

research snapshot

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“Light” and “dark” routes to enjoyment in slot machine gambling

What this research is about

Slot-machines are a very appealing type of gambling. When people gamble on a slot-machine, they get immediate feedback for wins and losses which keeps them engaged. Slot-machines also have exciting lights and sounds when wins occur. When people play on slot-machines, they are more physically excited after winning than after losing. Many people may play on slot-machines because they enjoy this feeling of excitement, which is a ‘light’ route to enjoyment.

Other people may gamble to cope with negative emotions like anxiety or depression. They may choose to play on slot-machines to escape negative emotions, instead of playing for enjoyment. Slot-machines offer continuous play, and have rewards and sounds that can capture attention. This may prevent players from thinking about negative aspects of their lives. Players can feel like they are ‘absorbed’ in play and may spend more time or money than they planned. This ‘absorbed’ feeling is called a ‘dark flow’ because it can have negative consequences for players.

The goal was to see if people who experience depression or problem gambling were more likely to experience ‘dark flow’ when playing on slot-machines. The researchers also tested if depressed or at-risk gamblers experienced excitement about gambling the same way as non-depressed, and low-risk gamblers.

What the researchers did

The researchers recruited 129 participants (76 male, 53 female) from Casino Brantford in Brantford, Ontario, Canada. Participants were at least 19 years old, played on slot-machines at least once a month, and were not in treatment for problem gambling.

What you need to know

Slot machines are a very appealing type of gambling. Some people may enjoy slot machines because of the excitement they receive from winning. This is called a ‘light’ route to enjoyment. However, others may enjoy them because they offer an escape from their negative emotions, such as stress or depression. These players may become absorbed into slots play in a state known as a ‘dark flow’. This study measured the ‘dark’ vs. ‘light’ routes to enjoyment among slots players gambling on a slot-machine simulator. It found that people who had more gambling problems or depressive symptoms, were more likely to experience ‘dark flow’ while gambling.

The participants filled out a survey that included questions from the Problem Gambling Severity Index (PGSI) and the 21-item Depression, Anxiety and Stress Scale (DASS). Then they played 301 rounds on a slot-machine simulator. The simulator was modelled after real slot-machines and had 5-reels for multi-line play. The simulator had flashing lights and played a jingle if the participant won, but gave no feedback for losses. The researchers programmed the simulator to give every participant the same number of wins and losses.

The researchers used the following measures to understand the emotions, excitement level, and route to enjoyment (i.e., ‘light’ vs. ‘dark’) that the participants had while playing:

Post-Reinforcement Pauses (PRPs) and Force PRPs are the amount of time between knowing an outcome (i.e., win or loss) and starting the next spin. Longer PRPs typically occur after wins. Likewise,

people usually push the button to start the next spin with more force after they win. Both PRPs and button-pressing force indicate the player's level of excitement and enjoyment of play.

Game Experiences Questionnaire (GEQ)

Participants reported their level of positive feelings after playing on the simulator and rated statements related to 'dark flow'. The statements included, "I felt completely absorbed" and "I forgot everything around me". The researchers predicted that people with problem gambling or depression would be more likely to enjoy gambling through 'dark flow'.

What the researchers found

Participants who reported more positive emotions had longer PRPs during play. In particular, the bigger the win the longer they paused to internally celebrate. They also pressed the spin button harder following wins, pressing even harder for bigger (more exciting) wins. Participants who reported fewer positive emotions did not react to wins as strongly. There were no associations between PGSI scores and PRPs, or the force with which participants pushed the button. Also, neither PRPs nor force measures were related to depressive symptoms. Therefore, both PRP length and force indicated a 'light' route to enjoy playing. Playing slots for excitement might not be a risk factor for problem gambling.

In contrast, the experience of 'dark flow' during play was associated with both problem gambling and depression. Participants who had more severe problem gambling and depression reported greater experiences of 'dark flow' during gambling. They also reported more positive emotions after play. It appeared that the dark flow provided an escape from negative thoughts and feelings, leading to more positive emotions. But it was a dark route to enjoyment of gambling that could result in severe gambling problems.

How you can use this research

This research shows that the way people enjoy slot-machine gambling may be related to their risk level for gambling problems. People who experience more 'dark flow' during play are higher risk of experiencing

gambling problems. Therefore, giving information about 'dark flow' to gamblers could help them to recognize it in their own play. Additionally, questions about experiencing 'dark flow' could be used to screen gamblers for risk of problem gambling.

About the researchers

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Citation

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