Does the frequency of slot machine gaming (i.e., games per minute) impact time spent gambling, excitement, and desire to keep gambling? Do the effects of game frequency differ between pathological and non-problem gamblers?

The design of slot machines, including the frequency of rewards and timing of games, can contribute to reinforcement of gambling behaviour. However, slot machine design may differently affect pathological and non-problem gamblers. The present study compared whether slot machine game and reward frequency predicted gambling behaviour and emotional responses, and whether pathological gamblers (PGs) are differently affected by slot machines characteristics than non-problem gamblers.

PGs would be more excited, express more desire to keep playing, and would spend longer time gambling compared to non-problem gamblers. Slot machines with lower game and reward frequencies would lead to less excitement, desire to keep playing, and less time spent playing.

Participants were 15 PGs (67% male; average age = 44 years) and 15 non-problem gamblers (53% male, average age = 38 years).

PGs were recruited through a gambling treatment centre in Denmark; non-problem gamblers were recruited through local newspaper advertisements. Upon entering the lab, participants were randomly assigned to either gamble on a slot machine with a 2-second game frequency (i.e., 2 seconds of reel spin between games) or a slot machine with a 3-second game frequency. The slot machines were pre-loaded with credits, and participants were instructed to gamble for as long as they liked. When the participant stopped gambling (or after a maximum of 60 minutes) they were interviewed about their gambling experience, including desire to keep playing and feelings of excitement. Participants then gambled on the other slot machine for up to 60 minutes, followed by another interview about their experience.

PG status was determined using a self-report measure, the South Oaks Gambling Screen (SOGS). Participants were asked to rate different aspects of their gambling experience using a ten point scale, ranging from 1 (least) to 10 (most). Excitement was assessed via the question: “How exciting was it to play on this machine?” Desire to gamble was assessed via the question: “How much would you like to play on this machine gain?” Payback percentage (gains vs. losses) was recorded by the slot machines and retrieved after participants completed the experiment. Sessions were video recorded, so the reward frequency could be counted.

Hypotheses were partially supported. In the 2-second game condition, PGs reported more excitement and more desire to play than did non-problem gamblers. There was no such difference in the 3-second game condition. PGs, but non non-problem gamblers, reported less desire to play the 3-second game than the 2-second game. In both game conditions, PGs spent more time gambling than did non-problem gamblers. However, in the 2-second game, non-problem gamblers stopped gambling more quickly than PGs, whereas this effect did not occur in the 3-second game.

Slot machine payback percentage and reward frequency were not standardized between conditions, but instead were controlled within the statistical analyses. The maximum time limit of 60 minutes produced a ceiling effect for PGs, such that they reached the time limit before deciding to stop gambling. The slot machine setting was in a lab, so results cannot be generalized to a casino environment.

More rapid slot machine games appear to increase excitement, desire to play, and gambling time in PGs.
Harm reduction approaches to problem gambling may require that slot machines provide slower play in order to reduce negative effects for PGs.

**KEYWORDS:** pathological gambling; clinical psychology; neuroimaging; addiction; addictive behaviour; gambling

**URL:** http://dx.doi.org/10.1080/14459795.2010.502181