Hunger and gambling-related craving interact to heighten persistent play among problem gamblers

STARVING TO GAMBLE

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RESPONSIBLE GAMBLING

- Pre-commitment Measures
- Pop-ups
- Self-exclusion
- Cool-off periods
BARRIERS TO RESPONSIBLE GAMBLING

• Utilization
  – Tools are for “problem gamblers”

• Prevention not intervention
  – Persistence
Addiction Monitor

Crave It!
Need It
Want It
Like It
CRAVING

• The conscious experience of an urge or desire to engage in an addictive behavior

• Craving is considered the main reason for relapse among problem gamblers

• Craving increases the willingness to take risks
STUDY 1 - CRAVING AND PERSISTENCE

• Young & Wohl, 2009
  – Examine the influence of craving on gambling behaviour

• 45 gamblers
  – 15 non-problem, 16 low-risk, 15 high-risk

• Procedure
  – Administer the Gambling and Craving Scale, Given $5 (20 credits) to play on VR slots
  – After 50 spins all players have 60 credits, then persistence (all spins are losses)
RESULTS

• Craving to gamble significantly predicted gambling persistence!
CRAVING AND GAMBLING

• Craving will not be part of the DSM-V definition, yet it is considered a central motivating force behind gambling (e.g., Kushner et al., 2007, 2008; Sharpe, 2002)

• Craving does not always lead to gambling, and may be but one of many factors (Blaszczynski & Nower, 2002; Ledgerwood & Petry, 2006)

• Why does craving then lead to problem gambling behaviour?
WHY DOES CRAVING LEAD TO IRRESPONSIBLE PLAY?

- It influences executive cognitive functioning
EXECUTIVE COGNITIVE FUNCTIONING (ECF)

• Various complex cognitive processes, implicated in successful goal-directed behaviour, co-ordination and/or control
  - Planning, abstract reasoning, anticipation of consequences, cognitive flexibility, and response modulation and inhibition (Stuss & Benson, 1984)

• If ECF fails, behaviour can become disjointed, disinhibited and uncontrolled
FACTORS INFLUENCING ECF

• Exercise improves children’s ECF (Davis et al., 2007)

• Stress negatively affects ECF (e.g., de Kloet, Joëls & Holsboer, 2005)

• Perhaps craving is a possible antecedent of poor ECF
  - The intense urge or desire to engage in an addictive behaviour may impair a person’s ability to control their executive functions
CRAVING AND ECF

- Craving may impair a person’s ability to control their executive functions

- Addicts preform **poorly on addiction-specific Stroop tasks** - possibly due to cravings (Boyer & Dickerson, 2003; McCusker & Gettings, 1997; Ashrafioun and Rosenberg, 2011)

- Problem gamblers **perform worse on the Iowa Gambling Task** – possibly due to cravings (Goudriaan et al., 2005)
STUDY 2 - ECF, CRAVING AND GAMBLING

• Establish an association between craving and ECF among gamblers

• Gamblers ($N=25$) were allowed to gamble until they were satiated
  - Craving and ECF was assessed (using the IGT)
Craving to play was a significant predictor of poor ECF!

- $\beta = -12.79$, $t(23) = -2.19$, $p = .04$
DISCUSSION

• Preliminary evidence that craving may undermine self-control

• Doing research to verify and determine causation
  – Initial results look promising

• If we can undermine craving, we may have a very powerful RG tool
GHRELIN (GHREL·IN) NOUN \ 'GREL-ən\ 

• 28 amino-acid peptide hormone

• The 
  hunger hormone
  - Correlates strongly with subjective measures of hunger

• Increases food intake and fat accumulation fat

• Endogenous to the GHS-R
  - Concentration of GHS-R in VTA
GHRELIN + REWARD

• VTA ➔ Reward seeking behaviour

• Ghrelin ➔ Intake of addictive substances
  - Methamphetamine, smoking, alcohol
  - Correlates with craving for those substances
GHRELIN AND GAMBLING

• Increased ghrelin is associated with increased financial risk-taking
  – Makes sense from an evolutionary perspective

• Perhaps ghrelin affects gambling behaviour?
  – Addiction Transfer
HUNGER AND GAMBLING

• Hunger has been shown to increase illusions of control and positive outcome expectancies (Biner, Huffman, Curran & Long, 1998).

• We aimed to examine the affect that hunger would have on gambling persistence.
METHODOLOGY

- 51 At-risk to Problem gamblers

- Instructed **not to eat** before the experiment

- Half of the participants **fed a high caloric muffin**
  - Other half promised muffin at end of study

- Ghrelin, hunger and craving to gamble assessed
  - Ghrelin data still needs to be Assayed
Perhaps we should suggest gamblers eat before entering a casino
- “Eat Before Play”
- “Fill your mouth before you fill your pockets”

Food on the casino floor is a good idea
- Alcohol is allowed, but not cookies (or apples)

If gamblers continuously gamble without eating, suggest an eating break
- Pop-ups
- “Have a muffin on us”
Responsible gambling guideline that works as an intervention.
- At-risk and problem gamblers
FUTURE DIRECTION

• Replicate & Validate
  – This was a preliminary study

• Ghrelin, ECF and Craving

Craving $\rightarrow$ ECF $\rightarrow$ Problematic Gambling
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