The evolution of poker players’ gambling habits: a three-year cohort study

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Are all games equivalent?

- In Quebec, 71% of adults report having gambled in the past year.
- Gambling activities cannot be conceived as being homogeneous activities.
- The game that is gaining the most in popularity is poker.
- Poker is everywhere: on Internet, in the media, with celebrities.
- The game involves both chance and skill.
- In Quebec, 4.7% of adults report having played poker in the past year.
What we know about poker players (1/2)

- Few studies have been conducted among poker players

- High prevalence of pathological gambling (between 8% and 9%) and of problematic gambling (15% to 38%) among online poker players (Jonsson, 2009; Hopley & Nicki, 2010)
What we know about poker players (2/2)

- Problem poker players would be characterized:
  - by their lack of discipline
  - significant spending
  - higher frequency of gambling (Griffiths and coll., 2010)
  - erroneous beliefs
  - impulsivity
  - problems managing and identifying emotions (Hopley & Nicki, 2010; Mitrovic & Brown, 2009; Shead and coll., 2008)

- According to the DSM, gambling problems are chronic and progressive

- Concerns regarding public health due to the popularity of this activity
Objectives

This study, which looks at all types of poker players (land-based and Internet), aims to:

1) Describe gambling trajectories from three measurement times (T0, T1 (12 months), T2 (24 months))

2) Identify mental health problems (drug or alcohol problems, depression, anxiety) and other factors (impulsivity, erroneous thoughts) associated with changes in the severity of gambling habits

3) Qualitative parts: Based on poker players’ accounts, describe and explain the evolution of their gambling habits
Method (1/2)

• Self-selected participants

• To participate in this study, participants had to:
  • consider themselves poker players
  • have bet money on a poker game in the past year
  • be at least 18 years old
  • speak French or English

• Recruited from various poker sites (land-based and online)
  • Facebook, bars, advertising in bars, Quebec poker league, newspaper, Internet advertising, discussion forum on poker, tournament, casino
Method (2/2)

- **Quantitative—prospective cohort component:**
  - Three measurement times: T0 at the beginning of the study, T1 at 12 months and T2 at 24 months

- **Qualitative:**
  - 20 poker players whose gambling habits will have changed during the follow-up

- One-on-one interview lasting 60 minutes with self-completed questionnaires

- Each participant received a $30 gift certificate as financial compensation
Material

- Socio-demographic variables
- Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001)
  - including the 9-item Problem Gambling Severity Index (PGSI)
- DEBA alcohol and DEBA drugs (Tremblay & Blanchette-Martin, 2009)
- BECK anxiety and Beck depression
- Cognitive distortions (Erroneous perceptions of chance)
- ICROLJ (Inventaire des croyances liées aux jeux)
- Impulsivity (Eysenck & Eysenck, 1977)
Participants (1/3)

- **T0**: 271 poker players
  - 240 have accepted to be re-contacted for further study

- **T1**: 177 poker players (10 to come)
  - Follow-up rate: 77%

- **T2**: 132 poker players (25 to come)
  - Follow-up rate: 86%
Participants (2/3)

- **Gender**: 88.4% men and 11.6% women
- **Mean age**: 29.8 years
- **Occupational status**: 62.4% work part or full time and 30% are students
- **Educational level**: 29.5% have a high school diploma, 44.9% have a technical school or CEGEP diploma and 20.1% have a university degree
- **Marital Status**: 43% are single and 51.4% are married or in a common-law relationship
- 92% speak French and 92.8% consider themselves Canadian
- **Mean Income**: $36,570
Participants (3/3)

- 28.8% considered themselves expert or professional poker players and 71.2%, beginners or intermediate
- 46.6% played mostly on the Internet (more than 75% of the time); 53.4% played mostly land-based
- PGSI scores for the entire sample:
  - Non-problem: 23.7%
  - Low-risk: 36.6%
  - Moderate-risk: 34.6%
  - Problem gambler: 5.6%
Data Analysis

- Latent class growth analysis (LCGA) was used to identify problem gambling patterns (PGSI, continuous score) over time.
- LCGA examines trends over multiple periods of time (T0-T1 (12 months) and T2 (24 months)).
- LCGA assumes that individual variation occurs around more than one trajectory and allows us to determine which factors predict trajectory membership.
- PROC TRAJ, a SAS procedure, was used to analyze the longitudinal data.
Model Selection

• Trajectory selection was based on the Bayesian Information Criterion fit statistics (BIC)

• Probabilities of poker players belonging to each trajectory group (posterior probabilities) were calculated by the LCGA model

• Univariate analyses were conducted to determine predictors of trajectory group membership (expertise level, alcohol or drug problem, Internet poker player or not, impulsivity, number of games played, irrational thoughts)

• Predictors found to be significant were included in a multivariate model
Probabilities of poker players belonging to each trajectory

<table>
<thead>
<tr>
<th>Group</th>
<th>Prevalence</th>
<th>Probabilities of belonging</th>
<th>Posterior probability mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>107</td>
<td>39.5%</td>
<td>40.9%</td>
</tr>
<tr>
<td>2</td>
<td>147</td>
<td>52.2%</td>
<td>52.0%</td>
</tr>
<tr>
<td>3</td>
<td>17</td>
<td>6.3%</td>
<td>7.0%</td>
</tr>
</tbody>
</table>
## Univariate Analysis (1/2)

<table>
<thead>
<tr>
<th>Dichotomous variable</th>
<th>Group 2 vs. Group 1 (ref.)</th>
<th>Group 3 vs. Group 1 (ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>OR</td>
</tr>
<tr>
<td>Type of player: Internet</td>
<td>0.991</td>
<td>2.70</td>
</tr>
<tr>
<td>Level of expertise: Expert-professional</td>
<td>1.474</td>
<td>4.37</td>
</tr>
<tr>
<td>Poker is part of the person’s revenue</td>
<td>2.002</td>
<td>7.41</td>
</tr>
<tr>
<td>Played for money in the past 12 months</td>
<td>2.356</td>
<td>10.55</td>
</tr>
<tr>
<td>Substance (drug or alcohol) problem (at-risk or dependence)</td>
<td>0.175</td>
<td>1.19</td>
</tr>
</tbody>
</table>
## Univariate Analysis (2/2)

<table>
<thead>
<tr>
<th>Continuous variable</th>
<th>Group 2 vs. Group 1 (ref.)</th>
<th>Group 3 vs. Group 1 (ref.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>OR</td>
</tr>
<tr>
<td>Number of games (excluding poker)</td>
<td>0.128</td>
<td>1.14</td>
</tr>
<tr>
<td>Erroneous perceptions of chance</td>
<td>0.135</td>
<td>1.14</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>0.076</td>
<td>1.08</td>
</tr>
<tr>
<td></td>
<td>Group 2 vs. Group 1</td>
<td>Group 3 vs. Group 1</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td></td>
<td>Coefficient</td>
<td>OR</td>
</tr>
<tr>
<td>Internet player*</td>
<td>0.760</td>
<td>2.13</td>
</tr>
<tr>
<td>Poker is part of the person’s revenue*</td>
<td>1.815</td>
<td>6.14</td>
</tr>
<tr>
<td>Substance (drug or alcohol) problem (at-risk or dependence)*</td>
<td>0.397</td>
<td>1.49</td>
</tr>
<tr>
<td>Number of games (excluding poker)</td>
<td>0.142</td>
<td>1.15</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>0.079</td>
<td>1.08</td>
</tr>
</tbody>
</table>

* This variable should be interpreted cautiously because of the lack of variability.
Limitations

- Self-selected sample
- Small N
- Evaluation over 3 years only
  - That said, we know that a problem is likely to develop over a longer period—about 10 years
Conclusions (1/2)

- There are various poker playing habit trajectories
- None of the trajectories increases in severity
- Players who are the least at risk remain stable or reduce their level of severity
- Those at higher risk remain in a constant trajectory
- Internet gambling, playing a greater number of games, having substance use problems and being impulsive are all variables associated with the various trajectories
Conclusions (2/2)

- Not all poker players develop gambling problems
- Internet gamblers have higher risk trajectories
- Those who are most at risk do not decrease their gambling habits during this short period; prevention programs should target them more specifically
- Further analyses are needed to better understand the factors that influence the various trajectories
Thanks to our team…

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References


