

Acute stress response in people experiencing problem gambling

What this research is about

People experiencing problem gambling often have greater perceptions of stress and negative emotions. Acute (i.e., intense, short-term) physiological stress is handled by two systems in the body: the sympathetic-adrenal-medullary (SAM) and hypothalamic-pituitary-adrenal (HPA) axes. Each system releases different chemicals and responds in its own way to stress.

The purpose of this study was to examine acute stress responses in people experiencing problem gambling. Specifically, this study examined changes to salivary cortisol (sC) released from the HPA axis and salivary alpha-amylase (sAA) released from the SAM axis, as well as self-reported mood, after experiencing a stressor. The overall stress response was compared between people experiencing and not experiencing problem gambling. The researchers also tested the links between gambling urges, impulsivity, and the acute stress response. Impulsivity refers to a tendency to act rashly without thinking of potential negative consequences.

What the researchers did

The researchers recruited adults from the Greater Hamilton community in Ontario, Canada. Participants were between 18 and 75 years old and did not have a current or past psychotic disorder. A total of 21 participants had a Problem Gambling Severity Index (PGSI) score of at least 5 points, indicating problem gambling. The other 21 participants in the healthy control group were matched to those experiencing problem gambling in terms of gender, age, ethnicity, marital status, employment status, and education. They scored less than 2 points on the PGSI and did not have a substance use disorder.

What you need to know

The purpose of this study was to examine the acute stress response in people experiencing problem gambling. Specifically, this study compared stress-induced changes to salivary cortisol (sC) and salivary alpha-amylase (sAA) levels, as well as self-reported mood, between people who experience and do not experience problem gambling. The researchers also tested the links between gambling urges, impulsivity, and the acute stress response.

Overall, the researchers found physiological dysregulation among people experiencing problem gambling. sC reactions were blunted in those experiencing problem gambling in response to stress. However, there were no differences with respect to sAA activity. In both groups, self-reported mood disturbances increased in response to stress, especially for people experiencing problem gambling. While people experiencing problem gambling had stronger urges to gamble and higher levels of impulsivity, gambling urges and impulsivity were not linked to the acute stress response. This suggests that gambling urges and impulsivity contribute to problem gambling through separate mechanisms from the stress response.

The study took place over two days. On the first day, participants completed the Mini International Neuro-psychiatric Interview (MINI). They also completed the following self-report measures:

- Barratt Impulsiveness Scale (BIS-11).
- Beck Depression Inventory (BDI).
- Gambling Urge Scale (GUS).
- Problem Gambling Severity Index (PGSI).

- Profile of Mood States (POMS).
- UPPS Impulsive Behaviour Scale (UPPS-P).

On the second day, participants underwent an acute stress protocol (TSST). They were led to a room with a panel of researchers and asked to prepare a five-minute mock speech for a research assistant position. They were told their speech would be recorded for later analysis. Afterwards, participants performed mental math in front of the panel.

Saliva samples were collected when participants were completing the POMS and GUS (baseline) and again immediately after the TSST and at 20 and 60 minutes after the TSST. The saliva samples were used to assess sC and sAA levels before and after an acute stressor.

What the researchers found

Overall, the researchers found physiological dysregulation among people experiencing problem gambling. sC reactions were blunted in those experiencing problem gambling compared to the healthy controls. However, there were no differences with respect to sAA activity between the two groups.

While participants experiencing problem gambling reported stronger urges to gamble and higher levels of impulsivity, gambling urges and impulsivity were not linked to the acute stress response. Impulsivity and gambling urges were interrelated with each other; participants with higher levels of impulsivity had stronger urges to gamble.

In both groups, self-reported mood disturbances increased in response to acute stress. Anger responses were stronger for participants experiencing problem gambling, who also reported greater depression symptoms. Moreover, participants who reported greater mood disturbances after encountering an acute stressor also reported greater depression symptoms. This finding suggests that mild or moderate co-occurring mood disorders such as depression can add to increased acute stress perceptions among people experiencing problem gambling.

How you can use this research

This research can inform stress management programs for people experiencing problem gambling.

About the researchers

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Citation

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