Objective: While it has been shown that disordered gamblers with psychosis are at increased risk for comorbid psychopathology, it is unclear whether this dual-diagnosis population is also at greater risk of problematic engagement with comorbid addictive behaviors.

Methods: We tested for association between disordered gambling with psychosis and comorbid addictive behaviors in a sample of 349 treatment-seeking disordered gamblers.

Results: Twenty-five (7.2%) disordered gamblers met criteria for psychosis. Disordered gamblers with psychosis were no more likely to meet diagnostic criteria for current alcohol/substance use disorder than disordered gamblers without psychosis. However, this dual-disorder population reported greater misuse of shopping, food bingeing, caffeine, and prescription drugs. When controlling for multiple comparisons, binge eating was the only addictive behavior to remain significant.

Conclusion: Given these findings, a comprehensive assessment of addictive behaviors – specifically food bingeing – in this population may be warranted.

Keywords: Disordered gambling; psychosis; addictive behaviors; comorbidity
Results

Disordered gamblers with psychosis were not significantly more likely to be diagnosed with current alcohol (8.0% vs. 9.6%) or substance use disorder (8.0% vs. 4.6%) than disordered gamblers without psychosis, p-values > 0.348. On the SPQ, disordered gamblers with psychosis reported greater misuse of four addictive behaviors: shopping, binge eating, prescription drugs, and caffeine (Table 1). The effect sizes found would be considered small. No other addictive behavior reached statistical significance, p-values > 0.105. To provide a more conservative estimate, we re-ran the analyses to control for multiple comparisons using the false discovery rate method, with the rate set at 0.10. The results indicated that food binging was the only addictive behavior to remain significant. We also assessed whether gender differences exist in addictive behaviors among disordered gamblers with and without psychosis, chi-square analyses were used for categorical variables (current alcohol and substance use disorder). Mann-Whitney U non-parametric tests were used for the SPQ, as the variables violated assumptions of normality.

Discussion

The results of the present research suggest that disordered gamblers with psychosis are not more likely to be diagnosed with alcohol or substance use disorder. However, several differences emerged when a variety of addictive behaviors were comprehensively assessed. Interestingly, disordered gamblers with psychosis reported greater misuse of addictive behaviors that would be considered “lesser known,” such as shopping, food bingeing, prescription drug use, and caffeine use. These findings may be explained by the increased impulsivity that has been found among disordered gamblers with psychosis. Further, the higher rates of binge eating among disordered gamblers with psychosis may be related, at least in part, to metabolic syndromes that have been associated with antipsychotic medication use.

Current best-practice guidelines suggest monitoring and assessing patients with psychosis for substance use disorders, as they can lead to adverse interaction effects with medications. However, individuals with psychosis may be less likely to be cautioned about behavioral addictions, specifically food binging, which may also potentially lead to harm. The results of our research suggest that practice guidelines should be extended to include a comprehensive assessment of both substance and behavioral addictions in this dual-disorder population.

One limitation of the present research was the relatively small sample of disordered gamblers with psychosis. Indeed, replication of our results with a larger sample is needed to increase confidence in our findings.

In sum, the results of our research should be viewed as preliminary evidence for the increased risk of comorbid addictive behaviors in individuals with a dual diagnosis of disordered gambling and psychosis, and suggest that practitioners would do well to monitor and caution against a wide array of addictive disorders in this population.

Acknowledgements

HSK and BDC receive doctoral scholarship support from the Alberta Gambling Research Institute (AGRI). DCH is a research coordinator at AGRI with partial salary support. DSM is a research chair for AGRI with partial salary support. LMT-M acknowledges support from the Social Sciences and Humanities Council’s Insight Development Grant.

Table 1 Comparison of misuse of addictive behaviors as measured by the Shorter PROMIS Questionnaire (SPQ) between disordered gamblers with and without psychosis

<table>
<thead>
<tr>
<th>Addictive behaviors</th>
<th>Disordered gamblers without psychosis (n=324)</th>
<th>Disordered gamblers with psychosis (n=25)</th>
<th>Mann-Whitney U</th>
<th>Cohen’s d</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol abuse</td>
<td>9.73 (12.74)</td>
<td>10.28 (12.56)</td>
<td>2,305.5</td>
<td>0.036</td>
<td>0.765</td>
</tr>
<tr>
<td>Shopping abuse</td>
<td>12.74 (11.10)</td>
<td>18.00 (12.01)</td>
<td>3,301.0</td>
<td>0.262</td>
<td>0.031*</td>
</tr>
<tr>
<td>Food bingeing</td>
<td>13.89 (11.91)</td>
<td>22.65 (14.72)</td>
<td>3,343.0</td>
<td>0.346</td>
<td>0.006*</td>
</tr>
<tr>
<td>Food starving</td>
<td>8.50 (7.42)</td>
<td>12.16 (10.71)</td>
<td>2,888.5</td>
<td>0.179</td>
<td>0.141</td>
</tr>
<tr>
<td>Tobacco abuse</td>
<td>16.34 (17.13)</td>
<td>21.25 (18.06)</td>
<td>2,948.0</td>
<td>0.149</td>
<td>0.208</td>
</tr>
<tr>
<td>Pathological gambling</td>
<td>31.04 (13.55)</td>
<td>35.45 (11.97)</td>
<td>2,971.5</td>
<td>0.190</td>
<td>0.122</td>
</tr>
<tr>
<td>Drug abuse</td>
<td>4.08 (9.00)</td>
<td>2.30 (4.81)</td>
<td>2,358.0</td>
<td>0.061</td>
<td>0.554</td>
</tr>
<tr>
<td>Sex addiction</td>
<td>7.23 (9.19)</td>
<td>7.53 (13.04)</td>
<td>1,739.5</td>
<td>0.130</td>
<td>0.289</td>
</tr>
<tr>
<td>Work addiction</td>
<td>16.50 (9.74)</td>
<td>19.89 (12.77)</td>
<td>2,519.5</td>
<td>0.116</td>
<td>0.345</td>
</tr>
<tr>
<td>Caffeine abuse</td>
<td>6.94 (8.66)</td>
<td>14.50 (14.23)</td>
<td>2,819.5</td>
<td>0.235</td>
<td>0.050*</td>
</tr>
<tr>
<td>Prescription drug abuse</td>
<td>7.13 (9.60)</td>
<td>13.74 (12.27)</td>
<td>3,197.0</td>
<td>0.284</td>
<td>0.017*</td>
</tr>
<tr>
<td>Exercise abuse</td>
<td>10.29 (9.52)</td>
<td>9.83 (7.43)</td>
<td>2,312.0</td>
<td>0.027</td>
<td>0.822</td>
</tr>
</tbody>
</table>

SD = standard deviation.

* p < 0.05.

Denotes significance with false discovery rate correction.
HT has received funding and consulted for the Brazilian Federal Savings Bank (Caixa Econômica Federal) and was a member of the Independent Assessment Panel for Responsible Gambling Certification of the World Lottery Association from October 2015 to February 2016. The authors thank the members of PRO-AMJO for their help with data collection.

Disclosure

The authors report no conflicts of interest.

References