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Study links slot-machine addiction to immersion in the game

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Gamblers who feel like they enter into a trance while playing slot machines are more likely to have gambling problems, according to new research from the Centre for Gambling Research at UBC.

The study, published online this month in the journal *Psychology of Addictive Behaviors*, is one of the first to rigorously test the "slot machine zone" hypothesis— the idea that slot machines are preferred by problem gamblers because the fast, continuous style of play brings about an immersed state in which players can escape from feelings of stress, boredom or low mood.

"Slot machines are one of the most popular forms of gambling worldwide, but they are also the form most consistently linked to gambling addiction," said Spencer Murch, the study's lead author and a UBC psychology graduate student. "By understanding why slot machines are the preferred game for problem gamblers through this research, we have the potential to improve gambling policy and to design slot machines that promote more responsible play."

For the study, researchers recruited two groups of participants: a group of UBC undergraduate students, many of whom were playing a slot machine for the first time, and another group of experienced slot machine gamblers.

For 30 minutes, participants played a real slot machine in the UBC casino lab. The machine had panels mounted on each side displaying

moving shapes, such as white circles. Participants were told to press a button whenever they noticed a white circle turn into a red square. After playing, they were asked to report if they felt like they were in a trance or lost track of time while playing. The researchers also measured heart rate changes during play.

In both groups, researchers found that participants who were at higher risk of problem gambling reported greater levels of immersion during slot machine play. Among the experienced slot machine gamblers, those at higher risk of problem gambling were more likely to miss the changing shapes on the side panels of the slot machine.

Luke Clark, the study's senior author and director of the Centre for Gambling Research at UBC, said the results support the idea that immersion in the game leads to reduced attention to the visual world beyond the slot machine.

"This confirms there is indeed a link between gambling addiction and the so-called slot machine zone," said Clark. "When the experienced slot machine gamblers played, we found they not only felt that they lost track of time and their surroundings, but they often failed to notice the shapes on the periphery of the machine."

He said the findings could be used to help guide the development of campaigns promoting gambling treatment resources directed at people at risk of slot machine addiction.

Researchers are now hoping to determine which features of slot machines most capture gamblers' attention and how these games can be modified.

"There is potential for slot machines to be designed in a way that promotes more responsible use by disrupting the slot machine zone

state," said Clark. "Since static signs and stickers on slot machines are unlikely to distract immersed players, the messages should be eye-catching and as close as possible to the slots' reels."

This research will be presented Wednesday, Feb. 22, at the New Horizons in Responsible Gambling Conference in Vancouver.

More information: W. Spencer Murch et al, Measuring the Slot Machine Zone With Attentional Dual Tasks and Respiratory Sinus Arrhythmia., *Psychology of Addictive Behaviors* (2017). DOI: 10.1037/adb0000251

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