

research snapshot

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Reframing cost-of-play information to reduce gambling spending

What this research is about

Cost-of-play information is one public health intervention recommended to help reduce gambling-related harm. In the UK, this information is given on electronic gambling machines in a format known as “return-to-player” (e.g., “this game has an average percentage payout of 90%”). But recent research suggests that this message can be more effective if it is reframed to highlight the “house-edge” (e.g., “this game keeps 10% of all money bet on average”).

A “volatility warning” may also help inform people who gamble about the high variability in gambling. An example of such warning is: “It takes millions of plays for a gambling game to tend towards its average return. A gambling game will not return a minimum value of prizes in any given period of gambling.”

This study involved an experimental design. The researchers examined the number of spins made when playing an online slot machine with real money. They wanted to understand whether people who gamble would play fewer spins on the slot machine when given: (1) house-edge information instead of return-to-player information; (2) a volatility warning; and (3) a counter showing their total amount bet.

What the researchers did

The researchers recruited US-based participants using Prolific Academic. Participants had to be 18 years of age or older and have prior experience in gambling (e.g., blackjack, craps, roulette, slots, poker).

Participants received \$2.50 for taking part in the experiment. Participants completed an initial captcha retyping task. If they did so successfully, they were given a bonus of \$3.00. Participants could then choose

What you need to know

Cost-of-play information and volatility warnings may be useful in helping to reduce gambling-related harm. Cost-of-play information can be provided on electronic gambling machines in a “return-to-player” or a “house-edge” format. This study was an experiment to examine whether people who gamble would play fewer spins on a slot machine when given: (1) house-edge information instead of return-to-player information; (2) a volatility warning; and (3) a total amount bet counter. US-based participants over 18 years of age were recruited using Prolific Academic. Participants had to have prior experience in gambling. They received \$3.00 if they completed an initial captcha retyping task. They could then choose to either keep the money or use it to play on a simulated slot machine. People who were shown house-edge information instead of return-to-player information played fewer spins on the slot machine. Similarly, people who were shown a volatility warning played fewer spins than those who were not. People with higher risk of problem gambling played more spins. The success of house-edge information and volatility warning did not differ across participants based on their problem gambling severity.

whether to use the bonus to play on a simulated slot machine. This task was designed to better approximate gambling with one’s own money.

After they completed the captcha retyping task, participants were given information about the slot machine. The information treatments (e.g., return-to-

player or house-edge information, volatility warning or no warning) were provided on an instructions page immediately before the slot machine. When playing the slot machine, participants were shown a total amount bet counter or no counter.

A total of 2,433 participants completed the experiment. On average, they took 6.5 minutes to complete the experiment and ended with a slot machine balance of \$2.21. On average, participants were 34 years old, and most were men (57%).

Participants also completed the Problem Gambling Severity Index (PGSI). Almost half (43.4%) of participants gambled recreationally. Around 27.1% were considered low-risk, 22.2% were considered moderate-risk, and 7.3% were considered to have the highest level of risk.

What the researchers found

Participants who were shown house-edge information instead of return-to-player information played fewer spins on the slot machine. On average, participants played 15.7 spins when house-edge information was shown, versus 19.3 spins when return-to-player information was shown. When given house-edge information, 19.0% of participants refused to play and kept their \$3 bonus. This was compared to 13.3% of participants who were given return-to-player information.

Similarly, participants who were shown a volatility warning played fewer spins than those who were not. When a volatility warning was shown, participants played 15.5 spins versus 19.5 spins when a volatility warning was not shown. When given a volatility warning, 19.5% of participants refused to play. This was compared to 12.7% who were not given a warning. Participants played about the same number of spins, regardless of whether they were shown the total amount bet counter or not.

Participants with higher risk of problem gambling played more spins. The success of house-edge information and volatility warning did not differ across participants based on their PGSI scores.

How you can use this research

Policymakers can use this research in support of adding house-edge information and volatility warnings on gambling machines. This may help to reduce gambling-related harm.

About the researchers

Philip W. S. Newall, Alex M. T. Russell, and Matthew J. Rockloff are affiliated with the Experimental Gambling Research Laboratory in the School of Health, Medical and Applied Sciences at CQUniversity in Australia. Philip W. S. Newall is also affiliated with the School of Psychological Science at the University of Bristol in Bristol, UK. **Christopher A. Byrne** is affiliated with the School of Psychology and Counselling at the University of Southern Queensland in Toowoomba, QLD, Australia. For more information about this study, please contact Philip W. S. Newall at philip.newall@bristol.ac.uk.

Citation

Newall, P. W. S., Byrne, C. A., Russell, A. M. T., & Rockloff, M. J. (2022). House-edge information and a volatility warning lead to reduced gambling expenditure: Potential improvements to return-to-player percentages. *Addictive Behaviors, 130*, 107308. <https://doi.org/10.1016/j.addbeh.2022.107308>

Study funding

This research was funded by a CQUniversity Commencement Grant awarded to Philip Newall.

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Information item	Value
Title	House-edge information and a volatility warning lead to reduced gambling expenditure: Potential improvements to return-to-player percentages
Article URL	https://www.sciencedirect.com/science/article/abs/pii/S0306460322000740
Authors	“Newall, Philip, W. S.”, “Byrne, Christopher A.”, “Russell, Alex M. T.”, “Rockloff, Matthew J.”
Journal	Addictive Behaviors
Year published	2022
Keywords	Public health; Electronic Gambling Machines (EGMs); nudging; messaging; gambling expenditures; game volatility; warnings; prize information; gambling behaviours
Geographic coverage	United States
Study population	A total of 2,433 US-based participants completed the experiment. Participants had to be 18 years or older and have prior experience in gambling. On average, participants were 34 years old, and most were men (57%).
DOI	https://doi.org/10.1016/j.addbeh.2022.107308
Citation	Newall, P. W. S., Byrne, C. A., Russell, A. M. T., & Rockloff, M. J. (2022). House-edge information and a volatility warning lead to reduced gambling expenditure: Potential improvements to return-to-player percentages. <i>Addictive Behaviors</i> , 130, 107308. https://doi.org/10.1016/j.addbeh.2022.107308
Sampling procedure	The researchers recruited US-based participants using Prolific Academic. Participants had to be 18 years of age or older, and have prior experience in gambling (e.g., blackjack, craps, roulette, slots, poker).
Response rate	Not available
Study design	Experimental (randomized control trial)
Snapshot written by	Kristen Morrison