

research snapshot

summarize | mobilize



The effects of alcohol on gambling biases and decisions

What this research is about

There are some commonalities between gambling disorder and alcohol use disorder. Some studies showed that these two conditions often occur together in people seeking treatment. Previous studies also showed that alcohol can impact gambling behaviour. In other words, those who drink tend to gamble more intensely. It could be explained via the 'alcohol myopia' theory. This theory suggests that alcohol impacts attention and reduces the capacity to process information. This, in turn, can affect gambling behaviour in a more negative way.

Gambling distortions or biases can affect gambling behaviour, even before alcohol becomes a factor. One bias is called the 'gambler's fallacy'. This is when one expects another outcome after experiencing a run of the same outcome (e.g., a black after a run of red on a roulette game). The opposite is the 'hot hand effect'. This is when one expects a streak of wins or losses to continue. Gambling biases can lead people to increase their bet size after a losing streak, just so they can regain what they have lost. This is known as loss chasing. In all cases, alcohol might exacerbate these biases and intensify gambling behaviour. This research sought to experimentally test how alcohol consumption affects biases, while gambling.

What the researchers did

The researchers recruited 46 male participants from a university. All were social drinkers and recreational gamblers. The researchers used the Problem Gambling Severity Index (PGSI) to classify participants into three groups: non-problem gamblers (16 participants), low risk (19 participants), and moderate risk gamblers (11 participants).

What you need to know

This research examined how alcohol impacts certain cognitive biases that may affect gambling behaviour. The researchers recruited male participants and divided them into two groups: an experimental group that received alcohol and a control group that received a placebo. Afterwards, participants played a roulette task. The findings revealed that betting behaviour (colour choice) was affected by the gambler's fallacy, especially when longer run of the same colour occurred. But this also depended on whether participants experienced wins or losses. There was also an increase of bet size in the alcohol group when they experienced losses. This suggested that loss chasing might increase after alcohol consumption.

The researchers screened participants who came to the lab for alcohol use. They used the Lion 500 breathalyser to make sure participants were sober. Then, they divided participants randomly into two groups: placebo (22 participants) and alcohol (24 participants). The alcohol group received a vodka and tonic drink, and the placebo group tonic only. The researchers told all the participants that they would either be in the low or high alcohol dosage group. Participants completed the PGSI and the Alcohol Use Questionnaire (AUQ). They also completed the UPPS-Impulsive Behaviour Scale (UPPS-I) and the Gambling Related Cognitions Scale.

All the participants drank about 10 cups in 30 minutes. After 20 minutes, they played a roulette task. The roulette task was played on a laptop and had a roulette wheel with 18 red and black areas.

Participants had to predict a colour and place a bet. The wheel would spin and reveal the outcome. Participants played the game for 15 minutes (a total of 110 trials). The researchers recorded participants' ratings of alcohol effects before and after the task, and used a breathalyzer to estimate the participants' blood alcohol concentrations. After the experiment, the researchers asked the participants whether they thought they received alcohol or not, and how much.

What the researchers found

The researchers found that both groups of participants were prone to the gambler's fallacy on the choice of colour they would pick to bet on (i.e., they were less likely to pick a colour following a longer run of that colour). However, it depended on whether they won or lost. When participants were winning, they tended to choose the same colour. Participants tended to choose a different colour after losing streaks, and there was some evidence that this effect different between the alcohol and placebo groups.

With regard to bet size, both run length and streak length predicted bet size. Participants in both groups tended to place higher bet with longer runs of the same colour. In the placebo group, participants did not differ in their bet size following wins or losses. But when alcohol was involved, especially when participants experienced losses, they chose to increase their bets. This might reflect loss chasing. In other words, those who drank alcohol and experienced losses, were more likely to bet high, as a possible expression of chasing losses.

How you can use this research

This research could be used by service providers, clinicians, policy makers, and other researchers. Service providers could develop interventions that target alcohol use in addition to gambling. Preventions such as information and awareness building could be developed to reduce the effects of biases on gambling. Policy makers could use this information to regulate alcohol consumption in gambling venues. Future studies could replicate these findings in women, as they show greater gambling involvement in recent years.

About the researchers

Juliette Tobias-Webb, Eve H. Limbrick-Oldfield, and Luke Clark were affiliated with the Department of Psychology at the University of Cambridge in Cambridge, UK. Eve Limbrick-Oldfield and Luke Clark are now affiliated with the Centre for Gambling Research within the Department of Psychology at the University of British Columbia in Vancouver, Canada. **Silvia Vearncombe** is affiliated with Fulbourn Hospital at Cambridgeshire and Peterborough NHS Foundation Trust in Cambridge, UK. **Theodora Duka** is affiliated with the Behavioural and Clinical Neuroscience in the School of Psychology at the University of Sussex in Brighton, UK. For more information about this study, please contact Luke Clark at luke.clark@psych.ubc.ca.

Citation

Tobias-Webb, J., Limbrick-Oldfield, E. H., Vearncombe, S., Duka, T., & Clark, L. (2019). The effects of alcohol on sequential decision-making biases during gambling. *Psychopharmacology*. Advance online publication. <https://doi.org/10.1007/s00213-019-05376-z>

About Gambling Research Exchange (GREO)

Gambling Research Exchange (GREO) has partnered with the Knowledge Mobilization Unit at York University to produce Research Snapshots. GREO is an independent knowledge translation and exchange organization that aims to eliminate harm from gambling. Our goal is to support evidence-informed decision making in safer gambling policies, standards, and practices. The work we do is intended for researchers, policy makers, gambling regulators and operators, and treatment and prevention service providers.

Learn more about GREO by visiting greo.ca or emailing info@greo.ca.

