Medical Xpress

Study finds siblings of problem gamblers also impulsive, prone to risk-taking

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Biological siblings of people with gambling disorder also display markers of increased impulsivity and risk-taking, according to a new UBC psychology study. The findings, published today in

Neuropsychopharmacology, suggest people with gambling disorder—a psychiatric term for serious gambling problems—may have pre-existing genetic vulnerabilities to the illness.

This study is the first to investigate vulnerabilities to gambling disorder by looking at siblings. The disorder, which is associated with severe negative consequences including depression, bankruptcy and family breakup, affects up to three per cent of the Canadian population.

"Impulsivity, risky decision-making and altered brain reward processing are observed in people with gambling disorder," said lead author Eve Limbrick-Oldfield, a postdoctoral research fellow at the UBC department of psychology and Centre for Gambling Research. "We wanted to find out whether these markers represent pre-existing vulnerabilities or are a consequence of how gambling changes the brain. To test this, we studied gamblers' siblings since they share similar genetic material and environment."

The researchers worked with 20 people with gambling disorder, 16 siblings and a control group of healthy volunteers. The participants were asked to complete questionnaires and cognitive computer tests that measured their impulsivity and risk-taking behaviour. They also underwent brain scanning in an MRI while playing a slot machine task, to measure brain responses to rewards and wins.

The researchers found that both the problem gamblers and the siblings reported increased risk-taking and impulsivity compared to the control group. For example, problem gamblers and their siblings were more likely to act impulsively when experiencing negative emotions, and placed larger bets when making a risky choice.

Interestingly, the siblings showed no alterations in the brain response to rewards compared to the control group, leaving the possibility that the

brain activity found in problem gamblers may have developed as a result of gambling experience.

The researchers note that siblings of problem gamblers were particularly difficult to recruit for the study because family relationships are often strained as a consequence of gambling problems.

"Since our study had a relatively small sample size, we hope it will encourage other researchers to replicate it so we could learn more about how genetics play a role in the gambling disorder," said study co-author Dr. Henrietta Bowden-Jones, director of the United Kingdom's National Problem Gambling Clinic, from where the group with gambling disorder were recruited.

Bowden-Jones said the findings also highlight the potential for public awareness and gambling prevention.

More information: Eve H. Limbrick-Oldfield et al, Neural and neurocognitive markers of vulnerability to gambling disorder: a study of unaffected siblings, *Neuropsychopharmacology* (2019). DOI: 10.1038/s41386-019-0534-1

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