What this research is about

Slot machine gambling is popular in North America. Slot machines provide immediate feedback, which makes them engaging. Slot machines can contribute to problem gambling, which can cause financial, health, and relationship harms.

When people play on a slot machine, they can experience ‘flow’. ‘Flow’ is when they are completely engaged in a task to the point that it feels effortless. Being in a ‘flow state’ can cause them to lose a sense of how much time has passed. This can have negative consequences for people who gamble, since they may spend more time and money than they had planned.

People with problem gambling can be prone to boredom and mind-wandering in their everyday life. Mind-wandering is when someone stops thinking about the task they are working on and instead thinks about unrelated thoughts. People who gamble may mind-wander in day-to-day life. However, using a slot machine may prevent them from mind-wandering or feeling bored, especially if they experience flow while using it. This study looked at flow, boredom proneness, and mind-wandering in people who gamble. The researchers tested whether slot machine players mind-wandered more during a tedious task than during a slot machine task.

What the researchers did

The researchers recruited participants from Elements Casino Branford in Ontario, Canada. They recruited 111 participants who gambled on slot machines at least once per month and who were not receiving treatment for problem gambling.

First, participants completed the following measures:

• The 21-item Depression, Anxiety, and Stress Scale (depression subscale only)
• The 8-item Boredom proneness scale – short form
• The 9-item Problem Gambling Severity Index (PGSI)
• The 15-item Mindful Attention Awareness Scale which measures mindfulness (i.e., lack of mind-wandering) in everyday life.

Next the participants completed two tasks: a slot machine task and a vigilance task. Participants used a multiline slot machine simulator where they could win up to $10. They played 20 lines per spin. If any of the lines won, the machine would play sounds and an animation to indicate the win. In the vigilance task, participants heard a series of tones and had to push a button to indicate a specific tone. The researchers looked at mood, mind-wandering, and flow state in people who gamble when playing a slot machine versus doing a tedious task. Participants experienced similar amounts of ‘flow’ and mind-wandering during the tedious task and the slot machine task. They experienced a more positive mood during the slot machine task. Additionally, participants with more severe problem gambling were more likely to mind-wander intentionally during the tedious task. This might be because they mind-wandered to escape the negative mood caused by the tedious task. Thus, people with problem gambling may use gambling or mind-wandering to cope with negative moods.
button in synchrony with the tones. Participants also had to push the button more softly for soft tones and harder for louder tones.

The slot machine task was engaging and might cause people who gamble to experience flow, while the vigilance task was likely boring. During each task, the researchers asked participants if their thoughts were ‘on-task’ (i.e., thinking about the vigilance or slot machine task) or if they were unintentionally or intentionally mind-wandering. After each task, the participants completed the Game Experience Questionnaire (GEQ). The GEQ measured the flow and mood states they experienced during each task.

What the researchers found

Based on their PGSI scores, 23% of participants had non-problem gambling while 8% had problem gambling. The remaining 69% were at low- to moderate-risk of problem gambling. Problem gambling severity was linked to depression, mindfulness problems, and boredom proneness.

Contrary to the researchers’ expectations, the participants did not experience more flow during the slot machine task than the vigilance task. They did not feel more ‘on-task’ during the slot machine task either. Participants did experience more positive mood state during the slot machine task though. This was likely because the slot machine task was more exciting than the vigilance task.

Participants who had more severe problem gambling intentionally mind-wandered more during the vigilance task. They might have done this to cope with the negative mood state they experienced due to the boring task. Meanwhile, there was no link between mind-wandering and problem gambling severity for the slot machine task. This might be because the slot machine task caused a positive mood state. Thus, participants with more severe problem gambling did not have to mind-wander to escape a negative mood state during this task.

How you can use this research

This study suggests people with problem gambling may use slot machines and mind-wandering to escape negative feelings. Researchers could continue to study the complex relationships between boredom proneness, mind-wandering, and problem gambling.

About the researchers

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Citation


Study funding

This research was funded by the Manitoba Gambling Research Program of Manitoba Liquor & Lotteries.

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.

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