943) = 75.92, p < 0.001, R^2 = 19.5\%$
16–17 v. 24–34 years***	–0.317	
18–24 v. 25–34 years**	–0.097	
16–17 v. 18–24 years***	–0.242	
Addicted v. Non-Addicted***	0.284	
<i>When watching esports, how often do you consume alcohol?</i>		$F(3, 938) = 78.91, p < 0.001, R^2 = 20.2\%$
16–17 v. 24–34 years***	–0.323	
18–24 v. 25–34 years***	–0.114	
16–17 v. 18–24 years***	–0.235	
Addicted v. Non-Addicted***	0.289	
<i>I drink more alcohol when I'm gaming compared to when I'm not gaming</i>		$F(4, 969) = 38.54, p < 0.001, R^2 = 10.7\%$
16–17 v. 24–34 years***	0.189	
18–24 v. 25–34 years**	0.087	
16–17 v. 18–24 years***	0.121	
Addicted v. Non-Addicted***	–0.249	

Table B1.

Note(s): * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

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