

Citation: Hing, N., Russell, A.M.T., Lamont, M., & Vitartas, P. (accepted 20-02-17). Bet anywhere, anytime: An analysis of Internet sports bettors' responses to gambling promotions during sports broadcasts by problem gambling severity. *Journal of Gambling Studies*. 10.1007/s10899-017-9671-9

Nerilee Hing

School of Human, Health and Social Sciences, Central Queensland University,
Australia

Alex Myles Thomas Russell

Centre for Gambling Education and Research, Southern Cross University, Australia

Matthew Lamont

Centre for Gambling Education and Research, Southern Cross University, Australia

Peter Vitartas

Faculty of Business, Economics and Law, Latrobe University, Australia

Abstract

Promotions for online sports betting during televised sports broadcasts are regularly viewed by millions of Australians, raising concerns about their impacts on vulnerable groups including problem gamblers. This study examined whether responses to these promotions varied with problem gambling severity amongst 455 Australian Internet sports bettors participating in an online survey. Results indicated that young male Internet sports bettors are especially vulnerable to gambling problems, particularly if they hold positive attitudes to gambling sponsors who embed promotions into sports broadcasts and to the promotional techniques they use. As problem gambling severity increased, so too did recognition that these promotions have impacted negatively on their sports betting behaviour. Because a plethora of sports betting brands and promotions are now heavily integrated into sports coverage, social marketing efforts are needed to offset their persuasive appeal and counter the positive attitudes towards them that appear linked to excessive gambling amongst Internet sports bettors.

Keywords

Sports betting, gambling, promotions, advertising, Internet, online, problem gambling.

Corresponding author: Professor Nerilee Hing, School of Human, Health and Social Sciences, Central Queensland University, University Drive, Bundaberg Queensland Australia 4670. Email: n.hing@cqu.edu.au

Bet anywhere, anytime: An analysis of Internet sports bettors' responses to gambling promotions during sports broadcasts by problem gambling severity

Introduction

In many countries, media audiences are increasingly being exposed to a plethora of marketing messages promoting online gambling. Predominant amongst these are advertisements and promotions for online sports betting, emphasising ease of access anywhere and at anytime using mobile and other Internet-enabled devices. These messages typically position online sports betting as an activity engaged in by tech-savvy young men living a glamorous high-stakes lifestyle, with the bettor's power, success, male bonding, and sexual attractiveness portrayed as enhanced by using the advertiser's product (Milner et al., 2013; Sproston et al., 2015).

The proliferation of these media messages is concerning, given that problem gambling is more common amongst Internet compared to non-Internet gamblers, and that young adult males are particularly at-risk for developing online gambling problems especially in relation to sports betting (Gainsbury et al., 2014; Hing et al., 2014c; Wardle et al., 2011; Wood and Williams, 2011). Thus, researchers (Lamont, Hing and Gainsbury, 2011; McMullan, 2011; Palmer, 2014) and government inquiries (DBCDE, 2013; JSCGR, 2011, 2013) have expressed substantial unease about the potential contribution of sports betting advertising to problem gambling amongst this cohort. A review of gambling advertising research suggested that problem gamblers are more vulnerable than non-problem gamblers to the persuasive influence of gambling advertising (Binde, 2014). However, little is known about how Internet sports bettors and those with gambling problems respond to gambling advertising. This paper advances knowledge in this area by focusing on a growing subset of Internet gamblers – online sports bettors – and their responses to a particular type of marketing – gambling promotions during televised sports broadcasts. Of particular interest is whether their responses to these promotions vary with problem gambling severity.

Prior studies of gambling advertising have mainly focused on paid advertising. However, a growing trend in several countries is the embedding of promotions for sports betting into televised sports broadcasts, resulting from the increased sponsorship of professional sport and the purchasing of advertising rights by wagering operators (Lamont, Hing and Gainsbury, 2011). Sponsors can obtain heightened brand presence and avoid ad-skipping by embedding promotional messages within sports coverage (PWC, 2011). This trend has manifested in a variety of marketing techniques used on-field and captured by television cameras, as well as those overlaid during the broadcast itself. These techniques can include gambling operator logos on player uniforms and stadium signage (e.g. on scoreboards, perimeter fences, goal posts), gambling sponsored segments (e.g. replays, man of the match), on-screen displays of betting odds, celebrity endorsement of gambling brands, discussions of betting by match commentators, studio cross-overs to wagering operator

representatives to discuss bet types, specials and odds, as well as paid commercials in program breaks (Milner et al., 2013; Hing et al., 2014d, 2014e). The extent and diversity of these promotions is reflected in survey findings that the most frequent forms of wagering marketing recently observed amongst 3,200 Australians were embedded promotions for sports betting operators and their commercial advertisements during sports broadcasts (Sproston et al., 2015). This same study found that the major messages conveyed in this marketing were ease of access to betting anywhere, anytime, and value for money from online betting offers such as bonus bets, money-back guarantees, cash-back promotions, and the best odds and payouts.

Despite the proliferation of sports betting promotions, no quantitative studies have specifically investigated how Internet sports bettors respond, although this promotional activity may at least partly explain the growing popularity of this gambling form. In Australia, sports betting is the only type of gambling to attract increased consumer uptake over the last decade (Gainsbury et al., 2013). Approximately 50% of all sports betting in Australia is on National Rugby League (NRL) and Australian Football League (AFL) matches, where online sports betting operators are particularly active in sponsoring teams, events and stadiums to gain brand insertion into sports coverage and rights to advertise during commercial breaks. Globally, sports betting accounts for 53% of the online gambling market (H2 Gambling Capital, 2013), with increasing migration from betting through retail outlets and telephone to betting via the Internet using computers and mobile betting apps designed for smartphones and tablets (GBGC, 2011; Morgan Stanley, 2014).

Although sports betting through online and mobile platforms provides convenience and better overall odds, it also has features conducive to problem gambling. These include ease of access, privacy, opportunities for continuous betting, credit availability, use of digital money, high speed transactions, and a proliferation of inducements such as bonus bets and deposits (Hing et al., 2014b). Further, any urges aroused by wagering advertising can be acted upon instantaneously online, which may heighten risks for problem Internet gamblers struggling to control their gambling impulses. Evidence indicates an increase in sports betting clients presenting to problem gambling treatment services, with young men in particular reporting difficulties in controlling their online sports betting (Blaszczynski and Hunt, 2011; Hing et al., 2014c; Palmer, 2014). The abundance of sports betting promotions in televised sport may be contributing to problem sports betting, because advertising for new and relatively risky forms of gambling is thought to have a larger impact, because it accelerates consumer uptake before adaptation processes have started to work (Binde, 2014).

The specific aim of this study was to examine whether responses to gambling promotions in televised sport vary with problem gambling severity amongst Internet sports bettors. Given the stimulus from gambling advertising reported by problem gamblers in previous studies (Binde, 2014), it was hypothesised that attitudinal and

behavioural responses to sports-embedded gambling promotions become more positive as problem gambling severity increases. Of interest in this study were attitudes to gambling sponsors, to gambling being promoted by sponsors during sports matches, and to the promotional techniques they use, along with self-reported impacts on gambling behaviour. If the hypothesis is supported, clinical implications may include developing cognitive and behavioural strategies for Internet sports bettors to resist gambling urges that might be triggered by these promotions. Public health implications for prevention and protection include providing counter-messages to these promotions, especially during sports broadcasts. Responses such as these would be especially important given that exposure to these promotions is unavoidable while watching televised sport, which is likely to be a highly popular pastime amongst sports bettors.

Literature Review

The role of marketing cues in increasing consumer engagement in addictive behaviours, including gambling, is well recognised in consumption models (Martin et al., 2013). Conceptual models of problem gambling have also identified marketing as a contributing factor in the development and maintenance of gambling problems in some individuals (Blaszczynski and Nower, 2002; Thomas and Jackson, 2004; Productivity Commission, 1999; Sharpe and Tarrier, 1993). Cue-elicited arousal, which may be triggered by gambling advertising, has an important reinforcement function (Wulfert, Maxson and Jardin, 2009), because cues elicit the physiological arousal that gamblers crave as well as the urges that motivate gambling in those who are addicted (Grüsser, Plöntzke and Albrecht, 2005). Given the potential for marketing cues to reinforce addictive behaviours (Martin et al., 2013), it is not surprising that problem gamblers tend to report more stimulus from gambling advertising, compared to other gamblers (Binde, 2009; Derevensky et al., 2010; Grant and Kim, 2001; Hing et al., 2014a). Indeed, a recent comprehensive review concluded that the only effect of gambling advertising for which there is direct research evidence is that it maintains or exacerbates existing gambling problems (Binde, 2014). This can occur by arousing more frequent impulses to gamble, by hampering efforts to limit gambling, and by triggering relapse amongst former problem gamblers (Binde, 2014). However, research evidence to support this conclusion is relatively scant, particularly for Internet gamblers. Even less evidence exists in relation to Internet sports bettors.

Qualitative studies have provided in-depth insights from small numbers of problem gamblers. Hing et al. (2014a) interviewed 31 treatment-seeking Internet gamblers, including some sports bettors. Nearly one-half at least partially attributed substantial increases in their online gambling to advertising and promotions for Internet gambling. Promotions were particularly reported to have made gambling more interesting and attractive, providing inducements to gamble and encouraging loss-chasing. Participants who had resolved to control their gambling particularly disliked promotions because they triggered gambling sessions and relapses through

reminders to gamble and attractive bonuses. Some explained how play-through conditions of particular promotions (where bonus bets had to be re-bet a number of times before they could be claimed) increased their gambling time and expenditure. These findings provide preliminary evidence that promotions for Internet gambling increase overall consumption amongst a sub-group of problem Internet gamblers. In structured interviews with 131 problem gamblers, a similar proportion, nearly half, reported that television, radio and billboard advertisements were triggers for them to gamble; however, separate results for any Internet gamblers were not reported (Grant and Kim, 2001).

Binde (2009) interviewed 25 past and current problem gamblers. One-quarter reported that gambling advertising had no impact on their problems, slightly over one-half reported a marginal impact, and one-fifth reported a tangible impact because advertising triggered gambling impulses and/or made it harder to adhere to a decision to moderate their gambling. Two of the three Internet gamblers in the study reported a tangible impact and recalled relapsing in response to mass media and Internet advertising, suggesting that both online and offline advertising can influence online gamblers. Similarly, narrative histories of 26 problem Internet gamblers in the UK (Valentine and Hughes, 2008) implicated gambling advertising as a trigger for lapses in control, with some noting the inescapability of gambling advertisements on television, online, in social media and retail outlets.

Four general population surveys have specifically examined the effects of wagering advertising, but none have separated results for Internet gamblers. Amongst 400 New Zealanders, problem/moderate risk gamblers reported greater influence of sports and race betting marketing on making unplanned bets, compared to lower risk gamblers (Schottler Consulting, 2012). Influential marketing messages recalled by this cohort conveyed that betting is easy and that large returns are available with small bets. Problem gamblers in a sample of 2,681 Australians reported higher exposure to sports betting marketing, and more positive emotional and cognitive responses to it, and greater likelihood of betting on sports after seeing sports betting marketing (70% of problem gamblers compared to 17% of non-problem gamblers) (Sproston et al., 2015). Amongst samples of 1,000 Australian adults and 544 sports bettors, problem gamblers also reported greater exposure and a more favourable disposition to gambling promotions during sports broadcasts (compared to lower risk gamblers), and that these had worsened their problem gambling behaviours; however, separate results were not reported for Internet gamblers (Hing et al., 2014d, 2015).

Surveys of Internet gamblers have also found a heightened self-reported impact of gambling advertising on problem gamblers. Problem gamblers amongst 1,119 online gamblers surveyed were significantly more likely to report gambling online because of advertisements, compared to other gamblers (McCormack, Shorter and Griffiths, 2013). However, only five problem gamblers actually endorsed this as a reason for gambling online and over 25 reasons were rated as more important. An online survey of Australian gamblers found that Internet gamblers were significantly

more likely to increase their gambling in response to promotions (29%) than were non-Internet gamblers (23%), but no results were reported by problem gambling status or specifically for Internet sports bettors (Hing et al., 2014c).

Overall, research suggests that gamblers report more positive responses to gambling marketing and a greater impact on gambling behaviour as problem gambling severity increases. However, given that no prospective studies have been conducted, causal pathways remain unclear. It may be that individuals with gambling problems, who are highly involved consumers, hold more positive attitudes towards gambling marketing and find it interesting and useful. Alternatively, exposure to this marketing may contribute to the development and maintenance of their problem through inducing urges to gamble. Nevertheless, as Derevensky et al. (2010) point out, even if exposure does not ‘cause’ gambling problems, problem gamblers are more attentive to gambling advertisements, are more likely to recall this marketing, and this heightens the risk that alluring messages contribute to excessive gambling.

Self-reported impacts of gambling advertising, as assessed in the studies reviewed above, are likely to be underestimated because advertising messages are often processed unconsciously (Du Plessis, 1994), mere repeated exposure has positive effects even if viewers cannot consciously recall the exposure (Zajonc, 2001), and because of the third person effect (Davison, 2003). Binde (2014) considered the practicality and utility of alternative methodologies in gambling research. He concluded that, while measuring the direct and absolute impact of gambling advertising on problem gambling is exceedingly difficult, it is possible to measure the relative impact on different groups of people by different forms of advertising. This approach, he argues, is valuable to inform harm prevention and responsible marketing as it can differentiate between relatively harmless and relatively risky advertising. It can also highlight specific groups which treatment and other interventions can target. The current study into responses to sports-embedded wagering promotions hopes to inform these types of efforts in relation to Internet sports betting.

Methods

Recruitment and sampling

An online survey of 639 sports bettors from Queensland, Australia was conducted. Because only a moderate proportion of Australian adults engage in sports betting (13%; Hing et al., 2014c) and so would be expensive to reach via a CATI survey, respondents were recruited as a targeted research panel through a market research agency. This was advantageous in containing costs and optimising survey completion and, therefore, reliability (Behrend et al., 2011; Göritz, Reinhold and Batinic, 2000). Ethics committee approval was obtained from a university prior to undertaking the study.

The sample was not intended to be representative of all Queensland sports bettors because it was important that adequate numbers of respondents along the continuum of problem gambling severity were included to enable analyses. Therefore

the panel was purposively comprised of relatively equal numbers of regular (at least fortnightly) and non-regular (less than fortnightly) sports bettors.

Participants

Internet sports bettors were identified through a question asking what percentage of their past year sports betting respondents had done 'via the Internet (e.g. computer, smart phone, tablet or digital TV)?', 'via the telephone (not using the Internet)', and 'at a land-based venue, e.g. TAB, pub, club, casino, etc?', with these percentages required to total 100%. Respondents reporting doing more than 0% of their sports betting via the first option were classified as Internet sports bettors. These totalled 455 of the 639 sports bettors, with 370 of these placing at least half of their bets via the Internet.

Of these 455 respondents, 326 (71.5%) were male. About two-fifths (39.4%) were aged 18-34 years, a similar proportion (37.6%) were aged 35-54 years, and 23.3% were aged 55 years or over. Based on the PGSI, 209 (45.9%) were classified as non-problem gamblers, 83 (18.2%) as low risk gamblers, 45 (9.9%) as moderate risk gamblers, and 118 (25.9%) as problem gamblers. PGSI scores ranged from 0 to 27. No significant difference was observed between males and females in terms of PGSI score (median = 1 for both groups, Mann-Whitney $U = 19,451.0$, $Z = -1.31$, $p = 0.189$). However, younger respondents were found to have significantly higher levels of problem gambling severity, Spearman's $\rho = -0.35$, $p < 0.001$.

Procedure

The market research company administered the online survey in October-December 2012, following the grand finals of the two popular football codes (NRL and AFL) to optimise respondents' recollection of the associated gambling marketing. The survey commenced with an informed consent preamble and concluded with contact details for several gambling help agencies.

Measures

Problem gambling status was measured using the Problem Gambling Severity Index (Ferris and Wynne, 2001), the standard 9-item instrument used in numerous countries to measure past year problem gambling. Responses were scored as never = 0, sometimes = 1, most of the time = 2 and almost always = 3. Total scores can range from 0-27, with cut-off scores being 0 = non-problem gambler, 1-2 = low risk gambler, 3-7 = moderate risk gambler, and 8-27 = problem gambler. Cronbach's alpha in this sample was .98.

Exposure to gambling promotions during televised sport was measured by asking frequency of watching eight types of televised professional sport during the most recent season where gambling promotions are most concentrated (NRL, AFL, rugby union, soccer, cricket, motor racing, tennis, golf). Response categories ranged from 'never' to 'daily' on a 7-point Likert scale. These variables exhibited good reliability (Cronbach's $\alpha = .95$) and were therefore combined into an overall measure.

The Sponsorship Response Scale (Speed and Thompson, 2000) measured the overall attitude of respondents to gambling sponsors promoted during televised sport. The nine questions all had the same stem: 'Sponsorship of sport by gambling operators ...'. Items were divided into three subscales: Favourability (e.g. 'makes me feel more favourable towards the gambling sponsors'); Interest (e.g. 'would make me more likely to notice gambling sponsors' names on other occasions'); and Use (e.g. 'would make me more likely to purchase gambling sponsors' products'). All three subscales exhibited good reliability (Cronbach's alpha of .93, .88 and .93 respectively), as did the scale as a whole (Cronbach's alpha of .96).

Attitude to the promotion of gambling during televised sport was measured using six items to assess general affective responses (e.g. 'good/bad'; 'like/dislike'; 'harmless/harmful') measured on a 5-point semantic differential scale. A scale was calculated, with higher scores indicating a more negative attitude towards the promotion of gambling during televised sport. Overall reliability was excellent, Cronbach's alpha = .93.

Approval of gambling promotional techniques used assessed respondents' approval/disapproval of 11 different types of gambling promotions used during televised sport (e.g. 'gambling logos on player uniforms'; 'on-screen displays of live betting odds'). The 11 techniques were derived from Milner et al. (2013). Each item was assessed on a 5-point Likert scale (1 = strongly disapprove to 5 = strongly approve). This scale had high internal consistency, Cronbach's alpha = .95.

Subjective influence of gambling promotions on sports betting behaviour was measured through five global questions assessing whether the promotions had increased the respondent's frequency, expenditure and time spent on sports betting, caused them to spend more time and money than intended on sports betting, and caused them or someone close to them sports betting-related harm. Each item was assessed on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The scale exhibited good reliability (Cronbach's alpha = .96) so a total score was calculated.

Socio-demographic data. Gender and age were reported.

Analysis

The dependent variable for all analyses was total scores on the PGSI as these capture more information than using PGSI groups. For example, individuals scoring between 8-27 are classified as problem gamblers, yet those scoring 8 and those scoring 27 clearly experience different levels of problem gambling-related symptoms.

As scores on the PGSI were highly skewed, non-parametric statistics were conducted. These tests include Spearman's correlations for ordinal, interval or ratio independent variables and Kruskal-Wallis and Mann-Whitney U-tests for nominal independent variables. Where the Kruskal-Wallis test was used, post-hoc pairwise tests were conducted using a series of Mann-Whitney U-tests. All analyses were conducted using an alpha of 0.05 unless stated otherwise.

Results

Exposure to gambling promotions during televised sport

All respondents were asked how often they had watched each of eight televised sports during the most recent season as a measure of potential exposure to gambling promotions during televised sport (Table 1). As the sample had a sports focus, many sports had relatively high viewership. The most frequently watched were rugby league (NRL), which 61.5% of the sports bettors watched at least weekly, followed by Australian Rules Football (AFL; 47.9%) and cricket (40.4%). About one-quarter watched rugby union (28.2%) or soccer (23.7%) at least weekly, with lower proportions watching motor racing (21.3%), tennis (21.3%) and golf (16.9%). Respondents who watched these sports more often (in combination) had significantly higher PGSI scores, Spearman's $\rho = 0.45$, $p < 0.001$.

Insert Table 1 about here

Sponsorship response

All three sponsorship response subscales correlated with PGSI scores. Those with more positive *interest*, *favourability* and *use* were significantly more likely to have higher PGSI scores (Spearman's $\rho = 0.43$, 0.48 and 0.49 respectively, all $p < 0.001$). The overall scale score also correlated positively with PGSI scores, Spearman's $\rho = 0.50$, $p < 0.001$.

Attitude to the promotion of gambling during televised sport

Respondents with more positive attitudes towards gambling being promoted during televised sports (negatively coded) were significantly more likely to have higher PGSI scores, Spearman's $\rho = -0.27$, $p < 0.001$.

Approval of gambling promotional techniques used

Respondents who were more approving of the sponsors' promotional techniques were significantly more likely to have higher PGSI scores than those who were less approving, Spearman's $\rho = 0.34$, $p < 0.001$.

Subjective influence of gambling promotions on sports betting behaviour

Respondents who perceived that gambling promotions had more influence on their sports betting behaviour were significantly more likely to have higher PGSI scores than those without this perception, Spearman's $\rho = 0.61$, $p < 0.001$.

Regression analysis

To account for any statistical overlap, a regression analysis was conducted using a multi-step procedure. The proposed model aimed to predict total PGSI scores with the following predictors: gender, age (in categories), exposure, sponsorship response, attitude to the promotion of gambling during televised sport, approval of gambling

promotional techniques, and subjective influence of gambling promotions on sports betting behaviour.

The first step was to test for excessive overlap between predictors that could bias subsequent analyses. Correlations indicated a high level of overlap between attitude to the promotion of gambling during televised sport and approval of gambling promotional techniques, with the lowest tolerance value of 0.376. This was deemed acceptable for this model.

The omnibus test for the model was significant (Likelihood Ratio Chi-square = 420.08, $df = 7$, $p < 0.001$). Goodness of fit statistics indicated good fit (Pearson Chi-Square = 597.21, $df = 388$, normed chi-square = 1.54, where values between 1 and 2 are generally taken to indicate good fit).

Significant predictors of higher PGSI scores were: being male, younger, more favourable sponsorship response, higher approval of gambling promotional techniques, and a higher subjective influence of gambling promotions on sports betting behaviour (Table 2). Exposure to gambling promotions during televised sport and attitude to the promotion of gambling during televised sport were not significant predictors of higher PGSI scores in the model. Overall, the hypothesis that attitudinal and behavioural responses to sports-embedded gambling promotions become more positive as problem gambling severity increases was considered to be supported.

Insert Table 2 about here

Discussion

Male and younger online sports bettors had higher overall problem gambling severity than their female and older counterparts. These results are consistent with previous findings that online sports betting is most popular amongst young adult males (LaBrie et al., 2007; Wood and Williams, 2011) and that increasing numbers of young male online sports bettors are seeking gambling help (Kerin, 2015). Several authors have speculated that young men who engage in online sports betting are an at-risk group for problem gambling (Lamont, Hing and Gainsbury, 2011; McMullan, 2011; Palmer, 2014) and the current study statistically supports this relationship.

In support of the hypothesis, Internet sports bettors with higher problem gambling severity responded more positively to gambling promotions during televised sport. Previous research has found that problem gamblers report more stimulus from gambling advertising (Binde, 2009, 2014; Derevensky et al., 2010; Grant and Kim, 2001; Hanss et al., 2015), including those who gamble online (Hing et al., 2014a). However, this is the first study to confirm this relationship amongst a reasonably large sample of online sports bettors that also contained robust numbers of at-risk and problem gamblers. It is also the first study to identify this relationship specifically for the form of wagering advertising that is most frequently seen by Australians – promotions for sports betting operators during televised sports matches (Sproston et al., 2015).

Of particular interest is that frequency of exposure to these promotions was not a significant predictor of higher problem gambling severity, when controlling for other variables. This result probably reflects the unavoidability of exposure to these promotions by all sports viewers, including those with and without gambling problems. Instead, positive attitudes to gambling sponsors and to the promotional techniques they use during sports broadcasts were predictive. Research has identified a wide range of attitudes to televised sports betting promotions amongst sports viewers, including positive (e.g., arousal, optimism, excitement), neutral and negative (e.g., worry, anger and irritation) responses (Lamont, Hing and Vitartas, 2015). In a survey of 2,681 Australian adults (Sproston et al., 2015), more negative responses to sports betting advertising were found. These wide variations in attitudes to sports betting promotions were also reflected in the current study and helped to explain some of the variation in problem gambling severity. However, it is unclear whether positive attitudes to gambling sponsors and their promotional techniques contribute to gambling problems or whether sports bettors with more problem gambling symptoms are more positively disposed to this sponsored marketing. In either case, favourable attitudes to this marketing appear to be a problem gambling risk factor amongst online sports bettors, suggesting that public health interventions to moderate these attitudes may be useful.

The current study extends on previous related studies (Hing et al., 2014d; Sproston et al., 2015) by providing more detailed insights into how attitudes to particular aspects of sports betting advertising vary with problem gambling severity. Online sports bettors with more problem gambling symptoms had a more positive response to gambling sponsors, reflected in increased awareness of, attention to, and recall of the sponsor's name and their promotions (interest), a more favourable disposition towards the sponsor (favourability), and a greater likelihood of using the sponsor's products (use). Although our finding was only moderately significant, it aligns with a shift in televised betting advertisements over recent years from providing practical and factual information to a focus on brand engagement, brand personality and emotional persuasion. For example, Sproston et al.'s research (2015) found sports betting advertising to be heavily brand focused, with frequent emphasis on the general value of the brand's products, reputation and personality, rather than on specific product details.

In addition to paid advertisements, the embedding of sponsors' brands into sports broadcasts provides further opportunity to engage sports viewers with the brand. Gordon and Chapman (2014) explain how the embedding of wagering brands into Australian sport has created consumption communities around betting, thus socialising consumers into sports betting. Young adults were highly aware of and engaged by sports betting brands, and they gravitated towards brands whose personalities reflected their own socialising and consumption practices. The power of sports betting brands as social symbols has also been discussed (Milner et al., 2013), driving aspirations to obtain the benefits promoted, such as wealth, mateship, power

and sexual attractiveness. Given the immersion of sports betting brands into sports coverage and into young adults' socialising and consumption practices around watching sport, it is not surprising that a subset of online sports bettors holds positive attitudes to sports betting sponsors. The current study has revealed that these positive attitudes are linked to greater problem gambling severity.

A second predictor of more severe gambling problems was a more positive response to gambling sponsored promotional techniques, which include the prolific display of brand references through logos on team uniforms, stadium signage and on-screen displays, reflecting another mechanism by which sports betting brands have become immersed into sports coverage and an integral part of watching sport (Lamont, Hing and Gainsbury, 2011; Milner et al., 2013). Other promotional techniques include live odds updates, on-screen displays of live betting odds, promotions for special bets available, and discussions of live odds and betting options by match commentators and sports betting company representatives. This promotion is heavily branded, but also provides information that may be useful and engaging for sports bettors, particularly those who are very involved bettors such as at-risk and problem gamblers. Thus, their more positive attitudes to the promotional techniques used by gambling sponsors may be due to successful brand engagement of this cohort, as well as the provision of information which is more salient and interesting to them.

The third predictor of greater problem gambling severity was stronger agreement that the promotions had increased the respondent's sports betting, impaired control over sports betting, and sports betting-related harm. Thus, online sports bettors at greater risk of problem gambling were more likely to recognise the harmful influence of these promotions on their gambling behaviour, suggesting some accuracy in these self-rated impacts. While Binde (2014) argues that people's estimates of how much gambling advertising affects their consumption tend to be unreliable, he notes that self-rated impacts are valuable if they show relative differences between groups. Current findings suggest that gambling promotions during televised sport resonate particularly with at-risk and problem gamblers amongst online sports bettors, raising questions over the ethical appropriateness of this marketing.

Overall, the results suggest that the attitudes that sports embedded messages engender are more salient than frequency of exposure in predicting gambling problems amongst online sports bettors. This implies a need for social marketing and public education to counter these promotional messages with the aim of moderating positive sentiment towards sports betting, wagering brands and their promotion that lead to excessive gambling. Because young adult men are most at-risk for gambling problems amongst online sports bettors, these educational efforts need to target and resonate with this group. Media used for this social marketing should emulate those used successfully by wagering operators, including during sports broadcasts, at live sports events, online, and in youth and social media. Techniques used to convey counter-messages could also emulate those used by wagering marketers, including use of stimulating colours, sophisticated graphics, sporting heroes, other celebrities, and

youth role models. These messages need to challenge suggestions that engagement in sports betting leads to power, wealth, male bonding, and social and sexual success. To adhere to recommended practice (Parke et al., 2014), they should also encourage self-appraisal of one's betting behaviour, and provide information on sources of gambling help, including self-help resources. Given that positive attitudes towards various aspects of sports betting promotions are a risk factor for gambling problems, nurturing more informed attitudes to sports betting and its associated risks, and fostering a healthy scepticism towards its marketing, should help to stem the growing incidence of problem gambling amongst this cohort.

Further research is needed to confirm the results of this study, given its methodological limitations of a non-representative sample, restriction to one jurisdiction, and reliance on self-report measures. More accurate measures of exposure to sports betting advertising are particularly needed. The current study's measure was only indicative and its use may have obscured significant results. Prospective studies could untangle causal relationships between exposure to sports betting promotions, related attitudes and problem gambling, which could not be achieved with this study's cross-sectional design.

Conclusion

Wagering promotions during televised sport, particularly for online sports betting operators, are the most commonly observed form of wagering promotion in Australia. This study examined whether responses to these messages varied with problem gambling severity amongst online sports bettors. The results indicated that young male Internet sports bettors are especially vulnerable to gambling problems, particularly when they hold positive attitudes to gambling sponsors and to the promotional techniques they use to embed their promotional messages into sports broadcasts. Further, as problem gambling severity increased, so too did recognition that these promotions have impacted negatively on their sports betting behaviour. While community concerns have increased pressure on governments and industry to moderate these promotions, a plethora of sports betting brands and promotions remain heavily integrated into sports coverage. Social marketing efforts are needed to offset their persuasive appeal and to counter the formation of positive attitudes towards sports betting, wagering brands and their promotion that can lead to excessive gambling amongst online sports bettors.

Acknowledgement

The authors would like to thank Dr Elian Fink who assisted with data preparation.

Funding

This work was supported by the Queensland Department of Justice and Attorney General (Responsible Gambling Research Grant, no number assigned).

Conflicts of interest

The authors have no conflicts of interest to declare in relation to this paper.

References

- Behrend, T. S., Sharek, D. J., Meade, A. W., & Wiebe, E. N. (2011). The viability of crowdsourcing for survey research. *Behavior Research Methods*, 43(3), 800-813.
- Binde, P. (2009). Exploring the impact of gambling advertising: An interview study of problem gamblers. *International Journal of Mental Health and Addiction*, 7(4): 541-554.
- Binde, P. (2014) *Gambling advertising: A critical research review*. London: Responsible Gambling Trust.
- Blaszczynski, A. and Hunt, C. (2011). *Online sports betting has created new generation of problem gamblers*. Sydney: The University of Sydney; 2011. Available from: <http://sydney.edu.au/news/84.html?newsstoryid=6545>
- Blaszczynski, A., and Nower, L. (2002). A pathways model of problem and pathological gambling. *Addiction*, 97, 487-499.
- Davison, W. P. (2003). The third-person effect in communication. *Public Opinion Quarterly*, 47, 1-15.
- Department of Broadband Communications and the Digital Economy (DBCDE) (2013). *Final report 2012: Review of the Interactive Gambling Act 2001*. Canberra: DBCDE.
- Derevensky J., Sklar A., Gupta R., and Messerlian C. (2010). An empirical study examining the impact of gambling advertisements on adolescent gambling attitudes and behaviors. *International Journal of Mental Health and Addiction*, 8(1), 21-34.
- Du Plessis, E. (1994). Recognition versus recall. *Journal of Advertising Research*, 34(3), 92-106.
- Ferris, J., and Wynne, H. (2001). The Canadian Problem Gambling Index. *Ottawa, ON: Canadian Centre on Substance Abuse*.
- Gainsbury, S. M., Russell, A., Hing, N., Wood, R., Lubman, D. I., and Blaszczynski, A. (2014). The prevalence and determinants of problem gambling in Australia: Assessing the impact of interactive gambling and new technologies. *Psychology of Addictive Behaviors*. 28(3), 769-79. DOI: 10.1037/a0036207
- Gainsbury, S. M., Russell, A., Hing, N., Wood, R., Lubman, D. I., and Blaszczynski, A. (2013). How the Internet is changing gambling: Findings from an Australian prevalence survey. *Journal of Gambling Studies*. DOI 10.1007/s10899-013-9404-7
- Global Betting and Gaming Consultants (GBGC) (2011). *Global gaming report* (6th ed.). Castletown, Isle of Man, British Isles: GBGC.
- Gordon, R., and Chapman, M. (2014). *Brand community and sports betting in Australia*. Melbourne: Victorian Responsible Gambling Foundation.

- Grant, J. E., and Kim, S. (2001). Demographic and clinical features of 131 adult pathological gamblers. *Journal of Clinical Psychiatry*, 62, 957-962.
- Grüsser, S. M., Plöntzke, B., and Albrecht, U. (2005). Pathological gambling. An empirical study of the desire for addictive substances. *Nervenarzt*, 76, 592–596.
- Göritz, A., Reinhold, N., and Batinic, B. (2000). Online panels. In B. Batinic, U. Reips and M. Bosnjak (Eds), *Online social sciences* (pp. 29-51). Seattle: Hogrefe.
- Hanss D, Mentzoni RA, Griffiths MD and Pallesen S. (2015) The impact of gambling advertising: Problem gamblers report stronger impacts on involvement, knowledge, and awareness than recreational gamblers. *Psychology of Addictive Behaviors*. Available at: <http://dx.doi.org/10.1037/adb0000062>
- H2 Gambling Capital (2013). *There's nothing virtual about the opportunity in real-money gambling: Opportunities for game developers in regulated real-money online gambling*. Retrieved 15 September 2013 from: <http://files.odobo.com/H2Report>
- Hing, N., Cherney, L., Blaszczyński, A., Gainsbury, S., and Lubman, D. (2014a). Do advertising and promotions for online gambling increase gambling consumption? An exploratory study. *International Gambling Studies*, 14(3), 394-409. DOI: 10.1080/14459795.2014.903989
- Hing, N., Cherney, L., Gainsbury, S., Lubman, D., Wood, R., and Blaszczyński, A. (2014b). Maintaining and losing control during Internet gambling: A qualitative study of gamblers' experiences. *New Media and Society*. DOI: 10.1177/1461444814521140
- Hing, N., Gainsbury, S., Blaszczyński, A., Wood, R., Lubman, D., and Russell, A. (2014c). *Interactive gambling*. Melbourne: Gambling Research Australia.
- Hing, N., Lamont, M., Vitartas, P., and Fink, E. (2014d). Sports-embedded gambling promotions: A study of exposure, sports betting intention and problem gambling amongst adults. *International Journal of Mental Health and Addiction*. DOI: 10.1007/s11469-014-9519-9
- Hing, N., Lamont, M., Vitartas, P., and Fink, E. (2015, online). How sports bettors respond to sports-embedded gambling promotions: Implications for compulsive consumption. *Journal of Business Research*. doi:10.1016/j.jbusres.2015.03.003
- Hing, N., Vitartas, P., Lamont, M., and Fink, E. (2014e). Adolescent exposure to gambling promotions during televised sport: An exploratory study of links with gambling intentions. *International Gambling Studies*, 14(3), 374-393. DOI: 10.1080/14459795.2014.902489
- Joint Select Committee on Gambling Reform (JSCGR) (2011). *Interactive and online gambling and gambling advertising*. Canberra: Commonwealth of Australia.

- Joint Select Committee on Gambling Reform (JSCGR) (2013). *The advertising and promotion of gambling services in sport*. Canberra: Commonwealth of Australia.
- Kerin, L. (2015). 'Dramatic increase' in online gambling addiction among young men, treatment clinic warns. *The World Today*, 28 May.
- LaBrie, R. A., LaPlante, D. A., Nelson, S. E., Schumann, A., and Shaffer, H. J. (2007). Assessing the playing field: A prospective longitudinal study of internet sports gambling behavior. *Journal of Gambling Studies*, 23(3), 347-362.
- Lamont, M., Hing, N., and Gainsbury, S. (2011). Gambling on sport sponsorship: A conceptual framework for research. *Sport Management Review*, 14(3), 246-257.
- Lamont, M., Hing, N., & Vitartas, P. (2015, online). Affective responses to gambling promotions during televised sport: A qualitative analysis. *Sport Management Review*. <http://dx.doi.org/10.1016/j.smr.2015.06.002>
- Martin, I. M., Kamins, M. A., Pirouz, D. M., Davis, S. W., Haws, K. L., Mirabito, A. M., ... and Grover, A. (2013). On the road to addiction: The facilitative and preventive roles of marketing cues. *Journal of Business Research*, 66(8), 1219-1226.
- McCormack, A., Shorter, G. W., and Griffiths, M. D. (2013). Characteristics and predictors of problem gambling on the Internet. *International Journal of Mental Health and Addiction*, 11(6), 634-657.
- McMullan, J. (2011). Submission to the Joint Select Committee on Gambling Reform. Available from http://www.aph.gov.au/senate/committee/gamblingreform_ctte/interactive_online_gambling_advertising/submissions.htm
- Milner, L., Hing, N., Vitartas, P., and Lamont, M. (2013). An exploratory study of embedded gambling promotion in Australian football television broadcasts. *Communication, Politics and Culture*, 46, 177-198.
- Morgan Stanley (2014). *Australia/UK wagering: Australia online: Picking the winning trifecta*. Sydney: Morgan Stanley Research Asia/Pacific.
- Neal, P., Delfabbro, P., and O'Neil, M. (2005). *Problem Gambling and harm: Towards a national definition*. Melbourne: Gambling Research Australia.
- Palmer, C. (2014). *Sports betting research*. Hobart: Department of Health and Human Services.
- Parke, A., Harris, A., Parke, J., Rigbye, J., and Blaszczynski (2014). Facilitating awareness and informed choice in gambling. *The Journal of Gambling Business and Economics*, 8(3), 6-20.
- Productivity Commission (1999). *Australia's gambling industries*. Report No. 10. Canberra: AusInfo.
- PWC (2011). *Changing the game: Outlook for the global sports market to 2015*. Retrieved 21 January 2015 from:

http://www.pwc.com/en_gx/gx/hospitality-leisure/pdf/changing-the-game-outlook-for-the-global-sports-market-to-2015.pdf

- Schottler Consulting (2012). Research to investigate the effects of gambling advertising, marketing and sponsorship on gambling perceptions and behavior. Wellington: New Zealand Ministry of Health
- Sharpe, L., and Tarrier, N. (1993). Towards a cognitive-behavioural theory of problem gambling. *British Journal of Psychiatry*, 162, 407-412.
- Speed, R., and Thompson, P. (2000). Determinants of sports sponsorship response. *Journal of the Academy of Marketing Science*, 28(2), 226-238.
- Sproston, K., Hanley, C., Hing, N., and Gainsbury, S. (2015). *Marketing of sports betting and racing*. Melbourne: Gambling Research Australia.
- Thomas, S. A., and Jackson, A. C. (2004). Influences on gambling behaviours and outcomes: a model for the design of effective interventions. *Gambling Research*, 16(2), 40.
- Valentine, G. and K. Hughes (2008). *New forms of participation: Problem internet gambling and the role of the family*. Leeds: University of Leeds.
- Wardle H., Moody A., Griffiths M., Orford J., and Volberg R. (2011) Defining the online gambler and patterns of behaviour integration: Evidence from the British Gambling Prevalence Survey 2010. *International Gambling Studies*, 11(3), 339-356.
- Wood, R., and Williams, R. (2011). A comparative profile of the Internet gambler: Demographic characteristics, game play patterns, and problem gambling status. *New Media and Society*, 13, 1123–1141.
- Wulfert, E., Maxson, J., and Jardin, B. (2009). Cue-specific reactivity in experienced gamblers. *Psychology of Addictive Behaviors*, 23(4), 731-735.
- Zajonc, R. B. (2001). Mere exposure: A gateway to the subliminal. *Current Directions in Psychological Science*, 10(6), 224-228.

Table 1: Televised sport viewing by Internet sports betters during the most recent season (Total $N = 455$).

Sport	Daily	2-3 times a week	Once a week	2-3 times a month	Once a month	Less than once a month	Never
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Rugby League	32 (7.0)	157 (34.5)	91 (20.0)	63 (13.8)	34 (7.5)	40 (8.8)	38 (8.4)
Australian Rules Football	26 (5.7)	116 (25.5)	76 (16.7)	48 (10.5)	48 (10.5)	46 (10.1)	95 (20.9)
Rugby Union	15 (3.3)	43 (9.5)	70 (15.4)	56 (12.3)	74 (16.3)	81 (17.8)	116 (25.5)
Soccer	24 (5.3)	42 (9.2)	42 (9.2)	53 (11.6)	46 (10.1)	77 (16.9)	171 (37.6)
Cricket	27 (5.9)	100 (22.0)	57 (12.5)	61 (13.4)	49 (10.8)	53 (11.6)	108 (23.7)
Motor Racing	13 (2.9)	31 (6.8)	53 (11.6)	62 (13.6)	66 (14.5)	79 (17.4)	151 (33.2)
Golf	14 (3.1)	26 (5.7)	37 (8.1)	46 (10.1)	48 (10.5)	79 (17.4)	205 (45.1)
Tennis	22 (4.8)	34 (7.5)	41 (9.0)	52 (11.4)	71 (15.6)	105 (23.1)	130 (28.6)

Table 2: Estimates for the predictors in the negative binomial predicting PGSI scores.

Predictor	Estimate	Standard Error	Wald chi- square	<i>P</i>
Intercept	-1.757	0.655	7.206	0.007
Gender	0.385	0.144	7.15	0.007
Age	-0.260	0.048	29.399	< 0.001
Exposure	0.009	0.005	3.028	0.082
Sponsorship response	0.001	<0.001	4.582	0.032
Attitude to the promotion of gambling during televised sport	0.093	0.105	0.775	0.379
Approval of gambling promotional techniques	0.231	0.114	4.096	0.043
Subjective influence of gambling promotions on sports betting behaviour	0.760	0.079	92.712	< 0.001