Testing a gambling warning label's effect on behavior

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Abstract

Responsible gambling campaigns are one measure enacted by a number of statutory bodies and gambling operators in response to concerns about gambling marketing and the accessibility of modern gambling products. For example, since 2015 a number of the UK's largest gambling operators have attached the following warning label to TV and shop window adverts: "when the FUN stops, stop" (where the word "fun" is printed in noticeably larger font than any other word). Here we present an initial independent test of this warning label's effect on contemporaneous gambling behavior. A short incentivized survey was conducted to mimic the scenario of online gambling advertising, with warning label presence manipulated between-participants. Participants were given a sequence of nine £0.10 bonuses, and on each trial were presented with the possibility to gamble this bonus on a soccer bet, with bet details and payoffs taken from a major gambling operator's website. There were 506 unique participants who had all previously indicated that they were Premier League soccer fans and had experience in online sports betting. Overall, participants decided to bet on 41.3% of trials when a warning label was shown, compared to 37.8% when no warning label shown (i.e., descriptively the label increases the probability of gambling). According to the preregistered analysis plan, this difference was not significant, $\chi^2(1) = 2.10, p = .15$. The "when the FUN stops, stop" gambling warning label did not achieve its aim of prompting more responsible gambling behavior in the experiment.

Key words: responsible gambling, gambling behavior, gambling advertising, public health

Introduction

There has been a rapid increase in gambling marketing and the accessibility of gambling in many countries in recent years (Lopez-Gonzalez, Estévez, & Griffiths, 2017; Markham & Young, 2015; Orford, 2010; van Schalkwyk, Cassidy, McKee, & Petticrew, 2019; Wardle, Reith, Langham, & Rogers, 2019). Responsible gambling campaigns are one popular response by industry operators and statutory authorities to potential concerns about gambling's prominence (Revealing Reality, 2019). For example, in 2015, a trade organization which represents some of the UK's largest gambling operators, began a high-profile responsible gambling campaign which is recognized by at least 54% of all UK adults, and which continues to this day (The Senet Group, 2017). The campaign involves the oft-repeated warning label, "when the FUN stops, stop" (where the word "fun" is printed in noticeably larger font than any other word; see Figure 1C). This warning label is meant to take up at least 20% of all television advert end-frames and bookmaker shop window adverts (The Senet Group, 2019). The trade organization's testing, based on gamblers' answers to self-report questions, suggested that the campaign has, "prompted almost 6 million people to warn others about their gambling, 'if only jokingly'" (The Senet Group, 2017). This trade organization has also called on the rest of the industry to adopt the same campaign (Senet Group, 2018). Given the prominence of this campaign, it is crucial that more robust and independent empirical tests are conducted to assure that the warning label has the desired effect on gambling behavior. Here we present an initial test of this warning label's effect on gambling behavior.

There are three potential effects that this warning label could have on gambling behavior:

1. Positive effect. The "when the FUN stops, stop," campaign is associated with five responsible gambling tips, such as, "only bet what you can afford" (The Senet Group, 2017).

The high levels of awareness of these tips amongst regular gamblers (84% for this tip), may well mean that seeing the gambling warning label will prompt more responsible gambling behavior.

2. No effect. Although the warning label has been associated with some beneficial changes in self-reported gambling intentions (The Senet Group, 2017), changes in intention are not always reflected in behavioral changes. This has been observed previously in the intention-behavior gap literature (Sheeran & Webb, 2016). Therefore, the warning label might not yield measurable effects on gambling behavior.

3. Negative effect. There is also a literature on behavioral backfiring, showing that interventions can sometimes yield the opposite effect to the one intended (Stibe & Cugelman, 2016). For example, policies intending to reduce alcohol consumption in licensed establishments might backfire by leading young adults to "pre-drink" before they go out (Wells, Graham, & Purcell, 2009). It is possible that the warning label may prompt less responsible gambling behavior.

The term "responsible gambling" has been argued as not clearly mapping onto a defined set of gambling behaviors (Reith, 2008). Here, we operationalized responsible gambling behavior as the proportion of times that gamblers risked money from an experimental budget. This is because gambling expenditure is positively associated with gambling harm (Markham, Young, & Doran, 2016). Contemporaneous gambling expenditure is also an easily-measured dependent variable for an experimental study, compared to more distal effects (such as signing up to a gambling treatment clinic).

A significant proportion of gambling advertising around the UK's national sport, soccer, advertises currently-available betting odds, displaying what gamblers could win if a specified set of outcomes happens (Newall et al., 2019). These adverts often combine these betting

odds with the "when the FUN stops, stop" warning label. Mimicking these adverts was therefore an ecologically-valid way of measuring the warning label's effect on gambling behavior. These adverts tend to promote odds on highly-specific events with high potential payoffs, e.g., "Sergio Aguero to score first and Manchester City to win 1-0," and only sometimes promote less-specific events with lower potential payoffs, e.g., "Manchester City to win" (Newall, Thobhani, Walasek, & Meyer, 2019; Newall, 2015; Newall, 2017). Specific events with high potential payoffs can also have exceptionally high bookmaker profit margins (Hassanniakalager & Newall, 2019).

Our primary aim was to test the warning label's effect on gambling behavior (between-participants), with a secondary aim to see whether manipulating the specificity of advertised events (within-participants) would also affect gambling behavior. These aims were investigated via a well-powered preregistered online experiment, and analyzed via a single statistical mixed-model.

Method

Preregistration documents, materials, anonymized results, an a priori power analysis, and statistical analysis scripts can be accessed from https://osf.io/8v2kh. Participants made choices over nine £0.10 bets for the upcoming FA Cup final, the highest-profile regularly scheduled match in the domestic UK soccer calendar. Payoff sizes were based on currently-available betting odds from a major gambling operator's website, and participants received all bonuses the day after the match.

Participants

In total 506 unique participants were recruited from the crowdsourcing platform Prolific Academic, and paid £0.50 baseline compensation (mean average completion time 4.37

minutes, corresponding to an equivalent of £6.86 per hour). This baseline compensation was on average approximately doubled once all bonus payments were made (a total of £347.23 paid in bonuses). Only participants who had previously indicated to the platform that they were UK nationals, soccer fans ("Are you a fan of an English Premier League football team?" Answer: "Yes"), and online sports bettors ("What types of online gambling / casino games have you played?" Answer: "Race & sports book") were eligible to take part.

The sample size was chosen to trade-off between the cost of running the study and the ability to create a study with high statistical power. Our simulation-based power analysis, based on a generalized linear mixed model (GLMM) with a binomial family, indicated that the experiment had a minimum power of 80% to detect a difference in probability of accepting the bet of roughly 6% (the further away the average probability of accepting the bet is from 50%, the larger the power to detect an effect of 6% difference).

Participants were on average 36.1 years old (*SD* = 11.1), were 66.7% male, had a mean problem gambling severity index score of 2.9 (*SD* = 4.2), reported gambling on 71.3 days over the previous 12 months (S*D* = 87.5). Additionally, 12.9% were fans of Manchester City, and 1.6% were fans of Watford (the two teams competing in the match).

Materials

On each trial participants saw a description of the incentivized task, as shown in Figure 1a. Immediately below that, participants saw a mimicked gambling advert, as shown in Figure 1b and 1c for the two between-participants conditions. The text of each bet and the corresponding potential payoff were taken from a major gambling operator's website.

a)

On this trial we are giving you a free 10p bonus

We are also providing you with a bet on the FA Cup final between Manchester City and Watford that you can put this bonus on.

This bet is based on the betting odds currently available on a major gambling operator's website. All bets relate to events during the normal 90 minutes of play plus any stoppages, but not to events in any potential period of extra time or penalties.

If you bet and the stated events occur, you will receive a bonus in your Prolific Academic account equal to the stated amount of money. Otherwise, the bet will be worth nothing.

If you choose not to bet, you will receive the 10p bonus for sure.

All bonuses will be paid out at the same time, on or before May 31st.

b)

Bet ○ Don't Bet ○

c)

Bet ○ Don't Bet ○

Fig 1 Screenshots of experimental instructions (a), visual stimuli in control condition (b), and visual stimuli in treatment condition (c)

Descriptions of the nine bets given to participants can be seen in Table 1. The nine bets were split into three levels of specificity. As specificity increased, the total potential payoff from each bet increased. Specificity was varied to reflect the observed variation in specificity in UK soccer gambling adverts (Newall et al., 2019; Newall, 2015; Newall, 2017).

Table 1. Details of bet stimuli used, along with the percentage of participants betting in each condition. Bet content and payoffs were taken from a major gambling operator's website.

Bet number	Specificity level	Bet details	Control bet percentage	Warning label bet percentage
1	Low	Manchester City to win. Win 12p	54.8%	55.5%
2	Low	Manchester City and Watford to draw. Win 65p	25.0%	31.9%
3	Low	Watford to win. Win £1.20	35.3%	36.2%
4	Medium	Manchester City to win 4-1. Win £1.70	44.1%	49.2%
5	Medium	Manchester City and Watford to draw 2-2. Win £2.60	22.2%	31.9%
6	Medium	Watford to win 1-0. Win £2.60	30.2%	32.3%
7	High	Sergio Aguero to score first and Manchester City to win 1-0. Win £2.90	50.8%	55.9%
8	High	Both teams to score, Troy Deeney to score, over 4 cards, and over 10 corners. Win £2.90	40.1%	42.1%
9	High	Gerard Deulofeu to score first and Watford to win 2-1. Win £15.10	37.7%	36.6%
Overall			37.8%	41.3%

Because the bet size was fixed at £0.10 on each trial, the bookmaker's odds were displayed as the total potential payoff from a bet of £0.10. This way of describing potential payoffs has been observed previously in bookmaker shop window adverts, for a fixed bet size of £10 (Newall, 2015), and simplified the task for participants compared to displaying traditional betting odds (Cortis, 2015).

Procedure

Participants were randomly assigned to perform all their trials either under the control condition, or the warning label condition. After giving informed consent, participants then performed their nine bet choice trials in random order.

Measures

The dependent measure was whether participants chose to bet on each of the nine trials. After the main experimental trials, age, gender, problem gambling severity index (Ferris & Wynne, 2001), previous year gambling frequency, and the participant's affiliation with either team, were collected in random order.

Results

Participants bet on 37.8% of trials in the control condition, and 41.3% in the warning condition, a negative effect of 3.5% (i.e., descriptively the warning label increases the probability to gamble; Figure 2). A full breakdown by condition and trial is in Table 1.

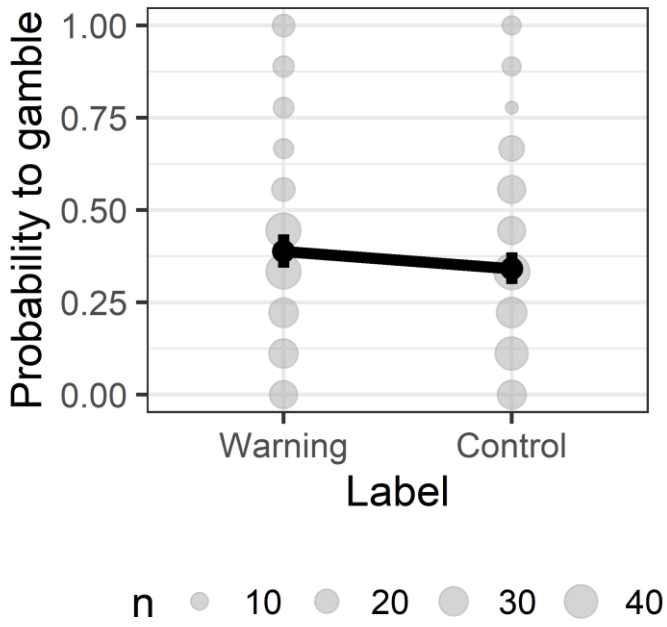

Fig 2 Probability to gamble (out of ten gambles) for the warning label and control condition. Black points show predicted values and 95%-CIs. Grey points show individual-level data with the size of the point corresponding to the number of participants gambling with that probability.

Following our preregistered analysis plan, we report results from the "best" generalized linear mixed model (GLMM) with binomial family and logistic link function, with by-participant random-intercepts and not further random-effects terms. Results of preregistered models with different fixed- and random-effects structures can be found on https://osf.io/8v2kh and all show the same pattern of significant results with only very small numerical differences to the results reported here.

The gambling warning label did not show a significant effect on gambling behavior, $\chi^2(1) = 2.10, p = .15$. This corresponds to an effect size (odds ratio) of OR = 1.22 [95% CI: 0.93,

1.61]. Following our a priori power analysis this suggests that any effect of the warning label is likely smaller than 6%.

Specificity showed a significant effect on gambling behaviour, $\chi^2(2) = 34.05, p < .0001$. This effect was non-monotonic, the predicted probability to gamble was .37, [95% CI: .33, .41], for low specificity gambles, .31, [.27, .34], for medium specificity gambles, and .42, [.38, .46], for high specificity gambles. The interaction between warning label and specificity was not significant, $\chi^2(2) = 1.71, p = .41$.

In line with the preregistration document, we also performed exploratory analyses to check whether four demographic covariates affected the effect of the warning labels. These analyses showed that problem gambling severity, previous year gambling frequency, and gender did not significantly alter the effect of warning labels, all $p > .05$. Only age showed a weak significant effect, $\chi^2(1) = 4.53, p = .03$, such that older participants were more likely to exhibit a negative effect of the warning label. However, without replication we recommend care when interpreting this effect.

Discussion

Results from the experiment were inconsistent with the idea that the tested warning label decreases contemporaneous gambling behavior. The study included a large sample size, ecological stimuli presented to the population of interest, incentivized payments, and a preregistered statistical analysis. Nonetheless, the warning label clearly did not achieve its desired effect of decreasing gambling levels. Instead, descriptively we even found that the warning increased the frequency with which participants gambled. The most specific bets used in this experiment were gambled on most frequently by participants (with probability 0.42), which is consistent with the empirical observation that highly-specific bets

predominate in British soccer gambling advertising (Newall et al., 2019; Newall, 2015; Newall, 2017).

The observed effect size and associated confidence interval, OR = 1.22 [0.93, 1.61], suggests that the data were non-diagnostic for distinguishing between no effect and a (potentially small) negative effect of the warning label backfiring. This suggests that the gambling warning's measured effects on self-reported gambling intentions (The Senet Group, 2017) may not translate into intended changes in gambling behavior, as suggested by the intention-behavior gap literature (Sheeran & Webb, 2016). These results are relevant given that this trade organization has also called on the rest of the industry to adopt the same campaign (Senet Group, 2018).

Though the design did mimic some aspects of real-world gambling, the study was not a perfect analogue to such situations. For one, although the incentivized payments were large compared to the baseline payment, and some bets even had large potential payouts (e.g., £15.10 for bet 9), each bet was still relatively small. Furthermore, the incentivization procedure was unlike a standard gambling scenario, in that participants did not risk their own money, and so could not experience out of pocket financial losses (Thaler & Johnson, 1990). The experiment was also unable to measure any potential distal effects of the warning label on gambling behavior, either positive or negative (such as the probability of signing up to a gambling treatment clinic). Only one responsible gambling campaign was evaluated, out of a larger number that have been run internationally (Revealing Reality, 2019). Lastly, no new potential warning labels were compared against the current warning label, which future research should explore.

The Gambling Commission's recent National Strategy to Reduce Gambling Harms states that safer gambling campaigns should preferentially be evaluated independently (Gambling

Commission, 2019). The lack of an observed positive effect on responsible gambling behavior, and the possibility that the warning label could backfire, would suggest via the Commission's stance on the precautionary principle that the campaign should be discontinued in its present form.

The "when the FUN stops, stop" gambling warning label did not achieve its aim of prompting more responsible gambling behavior in the experiment.

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