

research snapshot

summarize | mobilize



Within-session loss- and win-chasing in online gambling

What this research is about

Loss-chasing is the tendency to continue or intensify gambling after losing. Loss-chasing is considered an indicator of gambling disorder. People may chase losses between multiple gambling sessions (i.e., they return another time to recover previous losses). They may also chase losses within a single session. The researchers examined three behaviours that might suggest loss-chasing within a single session: (1) when people stop a session; (2) how much people bet in each round; and (3) how quickly they gamble.

What the researchers did

The researchers used data from the online game *Mystery Arena*. The game is operated by Gaming1. In *Mystery Arena*, people place 12 columns of dice (36 dice total) into four slots. People win points in a slot if a horizontal or diagonal line of the slot contains the same dice. The points from all four slots are added up and used to determine the amount won.

Data from 2713 people were randomly selected by Gaming1 and provided to the researchers. Data on their gambling behaviour covered a period from 2014 to March 2020. The data included the following: Player ID (a unique ID for each person); session ID (a unique ID for each session. One session included all rounds from when a person logged into the game up until they disconnected); round ID (a unique ID for each round); stake amount (the stake amount in each round); win amount (the amount won in a round); speed of starting a round (the time between when a person finished a round and started another); speed of placing the columns (how quickly people placed each of the 12 columns of dice into slots); bonus game (whether a bonus game occurred).

What you need to know

Loss-chasing is the tendency to continue or intensify gambling after losing. People who gamble may chase losses within a single session or between sessions. The researchers examined three behaviours of within-session loss-chasing. The researchers used data from the online commercial game *Mystery Arena*. Data from 2014 to March 2020 on 2713 people were randomly selected by the game operator and provided to the researchers. People were divided into low- and high-involvement groups. The researchers found that both groups were less likely to stop a session after winning. People were more likely to change their stake after losing. However, they increased their stake after winning when they made a change in stake. Therefore, people showed win-chasing instead of loss-chasing in these two behavioural aspects. After losing, both groups gambled more quickly. This showed loss-chasing. But, gambling outcomes had a smaller impact on the speed of gambling for people in the high-involvement group.

Gaming1 tracks how much time and money people spend on the platform and assigns each person to a level of gambling involvement. The levels range from 0 to 5. Higher levels represent higher levels of involvement. Gaming1 provided the researchers with data from people with levels 0, 3, 4, and 5. The researchers used this information to create two groups. The low-involvement group consisted of people who were assigned to Level 0. The high-involvement group consisted of levels 3, 4, and 5.

What the researchers found

A total of 910 people were in the low-involvement group. About 55% of people in this group were men. On average, people in this group were 37 years old. A total of 1803 people were in the high-involvement group. Most people were men (55%) and had an average age of 40 years old.

In total, people gambled 120,863 sessions and 10,370,013 rounds. People in the low-involvement group gambled an average of 5.6 sessions and 319 rounds. On average, they gambled 51 rounds in a session. They placed an average stake of 0.7 euros in each round. People in the low-involvement group won approximately 18.7% of the time. People in the high-involvement group gambled more sessions and rounds in total. They gambled an average of 64.2 sessions and 5590 rounds. On average, they gambled 82 rounds in a session. They placed an average stake of 2.2 euros in each round. The high-involvement group won approximately 21.8% of the time.

The researchers found that both groups were less likely to stop a session after winning (i.e., win-chasing) than after losing. The high-involvement group was more likely to do so than the low-involvement group, although the difference was very small. People did not change their stake often. But they were more likely to do so after a loss than a win. This was true for both groups. When they made a change in stake, people in the high-involvement group increased the stake after winning but not after losing.

Mystery Arena celebrates wins with sounds and animation, but not losses. This affects the time between ending a round and starting a new round. Thus, the researchers calculated the speed of gambling as the time between starting a new round and placing the first column of dice. Overall, the high-involvement group gambled more quickly than the low-involvement group. After losing, both groups gambled more quickly, indicating loss-chasing. But, gambling outcomes had a smaller impact on the speed of gambling for the high-involvement group.

How you can use this research

Researchers, policy makers, and gambling operators can use this information to create and evaluate tools to detect and reduce gambling disorder.

About the researchers

Zhang Chen, Roos Arwen Doekemeijer, and Frederick Verbruggen are affiliated with the Department of Experimental Psychology at Ghent University in Ghent, Belgium. **Xavier Noël** is affiliated with the Laboratoire de Psychologie Médicale et d'Addictologie in the Faculté de Médecine at the Université Libre de Bruxelles in Brussels, Belgium. For more information about this study, please contact Zhang Chen at zhang.chen@ugent.be.

Citation

Chen, Z., Doekemeijer, R. A., Noël, X. & Verbruggen, F. (2022). Winning and losing in online gambling: Effects on within-session chasing. *PLoS ONE*, 17(8), e0273359. <https://doi.org/10.1371/journal.pone.0273359>

Study funding

This study was supported by an ERC Consolidator Grant (European Union's Horizon 2020 research and innovation programme), and the Methusalem Project 01M00221 (Ghent University) awarded to Frederick Verbruggen. Zhang Chen is supported by a Postdoctoral fellowship of the Scientific Research Foundation - Flanders, Belgium. Xavier Noël is supported by the Fonds de la Recherche Scientifique, Belgium and research funding from BAGO (Belgian Association of Gaming Operators).

About Greo

Greo has partnered with the Knowledge Mobilization Unit at York University to produce Research Snapshots. Greo is an independent knowledge translation and exchange organization with almost two decades of international experience in generating, synthesizing, and mobilizing research into action across the health and wellbeing sectors. Greo helps organizations improve their strategies, policies, and practices by harnessing the power of evidence and stakeholder insight.

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

