eGambling
THE ELECTRONIC JOURNAL OF GAMBLING ISSUES
research

Go to Current Issue

Intro
Feature
Policy
Research
Clinic
First Person Accounts
Review
Letters to the Editor
Calendar of Events
Archive
Invitation to Contributors

Relationship between gender and substance use among treatment-seeking gamblers

By Tony Toneatto, Senior Scientist, Centre for Addiction and Mental Health, Toronto, Ontario and *Wayne Skinner, Clinical Director, Concurrent Disorders Program, Centre for Addiction and Mental Health, Toronto, Ontario*

Abstract

Very little is known about gender differences in psychoactive substance use among gamblers. In this study, 200 individuals seeking treatment for problem gambling were assessed with respect to lifetime and current use and abuse of licit and illicit substances. As a group, they were found to have experience with psychoactive substances exceeding that reported for the general population. There were no gender differences in patterns of illicit drugs; however, the women gamblers reported greater experience with psychiatric medications over the lifetime and during the treatment and follow-up periods.

Introduction

A considerable body of research, recently reviewed by Spunt, Dupont, Lesieur, Liberty and Hunt (1998), has shown a strong relationship between substance abuse and dependence, and pathological gambling. In general, the research reports higher rates (ranging from two to three times) of alcoholism and other substance use

among gamblers than among the general population (e.g., Abbott & Volberg, 1991; Ladouceur, Dube, & Bujold, 1994; Rupcich, Frisch, & Govoni, 1997). Similarly, rates of pathological gambling seem to be higher among substance-abusing populations than the general population (e.g., Feigelman, Wallisch, & Lesieur, 1998; Roehrich, Sorensen, & Good, 1994; Steinberg, Kosten, & Rounsaville, 1992).

However, Spunt et al. (1998) note the lack of data regarding the effect of gender on substance use among pathological gamblers. Mark and Lesieur's 1992 survey of the gambling research literature found that very few studies included female gamblers; those that did rarely analyzed results according to gender. They observed that the failure to include female gamblers seriously limited the generalizability of the findings.

The purpose of the current study was to describe the relationship between gender and patterns of legal, illicit and prescribed psychoactive substance use in a sample of treatment-seeking pathological gamblers.

Method

Individuals seeking treatment for problem gambling were recruited from addiction and mental health agencies, community mental health professionals, assessment and referral agencies, credit counselling agencies, employee assistance programs as well as directly soliciting participants through advertisements in major and local daily newspapers in Toronto, Canada. Individuals who were referred to the study or responded to newspaper advertisements were invited to participate in the baseline assessment procedure.

The severity of the individual's gambling problem was measured using the Diagnostic and Statistical Manual (DSM-IV) criteria for pathological gambling (American Psychiatric Association, 1994) and the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987), a widely used screen for gambling problems. The Gambling Behavior Questionnaire (Toneatto, unpublished) was used to assess the types and duration of gambling problems, previous gambling treatment, family history of gambling, positive and negative perceptions of gambling and negative consequences of pathological gambling.

Lifetime use, problematic use and treatment history for up to11 psychoactive substances were also measured. Recent use (during the month pre-treatment) and use during the year following treatment were assessed. Substances were classified into two broad categories: drugs (cannabis, cocaine, hallucinogens, inhalants, opiates, stimulants) and psychiatric medications (anti-depressants, anxiolytics,

sedatives, anti-psychotics). Prescription opiates and alcohol were considered separately.

Gambling treatment consisted of one of four modalities: cognitive-behavioural therapy, brief motivational intervention, 12-step therapy and solution-focused therapy. As the treatments were administered in separate geographic locations, random assignment was not possible. All treatments were administered on an outpatient basis and averaged six sessions except for the motivational intervention, which was one session.

Frequency of gambling, money wagered and relapse (i.e. any gambling if the treatment goal was abstinence; excessive gambling if participants did not choose abstinence as the treatment goal) were assessed for the periods: a) 30 days prior to the baseline, b) six months post-treatment and c) 12 months post-treatment. Relapse was assessed as any gambling if the treatment goal was abstinence and as excessive gambling if participants did not choose abstinence as the treatment goal. At the 12-month follow-up assessment, use of psychoactive substances during the preceding year was assessed again. Additional details describing the treatments and the study can be found in Toneatto, Dragonetti and Brennan (unpublished).

Results

Sample characteristics

Table 1 describes the overall demographic and gambling-related characteristics for the sample as a whole. The sample was primarily male, middle-aged, earning a middle income, largely non-partnered, with some college education and generally employed. Almost everyone met clinical criteria for pathological gambling according to DSM-IV or SOGS. All subjects were included in the analysis, however, as these measures were not employed as inclusion criteria, but rather as indicators of the severity of the gambling problem.

At the time of seeking treatment, the individual's gambling problem was typically of several years duration, associated with multiple negative consequences (including substantial total estimated financial losses). Almost half of the sample had sought treatment for gambling previously at Gamblers Anonymous (GA). Participation in other addiction programs was not assessed.

Table 1

Description of sample

Variable	**Total** (*n*=200)
Demographic	
Mean (SD) age in years	41.3 (11.1)
% male	74.9
% married/common-law	48.2
% some college education	30.3
% full-/part-time employment	61.9
Mean (SD) income in thousands	33.0 (23.0)
Gambling-Related	
Mean (SD) SOGS score	12.1 (4.0)
% pathological gamblers, SOGS score > 4	96.0
Mean (SD) DSM-IV symptoms	6.9 (2.2)
% pathological gamblers, DSM-IV 5 symptoms	84.9
Mean (SD) years pathological gambling	7.2 (7.6)
Mean (SD) lifetime financial loss in thousands	90.0 (140.0)
% ever attended GA	47.5
Mean (SD) number of consequences[1]	6.2 (2.2)
Mean (SD) problem gambling behaviors[2]	2.4 (1.6)

[1] maximum 10 [2] maximum 12

Gender and substance use patterns

Lifetime use of psychoactive substances was extensive in this sample (see Tables 2 and 3). The highest use rates were reported for certain psychiatric medications (i.e., anti-depressants and anxiolytics), cannabis, cocaine and prescription opiates (see Table 2). Several gender differences in psychoactive substance use were observed. Females were more likely to report lifetime use of psychotropic medications, primarily anti-depressants (62% vs. 22% for males; χ^2 [1] = 27.3, $p < .0001$), anxiolytics (50% vs. 22% for males; χ^2 [1] = 14.9, $p < .0001$) and sedatives (28% vs. 13% for males; χ^2 [1] = 5.7, $p < .02$).

The women were also more likely to report drug use during the 12-month post-gambling treatment follow-up period as well; anxiolytics (19% vs. 2% for males; χ^2 [1] = 7.0, $p < .01$) and anti-depressants (37% vs. 14% for males; χ^2 [1] = 5.4, $p < .05$). There were no gender differences in the proportion of individuals reporting lifetime use of any specific drugs, history of drug problems or drug treatment, or drug use either pre-treatment or during the 12-month follow-up.

Gender and alcohol use patterns

Males were more likely than females to drink alcohol in the month prior to seeking treatment for gambling (64.3% vs. 26.0%, respectively; χ^2 [1] = 22.7, $p < .0001$) as well as during the 12-month follow-up period (59.7% vs. 24.2%, respectively; χ^2 [1] = 8.3, $p < .005$) (See Table 2.) Males also consumed significantly more alcohol drinks (*M* [*SD*] = 4.4 [6.0]) on any one day in the month prior to treatment than did females (*M* [*SD*] = 1.5 [4.3]; *F* [1: 197] = 9.6, $p < .005$). This margin of difference decreased in the month prior to the 12-month follow-up assessment (*M* [*SD*] = 3.6 [6.3] vs. *M* [*SD*] = 1.3 [3.1], for males and females, respectively; *F* [1: 91] = 4.0, $p < .05$). There were no significant differences in the proportion of males (12.9%) and females (9.1%) who reported a current alcohol problem.

Females also reported more days of abstinence in the month pre-treatment (*M* = 28.4, *SD* = 4.3) than did males (*M* = 23.9, *SD* = 8.1; *t* [197] = -3.72, $p < .0001$). The same was true in the month prior to the 12-month follow-up assessment (*M* = 28.4, *SD* = 4.8 vs. *M* = 23.7, *SD* = 8.7 for females; *t* [91] = -2.82, $p < .01$). There were no gender differences, however, in the lifetime rates of alcohol problems or treatment-seeking for problem gambling.

In addition, there was no significant gender effect of either alcohol use on gambling behaviour (21.0% of males vs. 10.0% of females reported increased gambling when drinking alcohol) or gambling on alcohol consumption (14.4% of males and 12.0% of females reported increased alcohol use when gambling).

Table 2

Patterns of use for individual psychoactive substances, by gender

Substance		**Ever used**		**Ever a problem**		**Ever treated**		**Used in 30 days pre-treatment**		**Used during follow-up period**[1]	
		M[2]	F[3]	M	F	M	F	M	F	M	F
Alcohol	%	na[4]	na	26	24	12	22	664.3	26	59.7	24.2
	n	na	na	22	8	10	7	97	13	37	8
Cannabis	%	67	54	15.3	12	6	6	8.7	8	1.3	4
	n	100	27	23	6	9	3	13	4	2	1
Cocaine	%	30	22	8	10	4	18	0.7	4	0.7	0
	n	45	11	12	5	6	2	1	2	1	0
Opiates	%	7	10	2.7	4	1.3	2	1.3	0	2	0
	n	11	5	4	2	2	1	2	0	1	0
Hallucinogens	%	31	24	6.7	6	3.3	4	0	0	0	0
	n	46	12	10	3	5	2	0	0	0	0
Inhalants	%	5	6	0.7	0	0	0	0	0	0	0
	n	7	3	1	0	0	0	0	0	0	0
Stimulants	%	21	22	6	10	1.3	8	1.3	2	0	0
	n	31	11	9	5	2	4	2	1	0	0

Anti-depressants	%	22	62	1.3	6	0	0	14.7	34	14	37
	n	33	31	2	3	0	0	22	17	7	10
Anxiolytics	%	22	50	4	14	1.3	10	4.7	22	2	19
	n	32	25	6	7	2	5	7	11	1	5
Antipsychotics	%	4	12	0	0	0	2	2.7	8	8	15
	n	6	6	0	0	0	1	4	4	4	4
Sedatives	%	13	28	3.3	16	0.7	8	4	10	6	15
	n	20	14	5	8	1	4	6	5	3	4
Prescribed opiates	%	33	46	4	16	1.3	8	9.3	10	6	15
	n	49	23	6	8	2	4	14	5	3	4

[1]n = 93 [2] Males, n = 149-150 [3]Females, n = 50

[4]Lifetime use of alcohol not assessed.

Gender and aggregated psychoactive substance use patterns

Table 3 describes the relationship of gender and aggregated substance use patterns. More females reported lifetime use of psychiatric medications (χ^2 [1] = 16.7, p < .0001), abuse of medications (χ^2 [1] = 10.2, p < .005), treatment for abuse of medications (χ^2 [1] = 17.0, p < .0001), medication use at the time of seeking treatment for the gambling problem (χ^2 [1] = 17.8, p < .0001) and medication use during the 12-month follow-up period post-treatment (χ^2 [1] = 10.9, p < .001). Frequencies for the use of psychiatric medications also showed similar, significant gender differences. There were no gender differences in the patterns or frequency of drug use.

Table 3

Lifetime, current and follow-up drug and medication use, by gender

Variable	Males	Females
Mean (SD) number of:	% *n*	% *n*
Drugs[1] ever used	70.5 (106)	60.0 (30)
Drugs ever a problem	24.0 (36)	22.0 (11)
Drugs ever treated for	9.3 (14)	10.0 (5)
Drugs used in 30 days pre-treatment	10.0 (15)	10.0 (5)
Drugs used during follow-up period[2]	6.5 (4)	3.0 (1)
Medications ever used[3]	38.7 (58)	72.0 (36)
Medications ever a problem[3]	7.3 (11)	24.0 (12)
Medications ever treated for[3]	1.3 (2)	16.0 (8)
Medications used in 30 days pre-treatment[3]	18.0 (27)	48.0 (24)
Medications used during follow-up period[2,3]	14.5 (9)	46.0 (15)

[1]excluding alcohol [2]$n = 93$

[3]chi-square significant at $p < .0001$ [4]chi-square significant at $p < .005$

Discussion

No study has systematically assessed gender differences in substance use patterns, problematic substance use and substance treatment history among pathological gamblers. The results of the present study suggest that female problem gamblers

reported significantly greater lifetime use of psychiatric medications, in particular anti-depressants, anxiolytics, and sedatives, than male problem gamblers.

This pattern parallels the relationship observed between gender and psychiatric medications in the general Canadian population. In a survey of drug use among Canadians (McKenzie, 1997), more women used tranquilizers (5.3%), sedatives (5.4%) and anti-depressants (4.2%) in the past year than did men (3.4%, 3.7%, 1.7%, respectively).

While the lifetime prevalence of illicit drug use in the Ontario population (e.g., cannabis, 26.8%, cocaine, 4.9%, heroin, 1.1%) is considerably lower than that for legal substances (e.g., nicotine, alcohol) and prescribed medications, the rates are generally twice as high for males as for females (Van Truong, Williams, Timoshenko, 1998; Adlaf, Ivis, Ialomiteanu, Walsh, Bondy, 1997). The present study found the same relationship wherein illicit drug use was higher in males, although not significantly so. While the relationship between gender and substance use appears to be consistent with what is found in the general population, the rates are considerably higher among problem gamblers seeking gambling treatment.

There were no gender differences in the reported rates for problems with, or treatment for, drug, medication or alcohol use. Furthermore, very little drug use was reported at the time that participants were seeking gambling treatment. None of the participants reported that their current substance use was problematic. Nor was there any evidence that gambling behaviour was substituted by increased use of psychoactive substances as a result of treatment, since there was no change in the use of psychoactive substance during the post-treatment period compared to substance use prior to entering gambling treatment.

The relatively high rates of medication usage among treatment-seeking female gamblers suggest higher levels of psychological dysfunction, sufficient to warrant psychopharmacological intervention. It is well-documented that women tend to suffer from mood and anxiety disorders at rates higher (approximately two to three times) than men in the general population and they are also more likely to seek treatment for anxiety and depression (Kessler, et al. 1994; Ross, 1995). Medications would frequently be a component of such treatment.

Problem gamblers have been shown to suffer considerably from concurrent psychiatric symptomatology. Reviews of the literature show that affective disorders and anxiety disorders are particularly common (Lesieur & Blume, 1991; McCormick, Russo, Ramirez & Taber, 1984; Linden, Pope and Jonas, 1986). Specker, Carlson, Edmonson, Johnson and Marcotte (1996) found that almost all of a sample of 40 problem gamblers had had a lifetime mood disorder and most female (but not male) problem gamblers had been diagnosed with an anxiety

disorder during their lifetime. In general, this literature has not examined psychopathology by gender.

The results of this study suggest that substance use among treatment-seeking problem gamblers, while highly prevalent over the course of the lifetime for both genders, does not seem to be a relevant clinical issue. However, the elevated rates of psychotropic drug use, especially among female problem gamblers, suggest that there may be considerable psychiatric comorbidity in this population, which is consistent with other research in this area.

It is not clear from the study whether such psychopathology is functionally associated with the gambling behaviour. The finding that neither gender changed greatly in their use of antidepressants and anti-anxiety medications in the year following treatment for gambling may indicate an independent psychiatric syndrome. Additional research is needed to evaluate the impact of concurrent medication use and/or psychopathology on the outcome and long-term effect of treatments for problem gambling.

References

Abbott, M. & Volberg, R. (1991). *Gambling and Problem Gambling in New Zealand: A Report on Phase One of the National Survey.* Wellington, New Zealand: Department of Internal Affairs.

Adlaf, E.M., Ivis, F., Ialomiteanu, A., Walsh, G. & Bondy, S. (1997). *Alcohol, Tobacco, and Illicit Drug Use Among Ontario Adults: 1977-1996.* Toronto: Addiction Research Foundation.

American Psychiatric Association. Committee on Nomenclature and Statistics. (1994). *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.). Washington, D.C.: American Psychiatric Association.

Feigelman, W., Wallisch, L.S. & Lesieur, H.R. (1998). Problem gamblers, problem substance users, and dual-problem individuals: An epidemiological study. *American Journal of Public Health, 88,* 467-470.

Kessler, R.C., McGonagle, K.A., Zhao, S., Nelson, C.B., Hughes, M., Eshleman, S., Wittchen, H-U. & Kendler, K.S. (1994). Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: Results from the National Comorbidity Study. *Archives of General Psychiatry, 51,* 8-19.

Ladouceur, R., Dube, D. & Bujold, A. (1994). Prevalence of pathological gambling

and related problems among college students in the Quebec metropolitan area. *Canadian Journal of Psychiatry, 139,* 289-293.

Lesieur, H.R. & Blume, B. (1987). The South Oaks Gambling Screen (SOGS): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry, 144,* 1184-1188.

Lesieur, H.R. & Blume, B. (1991). Evaluation of patients treated for pathological gambling in a combined alcohol, substance abuse, and pathological gambling treatment unit using the Addiction Severity Index. *British Journal of Addiction, 86,* 1017-1028.

Lesieur, H.R., Blume, B. & Zoppa, R. (1986). Alcoholism, drug abuse, and gambling. *Alcoholism: Clinical and Experimental Research, 10,* 33-38.

Linden, R., Pope, H. & Jonas, J. (1986). Pathological gambling and major affective disorder. *Journal of Clinical Psychiatry, 47,* 41-53.

Mark, M.E. & Lesieur, H. (1992). A feminist critique of problem gambling research. *British Journal of Addiction, 87,* 549-565.

McCormick, R., Russo, A.M., Ramirez, L. & Taber, J.I. (1984). Affective disorders among pathological gamblers seeking treatment. *American Journal of Psychiatry, 141,* 215-218.

McKenzie, D. (1997). *Canadian Profile: Alcohol, Tobacco & Other Drugs.* Ottawa: Canadian Centre on Substance Abuse.

Roehrich, L., Sorensen, J. & Good, P. (1994). *Opiate dependence, gambling, and HIV risk behavior in a low income population.* Paper presented at the annual meeting of the College on Problems of Drug Dependence, June.

Ross, H. E. (1995). DSM-III-R alcohol abuse and dependence and psychiatric comorbidity in Ontario: Results from the Mental Health Supplement to the Ontario Health Survey. *Drug and Alcohol Dependence, 39,* 111-128.

Rupcich, N., Frisch, G.R. & Govoni, R. (1997). Comorbidity of pathological gambling in addiction treatment facilities. *Journal of Substance Abuse Treatment, 14,* 573-574.

Specker, S., Carlson, G., Edmonson, K.M., Johnson, P. & Marcotte, M. (1996). Psychopathology in pathological gamblers seeking treatment. *Journal of Gambling*

Studies, 12, 67-81.

Spunt, B., Dupont, I., Lesieur, H., Liberty, H.J. & Hunt, D. (1998). Pathological gambling and substance misuse: A review of the literature. *Substance Use and Misuse, 33,* 2535-2560.

Steinberg, M.A., Kosten, T.A. & Rounsaville, B.J. (1992). Cocaine abuse and pathological gambling. *American Journal of the Addictions, 1*, 121-132.

Toneatto, T. The Gambling Behavior Questionnaire. Unpublished manuscript. Toronto: Centre for Addiction and Mental Health

Toneatto, T., Dragonetti, R. & Brennan, J. Efficacy of treatment for problem gambling. Unpublished manuscript. Toronto: Centre for Addiction and Mental Health.

Van Truong, M., Williams, B. & Timoshenko, G. (1998). *Ontario Profile 1998: Alcohol and Other Drugs.* Toronto: Addiction Research Foundation.

issue 1 march 2000

Centre for Addiction and Mental Health
Centre de toxicomanie et de santé mentale

Editorial Contact: phil_lange@camh.net

Subscribe to our automated announcement list: gamble-on@lists.camh.net. Unsubscribe: gamble-off@lists.camh.net

This page was last updated on Wednesday, March 22, 2000 10:37 PM