When Problem Gambling is the Primary Reason for Seeking Addiction Treatment

John Jamieson, Dwight Mazmanian, Alexander Penney, Nancy Black, An Nguyen

---

When Problem Gambling is the Primary Reason for Seeking Addiction Treatment

John Jamieson[1], Dwight Mazmanian[1],

Alexander Penney[1], Nancy Black[2], and An Nguyen[1]

[1] Department of Psychology, Lakehead University, Thunder Bay, Ontario, Canada

[2] Mental Health, Addictions and Problem Gambling Programs, St. Joseph's Care Group,

Thunder Bay, Ontario, Canada

Corresponding Author: Dwight Mazmanian.

Psychology Department, Lakehead University,

955 Oliver Road, Thunder Bay, ON Canada P7B 5E1

Telephone: 1-807-343-8257 Fax: 1-807-346-7734

Email: dwight.mazmanian@lakeheadu.ca

Abstract

An existing database was used to compare problem gamblers (N = 138) who presented for

treatment of their gambling problem to two other groups: alcohol and/or drug addiction clients

who also had a gambling problem (N = 280) or who did not have a gambling problem (N =

2178). Clients with gambling as their primary problem were more likely to be female; employed

or retired; more highly educated; married, divorced, or widowed; without legal problems; and

older than the other groups. They also had different patterns of recent mental health diagnoses

and problematic substance use. The other problem gambling clients were more similar to the

substance only clients. These findings indicate that those who present for treatment of problem

gambling are a distinct subset of addiction clients who have gambling problems, and emphasize

the importance of considering the reasons for seeking treatment, not just the presence of a

gambling problem.

Key Words: gambling, addiction, primary, secondary, treatment

When Problem Gambling is the Primary Reason for Seeking Addiction Treatment

The term "problem gambling" is often used to describe individuals who do not necessarily meet the *DSM-IV* criteria for pathological gambling, but whose gambling behaviour interferes with daily living (Centre for Mental Addiction and Health, 2008). Prevalence rates of problem gambling are generally reported to be between 1% and 3% of the population in Canada and the United States, although only a small proportion of these individuals will seek treatment (Leblond, Ladoucer, & Blaszczyski, 2003). Hodgins and El-Guebaly (2000) found that individuals with a history of pathological gambling were reluctant to seek treatment for various reasons, including wanting to handle the problem on their own, feeling treatment was unnecessary, and not knowing the availability of treatment.

Even individuals who do seek treatment for problem gambling often report other reasons for seeking treatment, such as family pressure or the belief that they are on a losing streak - not that they have a gambling problem (Ladoucer, 2002; Raylu & Oei, 2007). While financial concerns appear to be a primary reason for seeking help, psychological distress is also often reported by problem gamblers as a reason to seek help (Pulford et al., 2009).

Problem gamblers may also seek treatment for comorbid disorders. For example, people who present seeking treatment for substance addiction may have a gambling problem, or people diagnosed with anxiety or mood disorders may also be classified as problem gamblers. A high rate of comorbidity between mental health disorders and pathological gambling has been shown in both community and clinical samples (Hodgins, Peden, & Cassidy, 2005). Problem gamblers who seek treatment for their gambling issues also show higher incidences of depressive, bipolar, anxiety, and substance use disorders than control populations (Dell'Osso, Allen, & Hollander, 2005). In their literature review, Crockford and el-Guebaly (1998) reported that among

pathological gamblers, lifetime prevalence rates for substance use disorders ranged between 25% and 60%. It has also been reported that between 13% and 30% of substance users who receive treatment report a history of problem gambling (Langenbucher, Bavly, Labouvie, Sanjuan, & Martin, 2001; Shepherd, 1996).

The rate of comorbidity with substance use and mental health issues differ between men and women who seek gambling treatment. A study of problem gamblers who used a gambling helpline showed that males were more likely to have a substance problem, while females were more likely to have problems with anxiety and to have sought mental health treatment, but both sexes exhibited high rates of depression and suicidality (Potenza et al., 2001). Similarly, in a large population study, men with subclinical gambling problems had more current and lifetime problems with substances than women with subclinical gambling, while both clinical and subclinical female gamblers were more likely to have mood and anxiety disorders than their male counterparts (Blanco, Hasin, Petry, Stinson, & Grant, 2006). When mental health problems are examined, based on number of symptoms rather than diagnostic categories, female gamblers have more symptoms than male gamblers (Granero et al., 2009). Mental health issues, including major depression, dysthymia, panic disorder, and nicotine dependence are also more strongly related to problem gambling severity in women than men (Desai & Potenza, 2008).

However, it appears that even when accounting for gender, there are differences between problem gamblers with and without a substance use problem. When controlling for gender, Ladd and Petry (2003) found that treatment-seeking gamblers with a history of substance problems had more gambling problems, were more likely to be currently receiving mental health treatment, and more likely to have a history of mental illness than gamblers without a substance use problem. Unfortunately, the researchers did not compare these groups to clients with a

substance problem, but no gambling problem. We are unaware of any study that has examined these three potential subgroups together. An important question that remains unanswered, then, is: In what ways do problem gamblers who seek treatment for their problem gambling differ from other addiction clients, who may or may not have a comorbid gambling problem? Given the high comorbidity between substance use disorders and problem gambling, it is important for treatment planners to know whether those presenting for treatment of problem gambling differ from problem gamblers who present seeking treatment for substance use or those with only a substance use problem. As Hser, Maglione, Polinsky, and Anglin (1998) point out, there is also the need for more research to understand why problem gamblers do or do not seek treatment for their gambling problems.

In the province of Ontario, all clients entering treatment for addictions at provincially funded Addiction Treatment Centres are entered into a database. This database, called *Catalyst*, is maintained by the Centre for Addiction and Mental Health and contains a wide range of information about each client. Included in the *Catalyst* database is a determination, based on responses to a problem gambling screen, of whether or not the client has a gambling problem. This screen identifies those clients who have a gambling problem at time of admission regardless of the reasons why they are seeking treatment. Using an earlier version of this database, Urbanoski and Rush (2006) summarized the characteristics of the 6,966 gambling clients who entered treatment between April 1998 and March 2002. They reported a distinction between gamblers who "were seeking help specifically for a gambling problem" and those for whom a "gambling problem was identified over the course of treatment for another problem (e.g., for problems related to their alcohol and/or drug use)" (p.8). They reported a trend over the four years for an increasing percentage of clients to be seeking help primarily for a gambling

problem, with no difference due to gender. Unfortunately, Urbanoski and Rush (2006) did not examine possible differences between these two groups. They did report that men had experienced a longer duration of gambling-related problems than women.

Each Addiction Treatment Centre that contributes data to *Catalyst* can obtain access to the data from their centre, but not from the province as a whole. While the data may be limited by less standardized assessment techniques than used in other research studies, it allows researchers to use data that is available to treatment planners and practitioners. Therefore the results of such research can be directly applicable to practice.

The present study examined data for all clients receiving treatment at the Addiction Treatment Centre in Thunder Bay from 2003 to mid-2006. Problem gambling was diagnosed in 418 clients, but only 138 of these reported treatment of gambling as their primary presenting issue. The others ($N = 280$) identified as having a gambling problem presented for treatment of a substance addiction. A third group ($N = 2,178$) had only a substance addiction. These three groups were compared on demographic variables, including an evaluation of whether demographic differences might simply reflect gender differences. Group differences in comorbidity of both mental health problems and types of problem substances were also examined, including an evaluation of whether these differences could be due to demographic factors. The goal of these analyses was to gain a better understanding of those clients who have a gambling problem and present for treatment of their gambling problem. Are they similar to clients who have a gambling problem, but present for treatment of another addiction, or alcohol and/or drug addiction clients who do not have a gambling problem?

<div align="center">Method</div>

Clients

Data for the 2,596 clients who presented for treatment of their substance or gambling addiction at the provincially funded Addiction Treatment Centre in Thunder Bay between 2003 and mid-2006 were extracted from the *Catalyst* database. No identifying information about individual clients was included in the extracted data, and they remained completely anonymous throughout the study.

Catalyst database

All clients entering addiction treatment services in Ontario are required to complete an assessment with an addiction counsellor, which provides much of the data entered into the database. The addiction counsellors were trained to complete the assessment, but since this data comes from clinical practice rather than research, no inter-rater reliability information is available. The *Catalyst* database is maintained by the Centre for Addiction and Mental Health (CAMH) and tracks a range of data upon admission and registration. Clients are entered into the system through an identifying number, allowing them to remain completely anonymous. The assessment includes a 7-item gambling screen developed by CAMH. The first five items on the gambling screen are similar to questions on the South Oaks Gambling Screen (Lesieur & Blume, 1987). The questions assess whether, in the past 12 months, 1) the client has gambled more than intended, 2) have falsely claimed to be winning, 3) have felt guilty about their gambling, 4) have been criticized for their gambling, 5) have had arguments about their gambling, and 6) felt they had to continue gambling until they won. The last question asks for the frequency of these occurrences. Those answering "yes" to three or more questions are categorized as having a gambling problem, unless the last question shows that these occurrences were only once.

As part of the assessment clients are asked to describe why they are seeking treatment.

The responses are entered into pre-existing categories in *Catalyst* as presenting issues. Up to seven presenting issues are entered. These issues are not ordered in terms of severity, but rather the order that the issue was presented to the addiction counsellor.

The additional measures from *Catalyst* examined in the present study were:

Demographic information: This included clients' gender, age, marital status, education, legal problems, employment status, and income sources.

Mental health measures: Clients' answered whether or not they had been diagnosed with a mental health problem by a mental health professional in the last 12 months and in their lifetime. Up to two most recent diagnoses were entered. For this study, the disorders reported by clients were grouped into seven major categories based on interpretability and *DSM-IV* categories. Four categories had sufficient cases for analysis: anxiety disorder (including obsessive-compulsive disorder, panic disorder with or without agoraphobia, posttraumatic stress disorder, and cases where clients reported an unspecified anxiety disorder), major depressive disorder, attention-deficit/hyperactivity disorder (ADHD; including disruptive behaviour disorder), and bipolar disorder.

Type of problematic substances: Clients answered which substances they had addiction problems with. Up to five problematic substances could be provided. The substances were collapsed into categories, based on interpretability. Seven categories had sufficient cases for analysis: alcohol, amphetamines and stimulants (including methamphetamines), barbiturates and benzodiazepines, cannabis, cocaine and crack, hallucinogens, and medications (consisting of over-the-counter codeine, prescription opiates, and steroids).

Procedure

Permission to access the data was granted by Lakehead University Research Ethics Board

and the Addiction Treatment Centre's Research Ethics Committee. Once the data were received, the Microsoft Excel spreadsheet was converted into a Statistical Package for the Social Sciences (SPSS) spreadsheet. Upon inspection of the data, it was found that some clients had more than one row of data, because they were admitted for treatment on multiple occasions. The choice for data analysis was therefore whether to reduce each client to a single entry (unit of study is the client) or to keep all the data (unit of study is the admission). The analyses have been conducted both ways, with virtually identical findings, but only the single entry data are presented here since statistical analyses on the admission data violate the important assumption of independence of observations. The first admission was used for all clients except for two who reported gambling as a presenting issue on their second admission in which case the second admission was used. Any blank, unknown, or uncertain responses were excluded and treated as missing for analyses.

A total of 418 clients were identified as having a gambling problem on the gambling screen. However, only 138 of these reported "gambling" as their first presenting issue (designated "Primary Gamblers" in this study). The other problem gamblers ($N = 280$), who all reported other presenting issues, were termed "Secondary Gamblers". The Primary and Secondary Gambler groups were also compared to a third group, those with a substance addiction, but no gambling problem (Substance Problem Only; $N = 2178$).

The three groups were compared, using ANOVA, bivariate logistic regression, or Chi-square tests, on demographic measures, rates of comorbidity of mental health disorders, rates of substance addiction, and types of substances used. Findings of significant group differences were followed by pairwise comparisons using post hoc Tukey HSD, pairwise Chi-square tests, or pairwise logistic regressions.

Results

Demographic differences among the groups

Table 1 contains demographic information about each of the three groups, as well as the statistical significance of the group effect. There was a large, significant difference in gender among the groups. The Primary Gambling group was 42% male, which was significantly lower than the Secondary Gambling group and the Substance Problem Only group, *ps* < .001, which were both roughly 64% male.

To control for the possibility that some of the other demographic differences could be due to the gender difference, additional demographic analyses were conducted that included gender as a covariate. ANCOVA was used for age and education level. For the other demographic measures, binary logistic regression was used, with gender entered as a covariate before the group variable. Several of the demographic measures, including relationship status, employment status and income source, were converted to dichotomous variables by grouping the categories to reflect the main differences among the groups, which are apparent in Table 1. Marital status was coded to distinguish between clients who were single (never married), and those who were currently married/partnered, divorced/separated, or widowed. Employment status was coded to distinguish between clients who were employed or retired versus those who were students, disabled or not in the labour force (in general, better versus poorer employment). Income source was coded to distinguish between clients who were receiving income from employment, retirement, insurance, or disability versus clients who were receiving income from family, other, or had no income source (in general, better versus poorer sources of income).

ANCOVA showed a significant difference in ages among the groups, while the covariate, gender was not significant (p = .524). Post hoc tests showed that the Primary Gambling group

was significantly older than the other two groups, $ps < .001$, while the Secondary Gambling and Substance Problem Only groups did not differ. The level of education also differed significantly among the groups, and again the covariate was not significant. Post hoc tests showed that the Primary Gambling group was significantly more educated than the other two groups, $ps < .001$, while the Secondary Gambling and Substance Problem Only groups did not differ.

Most of the clients had no problem with the law (72.7%). Logistic regression showed males had significantly more problems than females, $p < .001$, and controlling for gender, a significant main effect of group, $p < .001$. The Primary Gamblers had a lower percentage of legal problems than the Secondary Gamblers and Substance Problem Only Group, $ps < .001$.

Slightly more than half (58.9%) of the clients were single (never married). Logistic regression showed no significant effect of gender, but did show a main effect of group, $p < .001$. The Primary Gamblers were less likely to be single (never married) than the Secondary Gamblers and Substance Problem Only Group, $ps < .001$.

Overall, 40.5% of the clients were unemployed, 23.5% were employed either full-time or part-time, and 21.3% were students or in training. Logistic regression showed that males had significantly better types of employment, $p < .001$, and, controlling for gender, a main effect of group, $p < .001$. The Primary Gamblers were more likely to be employed or retired than the Secondary Gamblers and Substance Problem Only Group, $ps < .001$.

Almost an equal number of clients reported being employed (25.0%) as having no income source (26.8%). The covariate, gender, was significant, with males having better sources of income, $p < .001$. There was also a significant main effect of group, $p < .001$. The Primary Gamblers were likely to have better sources of income than the Secondary Gamblers and

Substance Problem Only Group, $ps < .001$, and the Secondary Gamblers were likely to have poorer sources of income than the Substance Problem Only clients, $p = .02$.

These analyses revealed a number of group differences that remained significant, even after gender was controlled using ANCOVA or logistic regression. There was a significant group effect for each of the demographic variables, with Primary Gamblers differing from Secondary Gamblers and Substance Problem Only clients. The Primary Gamblers were more likely to be female, older, been married, better educated, have better employment and better sources of income, and fewer legal problems than the other two groups. As well, the Secondary Gamblers were different from the Substance Only group, having poorer sources of income.

Mental health differences among the groups

Table 2 contains mental health information about each of the three groups. Primary Gamblers have a larger percentage of clients diagnosed with mental illness in the previous 12 months and lifetime, although the difference between groups was only significant for lifetime diagnoses. The Primary Gamblers had significantly more lifetime diagnoses than either the Secondary Gamblers, $p < .001$, or the Substance Only group, $p = .007$, while the Secondary Gamblers had fewer lifetime diagnoses than the Substance Only group, $p = .008$. To examine if these group differences would remain after controlling for client demographic information, a stepwise logistic regression was used with the demographic measures entered on the first step and group entered on the second step. The group differences were no longer significant. A number of demographic covariates were significant. For previous 12 month diagnoses, significantly more diagnoses were found for those with poorer employment, $p < .001$, but with better sources of income, $p = .024$. For lifetime diagnoses, significantly more mental health

diagnoses were found for those who were female, $p = .003$, better educated, $p < .001$, with poorer employment, $p < .001$, but with better sources of income, $p = .001$.

There were significant differences among the groups for two types of most recent diagnosis: anxiety disorders and major depressive disorders. The Primary Gambling group was significantly more likely than the other two groups to have a recent diagnosis of major depressive disorder, ps $< .001$. The Primary Gambling group was also more likely than the Secondary Gambling group to have an anxiety disorder, $p < .001$. When demographic variables were entered as covariates, group differences were still significant for anxiety disorders, $p = .046$, and major depressive disorders, $p = .005$. Significant covariates showed that females were more likely to have both anxiety disorders ($p = .011$) and major depressive disorders ($p < .001$), those who were not single were more likely to have anxiety disorders ($p = .032$) and major depressive disorders ($p = .025$), while those with more education ($p < .001$) but poorer sources of employment ($p = .042$) had significantly more major depressive disorders. When demographic measures were included as covariates, Primary Gamblers remained significantly more likely to have recent diagnoses of major depressive disorder, $p = .016$, and anxiety disorder, $p = .011$, than the Secondary Gamblers, and more likely to have major depressive disorder than the Substance Problem Only group, $p = .016$. As well, the Secondary Gamblers had significantly less anxiety disorder than the Substance Problem Only group, $p = .025$.

Problematic substance use differences among the groups

While 100% of the Substance Problem Only group and Secondary Gambling group (for whom data on this question was not missing) reported a substance addiction, only 23.9% of the Primary Gamblers reported a comorbid substance addiction. The rate of substance comorbidity

of 23.9% for the Primary Gamblers is considerably lower than the rate of 69.6% that is found for calculations using the entire sample of 418 problem gambling clients.

Since the Primary Gamblers had a much lower rate of reported substance problems than the other groups, a direct comparison of the rates of each substance across groups would reflect this main effect. Therefore rates of substance problem were examined only for those clients who reported at least one problem substance (see Table 3). The Primary Gambling group was less likely than the Secondary Gambling group, $p = .002$, and Substance Problem Only group, $p = .05$, to report a problem with cannabis. The Secondary Gambling group was significantly more likely than the Substance Problem Only group to report a problem with alcohol, $p < .001$, and cannabis, $p = .001$.

A number of demographic measures were associated with type of drug problem, in those who reported using drugs. Since the measures were entered simultaneously, the findings reported below are the unique effect of each, not explained by the other demographic measures. Younger clients were more likely to report problems with amphetamines, $p = .016$, cannabis, $p < .001$, cocaine, $p < .001$, hallucinogens, $p < .001$, and medication, $p < .001$. Males were more likely than females to report problems with alcohol, $p < .001$, cannabis, $p < .001$, cocaine, $p < .001$, hallucinogens, $p = .002$, and medication, $p = .006$. Less educated clients were more likely to report problems with alcohol, $p < .001$, cannabis, $p = .026$, and cocaine, $p = .050$. Those with poorer sources of employment and more legal problems were more likely to report problems with alcohol ($ps = .006$ and $.002$, respectively) and cannabis ($ps = .01$ and $.013$, respectively). Cocaine use was also higher in those who were single, $p = .007$, and medication use was higher in those with poorer sources of income, $p < .001$, and poorer employment, $p = .031$. When controlling for these demographic variables, Secondary Gamblers were still more likely than the

Substance Problem Only group to have an addiction problem with alcohol, $p = .041$. None of the other group differences remained after demographic measures were entered.

In summary, the findings show patterns of comorbidity differences among the groups, only some of which disappear when demographic measures are controlled. The Primary Gamblers were significantly more likely to have had a lifetime mental health diagnosis than the other two groups, a major depressive disorder than the other two groups and anxiety disorder than the Secondary Gamblers. When controlling for demographic measures, the differences in anxiety and depression remained significant. The Secondary Gamblers were significantly less likely to have had a lifetime mental health diagnosis and fewer anxiety disorders than the Substance Problem Only group. The anxiety differences remained after controlling for demographic measures.   For type of substance problem, the Primary Gamblers were significantly less likely than the other two groups to report a problem with cannabis, while the Secondary Gamblers reported significantly more problems with cannabis and alcohol than the Substance Problem Only group. After controlling for demographic measures, only the alcohol difference between the Secondary Gamblers and the Substance Problem Only group remained significant.

Discussion

The clients who presented for treatment of their gambling (Primary Gamblers) were quite different from problem gamblers who presented for treatment of a substance addiction (Secondary Gamblers), and from alcohol and/or drug addiction clients who did not have a gambling problem (Substance Addiction Only). There was a striking gender difference: Primary Gamblers were 58% female, while the other two groups were only 36% female. Because of this large difference, and because previous research shows important gender differences in addiction

15

clients (e.g., Desai & Potenza, 2008), the other demographic measures were examined using gender as a covariate. Controlling for gender, Primary Gamblers were found to be significantly more likely than the other two groups to be older, better educated, been married, have better sources of employment and income, and without any legal problems. The Secondary Gamblers were very similar to addiction clients who did not have a gambling problem, except for a few differences that are discussed later.

Significant differences among groups were found on measures of mental health comorbidity. Primary Gamblers had significantly higher rates of lifetime mental illness diagnoses, major depressive disorder, and anxiety disorder (only significantly higher than the Secondary Gamblers). When controlling for all demographic measures, the latter two findings remained significant. This finding contrasts those of Ladd and Petry (2003) who found that gamblers with substance problems had more mental health issues than gamblers without substance problems. More research is needed to clarify the interrelationships among gambling, substance addiction and mental health problems, and the factors underlying these relationships.

Significant group differences were also found on measures of substance addiction comorbidity. First, if the Primary/Secondary distinction were not considered, the rate of substance comorbidity in all the clients with gambling problems would have been 69.6%, which is considerably higher than the rate of 23.9% in the Primary gamblers. Clearly substance comorbidity is not a major characteristic of those clients who are seeking treatment for a gambling addiction. This large difference raises the question of whether a distinction similar to the Primary versus Secondary grouping might also be of value for examining comorbidity in non-client populations. Many problem gamblers may have substance addiction problems, but only a subset of those will have gambling problems that reach a point where they will consider

seeking treatment. Would this subset have lower rates of comorbid substance addiction problems?

Differences were also found in the type of substance problem reported, considering only those who reported at least one problem substance. The Primary group was significantly less likely to report problems with cannabis, while the Secondary Gamblers reported significantly more problems with both alcohol and cannabis than the Substance Problem Only group. When all the demographic measures were entered as covariates, only the higher alcohol problems in the Secondary Gamblers remained.

These findings show that the Primary Gamblers are quite different from both the Secondary Gamblers and Substance Problem Only clients, both in demographic measures, and in rates of comorbid mental health and substance problems. The differences in rates of anxiety disorder and major depressive illness remained even when the demographic measures were entered as covariates. The specific substance use difference, low rates of reported problems with cannabis, disappeared when covariates were entered, likely because it was based on an overall low rate of substance problems in the Primary Gamblers (only 23.9% of the group). These findings again show that the Primary Gamblers are quite different from the other groups.

At a treatment planning level, it is clear that the vast majority of clients presenting for treatment of a gambling problem do not have a comorbid substance addiction. Thus, addiction treatment programs often have two separate treatment programs for problem gamblers: 1) a gambling program that focuses just on gambling and related mental health issues, and 2) an alcohol/drugs/gambling program that addresses all three types of addiction problem. Clearly, most Primary Gamblers would be better served by the former program since they do not have substance addictions needing treatment.

At a theoretical level, the patterns of differences between the Primary and Secondary Gamblers may suggest different etiologies for the development of their gambling problem. The differences found between the Primary and Secondary Gamblers are remarkably similar to the distinction of "emotionally vulnerable problem gamblers" and "antisocial impulsivist problem gamblers" proposed by Blaszczynski and Nower (2002). Nearly a quarter of the Primary Gamblers had a recent diagnosis of depression, and many also had elevated rates of anxiety disorders compared to the Secondary Gamblers. In contrast, the Secondary Gamblers differed significantly from the Primary Gamblers in higher substance use comorbidity and more legal problems. These characteristics are indicative of impulsive and antisocial characteristics. It would appear that those who seek treatment for their gambling problem are a closer fit to the "emotionally vulnerable problem gambler" profile, while individuals seeking treatment for substance addictions who have a comorbid gambling problem are a closer fit to the "antisocial impulsivist problem gambler" profile.

While the Secondary Gamblers and the Substance Problem Only groups were strikingly similar on most demographic measures and types of problematic substances, there were a few intriguing differences. The Secondary Gamblers had poorer sources of income, more problems with alcohol and cannabis, but a significantly lower rate of lifetime diagnosed mental illness and a lower rate of anxiety disorders. These differences could reflect different causal pathways that led one group to develop gambling problems and the other not. Since the Secondary Gamblers shows signs of impulsivity, impulse control may have played a role the development of both their gambling problems and substance use problems (Nower & Blaszczynski, 2006).

A number of demographic measures were significantly related to both mental health and substance addiction problems, even when the other demographic measures were controlled for.

In general, males, younger clients, those with less education, poorer jobs and more legal

problems were more likely to report problems with alcohol and drugs. These findings are

consistent with previous research (e.g., Anthony, Warner, & Kessler, 1994; Grant, 1997;

Langenbucher & Chung, 1995). For mental health problems, females, those with better

education and poorer employment were found to have more mental health diagnoses, specifically

anxiety and major depressive disorders. Again these findings are consistent with previous

findings (e.g., Blanco et al., 2006; Nevid, Rathus, & Greene, 2006).

It should be pointed out that the group distinction, Primary versus Secondary Gambler, is

based on the presenting problem. This is essentially the same distinction as used by Urbanosky

and Rush (2006) – why are the clients presenting for treatment? The present study shows clear

differences in demographic profiles for these two groups, as well as differences in mental health

and substance comorbidity, some of which do not disappear when demographic differences are

controlled for. However, it should be acknowledged that there is an alternative grouping that

might have been considered, namely one based on the presence of a problem rather than the

reason for presenting for treatment. Thus we could have compared those with a gambling but no

substance problem to those with both a gambling and a substance problem. Essentially that

would have meant that a subset of the Primary Gamblers, the 23.9% who also reported a

substance problem, would have been combined with the Secondary Gambling group. We have

examined this subgroup and found they were much more similar to the other Primary Gamblers

than they were to the Secondary Gamblers (data not presented here, but for example, their mean

age was 47.4 which was similar to the mean age of 48.8 in the other Primary gamblers and quite

different from the means of 34 in the other two groups). The important distinction appears to the

reason for seeking treatment. In other words, the feature to consider is not so much whether a

client has a particular addiction problem, but whether that problem is interfering with the person's life to the degree that they have chosen to seek treatment for it. Some people may have a range of addiction problems, including gambling, but these problems do not sufficiently interfere with their lives for them to seek treatment.

Limitations

While the findings are from one geographical centre, and for one four-year time period, there was still an adequate sample size. The data, while collected for clinical practice as well as research purposes, allowed us to identify major differences between subgroups of problem gamblers. These differences illustrate the importance of considering the reason for seeking treatment, not just the presence of a gambling problem. Of course, more research is needed to confirm the value of various typologies of gambling clients, including the Primary versus Secondary Gambler distinction.

<center>Summary</center>

The findings reveal important differences between addiction clients who present for treatment of a gambling problem and those who present for treatment of a substance addiction, but also have a gambling problem. Those who have a primary gambling problem are likely to be female, older, been married, better educated with better employment and sources of income, and fewer legal problems. They are also more likely to have been diagnosed with anxiety or major depressive disorders and have fewer problems with alcohol or drugs. Most of these group differences are independent of gender or other demographic differences: the other demographic differences still appear when gender is controlled for and some of the comorbidity differences still appear when all the demographic variables are controlled.   These findings show the importance of considering those clients who seek treatment for their gambling problem as a

separate subgroup from those with a gambling problem who seek treatment for a different

addiction problem.

Table 1. Demographic characteristics of primary gamblers, secondary gamblers, and substance

addiction only clients

N	Primary Gamblers 138	Secondary Gamblers 280	Substance Problem Only 2178	Statistic (df)	p
Age, $M \pm SD$	48.5±13.1	34.0±13.8	34.1±14.3	$F(2, 2590) = 71.4$	$< .001$
Education, n (%)				$F(2, 2442) = 54.5$	$< .001$
Some Primary	9 (6.7%)	31 (11.5%)	243 (11.9%)		
Some Secondary	25 (18.5%)	160 (59.5%)	1075 (52.6%)		
Completed Secondary	21 (15.6%)	34 (12.6%)	315 (15.4%)		
Some Community College	57 (42.2%)	25 (9.3%)	272 (13.3%)		
Some University	23 (17.0%)	19 (7.1%)	139 (6.8%)		
Male, n (%)	58 (42.0%)	180 (64.3%)	1390 (63.8%)	$\chi^2(2, 2596) = 26.7$	$< .001$
Legal problems, n (%)	12 (8.7%)	91 (32.5%)	605 (27.8%)	$\chi^2(2, 2596) = 28.1$	$< .001$
Relationship status, n (%)				$\chi^2(6, 2564) = 87.5$	$< .001$
Married/partnered	61 (44.2%)	56 (20.1%)	487 (22.7%)		
Separated or divorced	37 (26.8%)	51 (18.3%)	307 (14.3%)		
Single (Never married)	31 (22.5%)	166 (59.7%)	1312 (61.1%)		
Widowed	9 (6.5%)	5 (1.8%)	42 (2.0%)		
Employment status, n (%)				$\chi^2(8, 2511) = 116.0$	$< .001$
Retired	13 (9.5%)	3 (1.1%)	61 (2.9%)		
Employed FT or PT	72 (52.6%)	56 (20.9%)	463 (22.0%)		
Disabled (not working)	21 (15.3%)	25 (9.3%)	244 (11.6%)		
Student (training)	5 (3.6%)	68 (25.4%)	463 (22.0%)		
Not in labour force	26 (19.0%)	116 (43.3%)	875 (41.5%)		
Income source, n (%)				$\chi^2(8, 2282) = 106.1$	$< .001$
Retirement or Insurance	23 (16.9%)	15 (6.2%)	142 (7.5%)		
Employment	69 (50.7%)	46 (19.2%)	388 (20.4%)		
Welfare or disability	23 (16.9%)	53 (22.1%)	521 (27.3%)		
Family support or other	11 (8.1%)	59 (24.6%)	394 (20.7%)		
None	10 (7.4%)	67 (27.9%)	461 (24.2%)		

Note. FT = Full-time, PT = Part-time. To conduct logistic regression, relationship status, employment status, and income status were transformed to dichotomies (see text).

Table 2. Mental health characteristics of primary gamblers, secondary gamblers, and substance

problem only clients

N	Primary Gamblers 138	Secondary Gamblers 280	Substance Problem Only 2178	χ^2 (2, $n = 2596$)	p
Mental illness, n (%)					
Last 12 months	24 (17.4%)	30 (10.7%)	333 (15.3%)	4.80	.09
Lifetime	50 (36.2%)	52 (18.6%)	563 (25.8%)	15.5	< .001
Diagnosis, n (%)					
Anxiety Disorder	12 (8.7%)	4 (1.4%)	110 (5.1%)	11.7	.003
Major Depressive Disorder	34 (24.6%)	19 (6.8%)	187 (8.6%)	42.1	< .001
ADHD	0 (0%)	12 (4.3%)	82 (3.8%)	5.67	.059
Bipolar Disorder	3 (2.2%)	8 (2.9%)	46 (2.1%)	0.64	.726

Note. ADHD = Attention-Deficit/Hyperactivity Disorder.

Table 3. Problem substance use characteristics of primary gamblers, secondary gamblers, and

substance problem only clients who have substance problems

N	Primary Gamblers 33	Secondary Gamblers 258	Substance Problem Only 2178	χ^2 (2, n = 2469)	p
Substance, n (%)					
Alcohol	29 (87.9%)	235 (91.9%)	1787 (82.0%)	13.95	.001
Amphetamines & Stimulants	0 (0%)	10 (3.9%)	49 (2.2%)	3.43	.180
Barbiturates & Benzodiazepines	0 (0%)	11 (4.3%)	74 (3.4%)	4.25	.425
Cannabis	8 (24.2%)	135 (52.3%)	896 (41.1%)	16.21	< .001
Cocaine & Crack	5 (15.2%)	48 (18.6%)	452 (20.8%)	1.23	.540
Hallucinogens	0 (0%)	19 (7.4%)	99 (4.5%)	5.71	.058
Medications	1 (3.0%)	44 (17.1%)	409 (18.8%)	5.71	.057

Note. Medications include over-the-counter codeine, prescription opioids, and steroids.

References

Anthony, J. C., Warner, L. A., & Kessler, R. C. (1994). Comparative epidemiology of

dependence on tobacco, alcohol, controlled substances, and inhalants: Basic findings

from the National Comorbidity Survey. *Experimental and Clinical Psychopharmacology,*

21, 72-77.

Blanco, C., Hasin, D. S., Petry, N., Stinson, F. S., & Grant, B. F. (2006). Sex differences in

subclinical and DSM-IV pathological gambling: Results from the National

Epidemiologic Survey on Alcohol and Related Conditions. *Psychological Medicine, 36,*

943-953.

Blaszczynski, A. & Nower, L. (2002). A pathways model of problem and pathological

gambling. *Addiction, 97*, 487-499.

Centre for Mental Addiction and Health. (2008). *Screening tools for physicians*. Retrieved

June 10, 2009 from

http://www.problemgambling.ca/EN/ResourcesForProfessionals/Pages/ProblemG

amblingAssessmentandTreatmentInformationforPhysicians.aspx.

Crockford, D., & el-Guebaly, N. (1998). Psychiatric comorbidity in pathological gambling: A

critical review. *Canadian Journal of Psychiatry, 43*, 43-50.

Dell'Osso, B., Allen, A., & Hollander, E. (2005). Comorbidity issues in the pharmacological

treatment of pathological gambling: A critical review. *Clinical Practice and*

Epidemiology in Mental Health, 1:21.

Desai,R. A., & Potenza, M. N. (2008). Gender differences in the associations between past-year

gambling problems and psychiatric disorders. *Social Psychiatry and Psychiatric*

Epidemiology, 43, 173-183.

Granero, R., Penelo, E., Martinez-Giménez, R., Álvarez-Moya, E., Gómez-Peña, M., et al. (2009). Sex differences among treatment-seeking adult pathologic gamblers. *Comprehensive Psychiatry, 50*, 173-180.

Grant, B. R. (1997). Prevalence and correlates of alcohol use alcohol use and *DSM-IV* alcohol dependence in the United States: Results of the National Longitudinal Alcohol Epidemiology Survey. *Journal of Studies on Alcohol, 58*, 464-473.

Hodgins, D.C. & el-Guebaly, N. (2000). Recovery from gambling problems: A comparison of resolved and active gamblers. *Addiction, 95*, 777-789.

Hodgins, D. C., Peden, N., & Cassidy, E. (2005). The association between comorbidity and outcome in pathological gambling: A prospective follow-up of recent quitters. *Journal of Gambling Studies, 21*, 255-271.

Hser, Y., Maglione, M., Polinsky, M., & Anglin, M. (1998). Predicting drug treatment entry among treatment-seeking individuals. *Journal of Substance Abuse Treatment, 15*, 213-220.

Ladoucer, R. (2002, June). *Understanding gambling and problem gambling: A step in the right direction*. Paper presented at the meeting of the American Gambling Association Responsible Gaming Lecture Series, Kansas City, MI.

Langenbucher, J., Bavly, L., Labouvie, E., Sanjuan, P. M., & Martin, C. S. (2001). Clinical features of pathological gambling in an addictions treatment cohort. *Psychology of Addictive Behaviours, 15*, 77-79.

Langenbucher, J. W., & Chung, T. (1995). Onset and staging of *DSM-IV* alcohol dependence using mean age and survival-hazard methods. *Journal of Abnormal Psychology, 104*, 346-354.

Leblond, J., Ladoucer, R., and Blaszczyski, A. (2003). Which pathological gamblers will

      complete treatment? *British Journal of Clinical Psychology, 42*, 205-209.

Lesieur, H. R., & Blume, S. N. (1987). The south oaks gambling screen (SOGS): A new

      instrument for the identification of pathological gamblers. *American Journal of*

      Psychiatry, 144, 1184-1188.

Nevid, J. S., Rathus, S. A., & Greene, B. (2006). *Abnormal Psychology in a Changing World* (6th

      ed.). Upper Saddle River, NJ: Prentice Hall/Pearson Education.

Nower, L. & Blaszczynski, A. (2006). Impulsivity and pathological gambling: A descriptive

      model. *International Gambling Studies, 6*, 61-75.

Orford, J. (2003). The fascination of psychometrics: Commentary on Gerstein et al. (2003).

      Addiction, 98, 1675-1677.

Potenza, M. N., Steinberg, M. A., McLaughlin, S. D., Wu, R., Rounsaville, B. J., O'Malley, S. S.

      (2001). Gender-related differences in the characteristics of problem gamblers using a

      gambling helpline. *American Journal of Psychiatry, 158*, 1500-1505.

Pulford, J., Bellringer, M., Abbott, M., Clarke, D., Hodgins, D., & Williams, J. (2009). Reasons

      for seeking help for a gambling problem: The experiences of gamblers who have sought

      specialist assistance and the perceptions of those who have not. *Journal of Gambling*

      Studies, 25, 19-32.

Raylu, N., & Oei, T.P. (2007). Factors that predict treatment outcomes in a community treatment

      agency for problem gamblers. *International Journal of Mental Health and Addiction,*

      5, 165-176.

Rush, B. R., Bassani, D. G., Urbanoski, K. A., & Castel, S. (2008). Influence of co-occurring

mental and substance use disorders on the prevalence of problem gambling in Canada.

Addiction, 103, 1847-1856.

Rush, B.R., Veldhuizen, S., & Adlaf, E. (2007). Mapping the prevalence of problem gambling

and its association with treatment accessibility and proximity to gambling venues.

Journal of Gambling Issues, *20*, 193-214.

Shepherd, R. (1996). Clinical obstacles in administering the South Oaks Gambling Screen in a

methadone and alcohol clinic. *Journal of Gambling Studies, 12*, 21-32.

Slutske, W. (2006). Natural recovery and treatment-seeking in pathological gambling: Results of

two U.S. national surveys. *American Journal of Psychiatry,163*, 297-302.

Turner, N., Jain, U., Spence, W., & Zangeneh, M. (2008). Pathways to pathological

gambling: component analysis of variables related to pathological gambling.

International Gambling Studies, 8, 281-298.

Urbanoski, K.A., & Rush, B.R. (2006). Characteristics of people seeking treatment for

problem gambling in Ontario: Trends from 1998 to 2002. *Journal of Gambling Issues*,

16. Retrieved June 11, 2009, from

http://www.camh.net/egambling/issue16/issue16/jgi_16_urbanoski.html.

Westphal, J., & Johnson, L. (2007). Multiple co-occurring behaviours among gamblers in

treatment: implications and assessment. *International Gambling Studies, 7*, 73-99.