

Exploring the Relationships Between Problem Gambling and ADHD: A Meta-Analysis

Summary Report for the Manitoba Gambling Research Program

Investigator:

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Research Priority:

Examine the relationship between co-occurring disorders and at risk/problem gambling, and explore the implications for treatment.

Background

Problem gambling embodies a deficit in decision-making, impulse control, and moderation. Impulsivity is also a symptom of Attention Deficit Hyperactivity Disorder (ADHD). Therefore, we would expect to see elevated rates ADHD in problem gamblers. The research on the link between ADHD and problem gambling has been inconsistent though. Some studies have found a link between ADHD and gambling (e.g., Breyer et al., 2009; Clark, Nower, & Walker, 2013), while others studies have suggested only a weak association (Canu & Schatz, 2011; Faregh & Derevensky, 2011). The number of studies on this important topic is growing, but is not necessarily making this issue clearer. In addition, the number of studies on this topic is growing so large it can be difficult for researchers and clinicians to stay on top of it. As a result, we decided to conduct a study that would summarize the research to date and clarify the overall findings.

Significance

Knowing the size of the association between ADHD and problem gambling will be helpful to clinicians in terms of determining the attention to give to this issue. It may also lead to prevention efforts for problem gambling in samples of individuals with ADHD, well before they display any gambling behaviours, and perhaps even into adolescence or childhood when ADHD is often first diagnosed. Furthermore, these findings may suggest useful treatment options (i.e., those used for ADHD) for individuals already dealing with problem gambling, especially around managing the impulsivity that is so often part of this presentation. Beyond that, knowledge of the co-occurrence of these two conditions would be useful information for clinicians to have in terms of making treatment plans for individuals with problem gambling. If our findings indicate a strong relationship, efforts may be made to screen for ADHD in problem gamblers.

Research Questions

This study summarized previous research that examined the link between problem gambling and ADHD to try to resolve this disagreement. We tried to answer the following research questions:

1. How large is the association between ADHD symptoms and gambling severity?
2. What is the prevalence (rate) of ADHD in individuals with problem gambling?
3. What is the prevalence of problem gambling in individuals with ADHD?
4. What are the odds of individuals with problem gambling having ADHD as compared to individuals without problem gambling?
5. What are the odds of individuals with ADHD having problem gambling as compared to individuals without ADHD?
6. How do the following factors affect the association between ADHD symptoms and gambling severity: gender, age, country, date of publication, and publication type?

Methodology

To answer these research questions, a meta-analysis was conducted. A meta-analysis is a statistical method for combining the results of previous studies, with the goal of identifying the overall trend in the data and looking for factors that change the results. The first step in the meta-analysis was to conduct an extremely thorough search of several research databases to find all of the relevant research studies that looked at ADHD and problem gambling that were published up to June 2014. Other efforts were made to find relevant studies, including checking to see which other studies looked at these one and which ones they looked at. The next step in the meta-analysis was to code the information from the eligible studies that is needed to answer the research questions. We had two people do this on some of the studies to ensure it was done accurately and without bias. These two coders agreed 100% of the time, so we can be confident the coding was done well. The data was then entered into and analyzed in a statistical computer program that is specifically designed for meta-analysis.

We found 24 studies that addressed our research questions after looking through more than 1000 studies. Most of these studies were conducted in North America. They were published between 1992 and 2014. There was a large age range present in the studies from adolescence through middle age (mean age of the samples ranged from 14 to 50 years).

Key Findings

- Research Question 1: The correlation between symptoms of ADHD and gambling severity was statistically significant, based on 9 studies ($r = .17$, 95% CI = [0.12, 0.22], $p < .001$). The test for heterogeneity was not significant, $Q(8) = 15.31$, $p = .054$, $I^2 = 47.73\%$, although there was still a moderate amount of heterogeneity present based on the I^2 results.)
- Research Question 2: Based on the results of 12 studies, the average (mean) prevalence rate of ADHD in individuals with problem gambling was 18.46% (95% CI = [10.29, 30.88], $Q(11) = 151.802$, $p < .001$, $I^2 = 92.75\%$).
- Research Question 3: The mean prevalence rate of problem gambling in individuals with ADHD, based on 5 studies, was found to be 11.75% (95% CI = [6.68, 19.86], $Q(4) = 13.56$, $p = .008$, $I^2 = 70.51\%$).
- Research Question 4: The odds of individuals with problem gambling having ADHD compared to controls was significant (the weighted mean effect size, based on the results of 5 studies was OR = 4.11, 95% CI = [2.25, 7.50], $p < .001$, $Q(4) = 7.30$, $p = .121$, $I^2 = 45.22\%$).
- Research Question 5: The odds of individuals with ADHD having problem gambling was significant (the weighted mean effect size, based on 4 studies, was OR = 2.85, 95% CI = [1.89, 4.30], $p < .001$, $Q(3) = 3.08$, $p = .380$, $I^2 = 2.48\%$).

- Research Question 6: This research question looked at how some factors affected the association between ADHD symptoms and gambling severity. None of them were statistically significant, but mean age of the sample was almost significant ($Q = 2.84$, $R^2 = 0.00\%$, $p = .091$), with greater age being linked to a stronger relationship between symptoms of ADHD and gambling severity.

Conclusions

These results point to a substantial overlap in ADHD and problem gambling, with nearly one in five individuals with problem gambling having clinical levels of ADHD symptoms. Although problem gambling is also present in individuals with ADHD at levels that far exceed chance, it is not as common. The age of the sample may have affected the findings. That is, studies with an older mean age tended to have a larger correlation than studies with a younger mean age (within the age range of 16 to 47 years for studies included in this analysis), suggesting that the presence of elevated ADHD symptoms may be linked to a greater chance of problem gambling as age increases. That said, we did not achieve full significance here and another study will be needed to test this hypothesis more directly.

Implications

The significant relationship between ADHD and problem gambling indicates that this is an important issue for clinicians who help those with ADHD and/or problem gambling. When working with those with ADHD they should be sure to check into gambling behaviours. In individuals with problem gambling, they may wish to check about ADHD, and consider treating it as well as the gambling. This research also points to some possible prevention work around gambling in populations with ADHD before they show problem gambling. Furthermore, these findings may suggest useful treatment options (i.e., those used for ADHD) for individuals with problem gambling; interventions focused on managing the impulsivity that is also present may be particularly helpful.

References

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