2019-03

Alberta Gambling Research Institute Conference 2019: Blurred Lines in Gambling Research

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Alberta Gambling Research Institute

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VIDEO GAMING RESEARCH: BLURRED LINES AND SHIFTING LANDSCAPES
Disclosure

• Funded by the Alberta Gambling Research Institute
Video game history (?)

• Availability
• Accessibility
• Connectivity
• Ubiquity
Video games – Availability

- First commercially available games emerged in 1970s
- These games available on arcade games, gaming consoles, and home computers
- Arcade games more prominent
Video games - Accessibility

- By the 1980s-1990s game consoles and games on home computers improved in quality
- Some portable games were introduced
- Arcade games continued to offer a higher quality game experience
Video games - Connectivity

• Online-type games have been available since the 1970s but there was little demand without in-home internet access

• Some early online games involved directly connecting to another player via modem

• Later, game players could connect to dedicated servers which hosted many players at once

• Early online games were available on computers and later on consoles and mobile devices
Video games - Ubiquity

- Video games have expanded onto mobile phones and tablets
- Games can be readily downloaded and played
- Many games are offered free but involve in-app purchases
- Games are also embedded in social media
Video games – Next stage?

• "The landscape has changed beyond recognition in the past decade" (Newman, 2013)
• Innovations continue to emerge
  • eSports
  • Streaming
  • Monetization & loot boxes
  • Freemium play
  • Virtual reality and augmented reality
Video games – What are they?

• Elements of a video game (adapted from King & Delfabbro, 2019)
  • Digital
  • Interactive
  • Manipulation of interface
  • Outcome (i.e. win/lose)

• Essential element of gambling: wagering something of value on an uncertain outcome to gain something of value (?)

• But what is the essential element of video games? That they are digital? What sets video gaming apart from non-digital gaming?
Adapted from Wardle (2019)
As cited in Wardle (2019)

- What are the contexts in which games are produced and consumed?
- This applies not only to content and development, but the platforms by which games are played.
Problematic video game play

• First reports of “addiction” in the 1980s
  • Based on 1) “excessive” play, and 2) harms

• Assessment borrowed from gaming’s “cousin” problem gambling and “second-cousin” substance use disorder

• Criteria for Internet Gaming Disorder introduced in DSM-5 (2013)
The problem with assessing disordered gaming

• Assessment of a “disorder” tends to be categorical
• DSM is largely categorical, despite attempts at a more dimensional taxonomy (Sanders, 2013)
• We have in effect delineated Gambling Disorder from Internet Gaming Disorder, without being able to delineate Gambling from Gaming
• The cart was placed before the horse
Gambling vs Gaming

• We first need to describe the dimensions between gaming, gambling, and video gaming, THEN we can describe (or delineate?) disordered gaming, gambling, and video gaming.

• Browne (2019, personal communication) identified some ways we can start describing these dimensions.

• King et al. (2015) described some distinctions:
  • Gaming: interactivity, skill-based play, and contextual indicators of progression.
  • Gambling: betting and wagering, mainly chance-based outcomes, and monetization risk and payout.
Something to think about

• Are there examples of “addiction”, “disordered use”, or “harms” caused by non-digital, non-gambling games?
  • Can you be addicted to chess? Can a game of monopoly cause harm?

• What is it that makes gambling and video games different?
  • *High-frequency biological reward schedules, including variable-ratio reward schedules*
  • Immersiveness
  • Accessibility
  • In some cases, a Marketplace that produces its own reward schedule

• Consequently, there are harms
Internet Gaming Disorder

- In Section III, as a condition that requires further study
- Non-Gambling gaming
- Criteria (5 or more of following in past 12 months)
  - Preoccupation with internet games
  - Withdrawal symptoms when internet gaming taken away
  - Unsuccessful attempts to control participation
  - Increased tolerance
  - Continued excessive use despite knowledge of psychosocial problems
  - Deceived others regarding amount of internet gaming
  - Loss of interest in hobbies and entertainment as a result of internet games
  - Jeopardized relationship and opportunities because of participation in internet games
  - Use as escape or relief of negative mood
Problems with concept of Internet Gaming Disorder

- How critical is internet/connectivity in disordered gaming?
  - What is an “Internet Game”?
    - Live connection with other players or a host? Indirect or delayed connection with other players (i.e. Words with Friends)? Does connection matter at all?
  - Is the problem disordered use of 1) device, 2) internet, or 3) gaming?
  - Our research shows a strong correlation between online play and hours of play (.61) but only a weak correlation between online play and disordered gaming (.11)

- Non-gambling gaming
  - Categorical, “carve nature at its joints” (Plato)

- Withdrawal
  - Kaptis, King, Delfabbro, 2016
Problems with concept of Internet Gaming Disorder

• Tolerance
  • “Residual criteria of substance use disorders”? (Kardefelt-Winther, 2015)
  • What is the gamer tolerating?

• Loss of interest in other (recreational) activities
  • But gaming IS a recreational activity. Is it disordered if it supplants another activity?

• Escape negative mood
  • Is escaping negative mood through recreational games unhealthy?
  • Our research showed over a third (.34) of all players played games to escape negative mood
Video game play in Canada

• More than half of Canadian adults regularly play video games, with 48% of those being women (ESAC, 2013)
• Turner et al. (2012) assessed 2,832 adolescents aged 12 to 19 from a central-Canadian province using an in-class survey, where 9.4% were classified with problematic gaming behaviour
Video game play in Canada

- In a sample of 1,238 Canadian adults (representative by region) 44% reported regular video game play.
- Females accounted for 39% of players.
- Numerous genres (16) were identified, with the most commonly played being Facebook/Browser games.
- About half played primarily online.
- 3.1% met IGD criteria

Sanders, Williams, & Damgaard (2017)
Video game play in Canada

• Predictors of IGD:
  • engaging in primarily *online* video game play
  • being employed less than full-time
  • early age of onset of video game play
  • being male
  • lower levels of education
  • esteem or competitive motives

Sanders, Williams, & Damgaard (2017)
Research of the relationship between problem gambling and gaming

- Early research identified structural and behavioral similarities
- Shared characteristics between problematic players of both activities (male, impulsivity, ADHD) (Walther, Morgenstern, & Hanewinkel, 2012)
- Distinctions between problematic players of both activities (impulsivity vs compulsivity, age, conscientiousness & extraversion) (Choi et al., 2014; Müller et al., 2014)
- Video game players increased perception of control in over chance-based gambling (King, Ejova, & Delfabbro, 2012)
- Relationship between problem gambling and problem gaming tenuous (Delfabbro et al., 2009; Forrest, King, & Delfabbro, 2016)
- Casual engagement in both activities common (McBride & Derevensky, 2016)
- Video game addiction negatively associated with offline gambling, online gambling, and problem gambling (Macey & Hamari, 2018)
Purpose

- Over-involvement in problem gambling (PG) and problem videogaming (PVG) share demographic, mental health, and personality characteristics.
- This research aims to better understand the similarities and differences between PG and PVG.
- Additionally, this study will evaluate another group, dual PG and PVG players, in comparison to PG or PVG.
Procedure

• Participants were recruited from a Canada-wide online panel. Online internet panels consist of thousands of individuals who are recruited to respond to survey requests for which they receive compensation (Göritz, 2007).

• To recruit participants, an e-mail solicitation was sent to online panelists 18 years and older with the question “Do you regularly gamble and/or play video games?”
Measures

- Demographics
- Gambling/game-play characteristics
- Problem and Pathological Gambling Measure (PPGM)
- Behavioural Addiction Measure – Video Games (BAM-VG)
- DSM-5 criteria for various disorders
- UPPS-P (impulsivity)
- Self-report statements of problems in related activities (sex/pornography, social media, other unrelated internet use)
Problem and Pathological Gambling Measure (PPGM)

- Assesses domains of 1) impaired control, and 2) significant negative consequences deriving from impaired control
- Comprehensively assesses range of potential harms deriving from gambling, and minimizes false positives and false negatives
  - requiring monthly or more gambling to be designated as a problem gambler
  - designating people with subclinical levels of symptomatology as problem gamblers if their expenditure and frequency of gambling is equivalent to unambiguously identified problem gamblers
- Cronbach alpha = .76 - .81 and one month test-retest reliability ($r = .78$) equivalent to CPGI, SOGS, and operationalizations of DSM criteria
- PPGM has better overall classification accuracy (kappa = .96) compared to either the CPGI (kappa = .56), DSM-IV (kappa = .68), or SOGS (kappa = .62) when compared to clinical assessment (Williams & Volberg, 2014).
Behavioural Addiction Measure – Video Games (BAM-VG)

- Developed based on PPGM (Sanders & Williams, 2016)
- Good internal consistency (Cronbach’s alpha = 0.87) and retest reliability (tau b [462] = 0.73, p < 0.01)
- Criterion-related validity and construct validity demonstrated by significant correlations with: time spent playing, self-identification of video game problems, and scores on other instruments designed to assess video game addiction (DSM-5 IGD, IGD-20)
- Principal component analysis identified two components underlying the BAM-VG that roughly correspond with impaired control and significant negative consequences deriving from this impaired control
DSM-5 criteria

- Substance Use Disorder
- Major Depressive Disorder
- Generalized Anxiety Disorder
- Posttraumatic Stress Disorder
- Social Anxiety Disorder
- Panic Disorder
- Antisocial Personality Disorder
UPPS-P

• 20 item scale assessing impulsivity
• Good internal consistency (Cronbach $\alpha$ ranged from .70 to .84 for the various subscales) and strong retest reliability (.84 to .92) (Billieux, et al., 2012)
• Factorial validity suggests a hierarchical model with 2 higher order factors, or distinct 5 facets (Billieux, et al., 2012)
• External validity established with correlations with AUDIT, STAI, and BDI (Billieux, et al., 2012)
• The sum of the UPPS-P was used for analysis
Research questions

1. What is the extent of dual involvement in gambling and video game activities as well as dual problem gambling and problem video gaming?

2. What variables distinguish the four groups (NP, PG, PVG, PG/PVG)?
Results

• 4,006 respondents completed the survey
• 3,942 were retained after cleaning (mean age 43.6, 50.5% female)
• The majority were married or cohabiting (n = 2,303, 58.9%)
• Educated sample with majority completing postsecondary program (n = 2,121, 54.2%)
• Median household income between $60,000-$69,999
Research question #1

What is the extent of dual involvement in gambling and video game activities as well as dual problem gambling and problem video gaming?
Dual involvement

• 78.5% of video game players gambled, and 70.7% of gamblers played video games, in the past year. More participants were involved in both activities than not ($\chi^2(3,870) = 131.730, p = <.001$)

• There was a significant but weak correlation between overall gambling frequency and overall video game frequency ($\tau-b = .11, p < .05$), as well as between overall gambling frequency and hours playing video games ($\tau-b = .09, p < .05$).
Video gaming and types of gambling

• The strongest relationship was between frequency of video gaming and frequency of internet gambling ($\tau_b = .23, p < .05$).

• The relationship was similarly weak but significant for casino table games ($\tau_b = .10, p < .05$), sports betting ($\tau_b = .09, p < .05$), lottery tickets ($\tau_b = .08, p < .05$), and scratch tickets ($\tau_b = .06, p < .05$).

• There was no significant correlation between video game frequency and frequency of other types of gambling, including electronic gambling machines ($\tau_b = .04, p > .05$).
Problem gambling/gaming

- Among the problem gamblers, 10.5% were also problem video game players
- Among the problem video game players 24.1% were also problem gamblers.
Research question #2

What variables distinguish the four groups?
<table>
<thead>
<tr>
<th>Variable</th>
<th>Non-Problem Group (n = 3,322)</th>
<th>Problem Gamblers (PG) (n = 417)</th>
<th>Problem Video-Gamers (PVG) (n = 154)</th>
<th>Dual PG/PVG (n = 49)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean, SD)</td>
<td>44 (16)</td>
<td>42 (14)</td>
<td>36 (15)</td>
<td>38 (14)</td>
</tr>
<tr>
<td>Male (percentage)</td>
<td>48.6%</td>
<td>54.4%</td>
<td>51.9%</td>
<td>56.3%</td>
</tr>
<tr>
<td>Relationship status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never married</td>
<td>27.6%</td>
<td>32.1%</td>
<td>48.7%</td>
<td>38.8%</td>
</tr>
<tr>
<td>Married</td>
<td>41.8%</td>
<td>37.9%</td>
<td>26.0%</td>
<td>30.6%</td>
</tr>
<tr>
<td>Co-habiting</td>
<td>18.7%</td>
<td>15.2%</td>
<td>17.5%</td>
<td>22.4%</td>
</tr>
<tr>
<td>Previously married</td>
<td>11.9%</td>
<td>14.7%</td>
<td>7.8%</td>
<td>8.2%</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not complete high school</td>
<td>3.6%</td>
<td>4.1%</td>
<td>2.6%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Completed high school</td>
<td>19.8%</td>
<td>22.3%</td>
<td>20.8%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Some university/college</td>
<td>21.1%</td>
<td>24.7%</td>
<td>36.4%</td>
<td>20.8%</td>
</tr>
<tr>
<td>Completed university/college</td>
<td>46.8%</td>
<td>42.0%</td>
<td>33.1%</td>
<td>50.0%</td>
</tr>
<tr>
<td>Advanced degree</td>
<td>8.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment status</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>48.9%</td>
<td>47.8%</td>
<td>34.2%</td>
<td>57.1%</td>
</tr>
<tr>
<td>Part-time</td>
<td>12.0%</td>
<td>13.2%</td>
<td>18.4%</td>
<td>10.2%</td>
</tr>
<tr>
<td>Student</td>
<td>6.5%</td>
<td>6.7%</td>
<td>17.1%</td>
<td>16.3%</td>
</tr>
<tr>
<td>Not employed</td>
<td>32.7%</td>
<td>32.2%</td>
<td>30.3%</td>
<td>16.3%</td>
</tr>
<tr>
<td>Substance Use Disorder</td>
<td>5.0%</td>
<td>22.3%</td>
<td>13.0%</td>
<td>28.6%</td>
</tr>
<tr>
<td>Major Depression</td>
<td>10.1%</td>
<td>20.6%</td>
<td>29.9%</td>
<td>30.6%</td>
</tr>
<tr>
<td>Generalized Anxiety</td>
<td>8.6%</td>
<td>25.7%</td>
<td>27.9%</td>
<td>26.5%</td>
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<tr>
<td>Post-Traumatic Stress Disorder</td>
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<td>22.4%</td>
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<tr>
<td>Social Anxiety Disorder</td>
<td>2.9%</td>
<td>3.6%</td>
<td>9.7%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Panic Disorder</td>
<td>9.2%</td>
<td>24.7%</td>
<td>19.5%</td>
<td>28.6%</td>
</tr>
<tr>
<td>Antisocial Personality</td>
<td>2.0%</td>
<td>14.1%</td>
<td>8.4%</td>
<td>26.5%</td>
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<tr>
<td>Sex/Pornography Problems</td>
<td>3.2%</td>
<td>10.1%</td>
<td>16.2%</td>
<td>16.3%</td>
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<tr>
<td>Social Media Problems</td>
<td>2.4%</td>
<td>9.1%</td>
<td>13.0%</td>
<td>16.3%</td>
</tr>
<tr>
<td>Other Internet Use Problems</td>
<td>0.8%</td>
<td>4.8%</td>
<td>10.4%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Impulsivity (UPPS-P)</td>
<td>43 (8)</td>
<td>49 (8)</td>
<td>47 (8)</td>
<td>51 (8)</td>
</tr>
</tbody>
</table>
### Variables distinguishing PG from PVG

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Non-problem (n=3322)</th>
<th>Problem Gamblers (PG) (n=417)</th>
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</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>48.6%</td>
<td>54.4%</td>
<td>51.9%</td>
<td>56.3%</td>
</tr>
<tr>
<td>Female</td>
<td>51.4%</td>
<td>45.6%</td>
<td>48.1%</td>
<td>43.8%</td>
</tr>
<tr>
<td>Marital Status*</td>
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<td></td>
</tr>
<tr>
<td>Never married</td>
<td>27.6%</td>
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</tr>
<tr>
<td>Married</td>
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<td>26.0%</td>
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</tr>
<tr>
<td>Co-habiting</td>
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</tr>
<tr>
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<td></td>
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<td>7.8%</td>
</tr>
<tr>
<td>Education</td>
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<td></td>
</tr>
<tr>
<td>Did not complete high school</td>
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</tr>
<tr>
<td>Completed high school</td>
<td>19.8%</td>
<td>22.3%</td>
<td>20.8%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Some university or college</td>
<td>21.1%</td>
<td>24.7%</td>
<td>36.4%</td>
<td>20.8%</td>
</tr>
<tr>
<td>Completed university or Professional Degree, Masters,</td>
<td>46.8%</td>
<td>42.0%</td>
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<td>50.0%</td>
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<tr>
<td>Employment*</td>
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<td>10.4%</td>
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<td>32.7%</td>
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<td>16.3%</td>
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<tr>
<td>Full-time student</td>
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<td>6.7%</td>
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<td>16.3%</td>
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<tr>
<td>Part-time employment</td>
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<td>13.2%</td>
<td>18.4%</td>
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<tr>
<td>Full-time employment</td>
<td>48.9%</td>
<td>47.8%</td>
<td>34.2%</td>
<td>57.1%</td>
</tr>
</tbody>
</table>

### Continuous variables (age & UPPS)

<table>
<thead>
<tr>
<th>Continuous variables (age &amp; UPPS)</th>
<th>Non-problem</th>
<th>PG</th>
<th>PVG</th>
<th>PG/PVG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age*</td>
<td>44.24 (16.07)</td>
<td>42.11 (13.91)</td>
<td>36.38 (14.79)</td>
<td>37.77 (13.91)</td>
</tr>
<tr>
<td>UPPS-P* (Impulsivity)</td>
<td>43.24 (7.96)</td>
<td>48.79 (7.53)</td>
<td>46.51 (8.19)</td>
<td>51.07 (8.16)</td>
</tr>
<tr>
<td>Variables</td>
<td>DSM-5 Diagnoses</td>
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<tr>
<td>---------------------------------</td>
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</tr>
<tr>
<td></td>
<td>Non-problem (n = 3322)</td>
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<td>Problem VG Players (PVG) (n = 154)</td>
<td>Dual PG/PVG (n = 49)</td>
</tr>
<tr>
<td>Substance Use Disorder*</td>
<td>5.0%</td>
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<td>13.0%</td>
<td>28.6%</td>
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<td>Major Depressive Disorder*</td>
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<td>29.9%</td>
<td>30.6%</td>
</tr>
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<td>Generalized Anxiety Disorder</td>
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<td>27.9%</td>
<td>26.5%</td>
</tr>
<tr>
<td>PTSD</td>
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<td>22.4%</td>
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<td>Social Anxiety Disorder*</td>
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<td>9.7%</td>
<td>6.1%</td>
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<tr>
<td>Panic Disorder</td>
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<td>19.5%</td>
<td>28.6%</td>
</tr>
<tr>
<td>Antisocial Personality Disorder</td>
<td>2.0%</td>
<td>14.1%</td>
<td>8.4%</td>
<td>26.5%</td>
</tr>
</tbody>
</table>

* = p < 0.05
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<thead>
<tr>
<th>Variables Distinguishing PG from PVG</th>
<th>None</th>
<th></th>
<th>PG</th>
<th></th>
<th>PVG</th>
<th></th>
<th>PG/PVG</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Sex or pornography*</td>
<td>107</td>
<td>3.2%</td>
<td>42</td>
<td>10.1%</td>
<td>25</td>
<td>16.2%</td>
<td>8</td>
<td>16.3%</td>
</tr>
<tr>
<td>Social media (i.e. Facebook)</td>
<td>79</td>
<td>2.4%</td>
<td>38</td>
<td>9.1%</td>
<td>20</td>
<td>13.0%</td>
<td>8</td>
<td>16.3%</td>
</tr>
<tr>
<td>Other internet use (not gambling, video games, pornography, or social media)*</td>
<td>26</td>
<td>.8%</td>
<td>20</td>
<td>4.8%</td>
<td>16</td>
<td>10.4%</td>
<td>3</td>
<td>6.1%</td>
</tr>
</tbody>
</table>

* = p < 0.05
Logistic regression predicting membership in problem group (vs non-problem group) \( \text{Nagelkerke } R \text{ squared} = 18.4\% \ (* = p < 0.05) \)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Regression Coefficients (( B ))</th>
<th>Wald Statistics</th>
<th>Odds Ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impulsivity (UPPS)</td>
<td>.06</td>
<td>62.1*</td>
<td>1.1</td>
</tr>
<tr>
<td>Substance Use Disorder</td>
<td>.79</td>
<td>24.6*</td>
<td>2.2</td>
</tr>
<tr>
<td>Generalized Anxiety Disorder</td>
<td>.73</td>
<td>22.9*</td>
<td>2.1</td>
</tr>
<tr>
<td>Panic Disorder</td>
<td>.52</td>
<td>12.3*</td>
<td>1.7</td>
</tr>
<tr>
<td>Antisocial Personality Disorder</td>
<td>.72</td>
<td>11.0*</td>
<td>2.1</td>
</tr>
<tr>
<td>Marital Status</td>
<td>-9.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Anxiety Disorder</td>
<td>-.69</td>
<td>6.0*</td>
<td>.50</td>
</tr>
<tr>
<td>Social Media Problems</td>
<td>.54</td>
<td>5.6*</td>
<td>1.7</td>
</tr>
<tr>
<td>Other Internet Problems</td>
<td>.77</td>
<td>5.3*</td>
<td>2.2</td>
</tr>
<tr>
<td>Gender</td>
<td>-.25</td>
<td>5.2*</td>
<td>.78</td>
</tr>
<tr>
<td>Sex/Pornography Problems</td>
<td>.36</td>
<td>2.7</td>
<td>1.4</td>
</tr>
<tr>
<td>Constant</td>
<td>-4.1</td>
<td>122.5*</td>
<td>.02</td>
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</tbody>
</table>
Logistic regression predicting membership in PVG group (vs PG group) Nagelkerke $R^2$ squared = 14.6%

<table>
<thead>
<tr>
<th>Variable</th>
<th>Regression Coefficients (B)</th>
<th>Wald Statistics</th>
<th>Odds Ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
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<td>25.6*</td>
<td>.96</td>
</tr>
<tr>
<td>Impulsivity (UPPS)</td>
<td>-.06</td>
<td>15.7*</td>
<td>.94</td>
</tr>
<tr>
<td>Major Depression</td>
<td>.67</td>
<td>6.9*</td>
<td>2.0</td>
</tr>
<tr>
<td>Substance Use Disorder</td>
<td>-.68</td>
<td>5.3*</td>
<td>.51</td>
</tr>
<tr>
<td>Constant</td>
<td>3.5</td>
<td>16.8*</td>
<td>33.2</td>
</tr>
</tbody>
</table>

* = $p < 0.05$
Logistic regression predicting membership in the Dual PG/PVG group (vs membership in one group) 
Nagelkerke $R$ squared = 4.1%

<table>
<thead>
<tr>
<th>Variable</th>
<th>Regression Coefficients (B)</th>
<th>Wald Statistics</th>
<th>Odds Ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impulsivity (UPPS)</td>
<td>0.06</td>
<td>8.7*</td>
<td>1.1</td>
</tr>
<tr>
<td>Constant</td>
<td>-5.7</td>
<td>24.9*</td>
<td>0.003</td>
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</tbody>
</table>

* = $p < 0.05$
Discussion

- Involvement in both gambling and video game play is common, suggesting overlap between casual gambling and video game play.
- The magnitude of co-involvement is not strong, however, consistent with previous research.
- This weak relationship was also found when examining types of gambling and video game frequency, with frequency of internet gambling having the strongest relationship to frequency of video gaming.
- Main commonality between gambling and gaming is modality of access rather than structural similarities.
Discussion

• Problem gamblers and problem video game player do have similar demographic features as well as high rates of mental health problems and impulsivity.

• Some differences did exist between PVG and PG, with PVG tending to be less likely to have a substance use disorder, and more likely to have depression.

• Almost no differences existed between people with either problem gaming or problem gambling and people having both disorders.
Limitations

• Sample was fairly old
• Difficulty assessing video game genres
• No data available on panelists who were not gamblers or game players
• Online panels
  • Tend to oversample for pathology
  • Access to internet required
Thank you!
References


References