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Euston, David; Gainsbury, Sally; Hodgins, David; Johnson, Mark;
Kairouz, Sylvia; Kim, Hyoun S. (Andrew)...

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Mechanisms of Action in Disordered Gambling: Predictors of Chasing the Loss and Clinical Applications

Igor Yakovenko, Ph.D.

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Conflict of Interest

- No potential conflicts of interest to declare
- Study funded by the Alberta Gambling Research Institute
- EGMs provided by the Alberta Gaming and Liquor Commission
- Neither AGRI nor AGLC had any involvement in the research design, methodology, conduct, analysis or write-up



Goals

- Explore chasing behavior and its psychological correlates
- Demonstrate the utility of assessing chasing behavior in clinical settings
- Discuss limitations of in-lab gambling simulations



Chasing in gambling

- Hallmark feature and diagnostic criterion of disordered gambling
- Two types of chasing: between- and within-session
- Theories of chasing propose neurobiological, behavioural, and cognitive underlying mechanisms



Rationale

- Specific conditions of chasing are minimally researched
- Little empirical confirmation of chasing as a disordered gambling criterion
- Existing studies suffer from a number of methodological drawbacks



Study goals

- Outline correlates of chasing behaviour
- Look for differences in chasing between social and disordered gamblers
- Validate chasing as a diagnostic criterion of disordered gambling



Methodology

- 120 gamblers recruited in the community via advertising
- Two groups of adult gamblers: disordered and social
- Procedure: gamble on a slot machine with predetermined outcomes
 - Environment enhanced to approximate a casino
- Chasing: persistence in play in the face of repeated losses; opportunity to come back for another gaming session
- Procedure designed to optimally elicit chasing:
 - Participants told that compensation depends on final credits
 - Moderate winnings followed by repeated losses



SANDS of SPLENDOR

| | | | | | | |
|---|--|--|--|--|--|---|
| 5 | | | | | | 5 |
| 5 | | | | | | 5 |
| 5 | | | | | | 5 |

CREDIT: 200 BET: 100 PAID: 45

BET MAX PAYTABLE LINES: 20 LINE BET: 5 SPIN





Measured predictors of chasing

- Dissociation (trait and state)
- Emotional vulnerability (history of trauma, mental health problems, coping mechanisms)
- Physiological reactivity and arousal (skin conductance and heart rate)
- Cognitive distortions
- Craving for gambling and substances (alcohol, tobacco, and cannabis)
- Impulsivity
- Motivations for gambling



Results

- Increased chasing was associated with greater dissociation, problem gambling severity, emotional vulnerability, cognitive distortions and impulsivity
- The two types of chasing were moderately correlated
- Social gamblers chased less than disordered gamblers
- Substance users experienced increased craving following gambling on an EGM



Results

- Relative to other variables, lifetime disordered gambling status and losing track of time appeared to be most important for disordered gamblers
- For social gamblers, the two types of chasing were most predictive of one another
- Self-reported chasing behavior only moderately associated with exhibited chasing behavior



What does it all mean?

- Chasing is not an exclusive feature of disordered gambling
- Some gamblers who chase within sessions also chase between sessions
- Increased chasing is associated with an overall increase of pathology markers such as emotional vulnerability, greater gambling problems, cognitive distortions and impulsivity
- Self-report may not be a good indicator of actual behavior for chasing



CAN WE USE IT CLINICALLY?



Rationale

- Chasing may be a marker for increased pathology
- Gambling problems may be more common than expected in individuals with schizophrenia spectrum disorders
- Opportunity to evaluate clinical utility of chasing in a clinical population vulnerable to disordered gambling



Goal

- Explore the correlates of increased chasing behavior and gambling frequency in a sample of individuals with schizophrenia-spectrum disorders



- 336 adult outpatients, diagnosed with schizophrenia or schizoaffective disorder
- Four groups: non-gamblers (n=64), infrequent gamblers (n=136), frequent gamblers no chasing (n=74), frequent gamblers chasing (n=62)



Examined correlates

- Total days gambled
- Most dollars ever gambled in one day
- Age at onset of gambling
- Favorite type of gambling
- Reasons for gambling
- Family history of gambling
- PANSS score
- ASI alcohol and drugs
- Social engagement



Results





What does it all mean?

- In a clinical sample, chasing behavior was related to a number of known proxies of disordered gambling, above and beyond simply gambling more frequently
- Chasing related to increased likelihood of drug and alcohol problems
- Was not related to co-morbid schizophrenia symptoms
- Can we use chasing as a short-hand clinical screener?



**DOES GAMBLING IN THE LAB
APPROXIMATE THE REAL WORLD?**



Questions

- How natural did the experience feel?
- How random did the outcomes of each spin feel while playing?
- Was the experience impacted in any way by the fact that you were not wagering your own money? If so, how would you have played differently if it was your own money?



Results

- Natural? Somewhat ($M = 5.06$, $SD = 2.60$)
- Random? Somewhat ($M = 4.81$, $SD = 2.74$)
- No differences between groups
- Different if using own money? Probably
 - Majority responded “yes”
 - Some participants would use more “strategy” regarding bet size, typically make bigger bets
 - Experimenter’s money made some more likely to chase while others less likely



Implications

- In-lab gambling may not approximate well real-world gambling
- Solutions?
 - Negotiate access to in-vivo environments with gaming venues
 - Studies on specific environmental factors that increase ecological validity



PUTTING IT ALL TOGETHER



Summary

- Chasing is a fundamental feature of all gambling, but disordered gamblers chase more
- The DSM definition of chasing may need to be expanded
- Increased chasing is associated with increased risk for gambling problems and co-morbid disorders such as depression, anxiety, and drug use
- Gambling simulations in a lab may not properly capture real-world conditions



Thank you

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