

## Psychiatry and the Law

# Characteristics of 75 Gambling-Related Suicides in Quebec

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**Objective:** To describe the demographic, psychiatric and social characteristics of pathological gamblers who have completed suicide.

**Method:** The authors examined 75 cases of completed suicide in which pathological gambling behaviour was implicated. The characteristics of these cases were extracted from the Quebec Coroner's files by two forensic psychiatrists.

**Results:** Victims were married in 52.0 per cent of cases, and at least 45.3 per cent were employed. Only 25.3 per cent had made a previous suicide attempt, and most (64.0 per cent) had given no prior warning of suicidal intent to either family or psychiatrists. A history of substance abuse was present in about one-third of the sample, and one-quarter were intoxicated with alcohol at the time of death. Most victims had suffered financial and marital losses as a result of their gambling behaviour.

**Discussion:** These results suggest that pathological gamblers who commit suicide differ from nongamblers. Major psychiatric illness and suicidal intent may be more difficult to identify, which potentially leads to underestimates of suicidal risk in individual pathological gamblers. The impulsiveness that characterizes pathological gambling behaviour, in combination with substance abuse and multiple losses, put this population at high risk for suicide. We suggest that, given the growing prevalence of pathological gambling, suicide and suicide prevention in this population should be further studied.

### Résumé : Caractéristiques de 75 suicides liés au jeu pathologique au Québec

**Objectif :** Décrire les caractéristiques démographiques, psychiatriques et sociales des joueurs pathologiques qui se sont suicidés.

**Méthode :** Les auteurs ont examiné 75 cas de suicides complétés mettant en cause un comportement de jeu pathologique. Les caractéristiques de ces cas ont été tirées des dossiers du coroner du Québec par deux psychiatres légistes.

**Résultats :** Les victimes étaient mariées dans 52,0 % des cas, et au moins 45,3 % avaient un emploi. Seulement 25,3 % avaient précédemment attenté à leurs jours, et la plupart (64,0 %) n'avaient donné aucun avertissement d'intention suicidaire à leur famille ou à leur psychiatre. Des antécédents d'abus de substance étaient présents chez environ un tiers de l'échantillon, et un quart était intoxiqué par l'alcool au moment du décès. Une majorité des victimes avaient subi des pertes financières et conjugales par suite de leur comportement de jeu pathologique.

**Conclusion :** Ces résultats indiquent que les joueurs pathologiques qui se suicident diffèrent des non-joueurs. La maladie psychiatrique grave et l'intention suicidaire peuvent être plus difficiles à déceler, ce qui peut mener à une sous-estimation du risque de suicide chez les joueurs pathologiques individuels. L'impulsivité qui caractérise le comportement de jeu pathologique, combinée avec l'abus de substance et les pertes multiples place cette population à risque élevé de suicide. Étant donné la prévalence croissante du jeu pathologique, nous suggérons d'étudier plus à fond le suicide et la prévention du suicide chez cette population.

**Key Words:** pathological gambling, forensic psychiatry, suicide

Problem gambling and the increase in gambling behaviour among both adults and teens have been receiving increasing attention in the Canadian media over the past few years. Quebec was one of the first provinces to permit video lotteries and now has three casinos. A recently released report from Loto-Québec indicates that profits from gambling in Quebec in 2002 reached \$1.446 billion, with \$507 million of that total coming from video lotteries (1). In the province of Quebec in particular, there have been numerous reports of gambling-related suicides. In our positions as coroners with the Province of Quebec (Dr. Bourget and Dr. Gagné), we were asked to examine files of suicide victims for links with gambling behaviour. This study reports the results of this preliminary survey.

Pathological gambling has been included in the DSM since DSM-III in 1980 (2) and is classified as an impulse control disorder. The essential feature of the disorder is the presence of persistent and recurrent maladaptive gambling behaviour. The most widely used epidemiologic instrument for determining the prevalence of pathological gambling is the South Oaks Gambling Screen (SOGS), which is a 20-item scale derived from DSM-III criteria (3). Subjects scoring five or more on this scale are

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classified as pathological gamblers, while those scoring three or four are classified as problem gamblers. Prevalence estimates of pathological gambling in the American general population range from 0.77 to 1.5 per cent (46), while an additional 2.4 to 2.8 per cent of the population are found to be problem gamblers. Demographically, pathological gamblers are more likely to be men (4,7) and to be poorly educated (5,6).

There are no Canadian national studies on the prevalence of pathological gambling. Bland and others found a lifetime prevalence of pathological gambling in the Edmonton population of 0.42 per cent, using the DSM-III Diagnostic Interview Schedule (8). In 1991, Ladouceur (using the SOGS) found that 1.2 per cent of a Quebec sample met criteria for pathological gambling and a further 2.6 per cent were "problem gamblers" (9). When he replicated the study seven years later, the prevalence of pathological gambling in the population had increased to 2.1 per cent, an increase of 75 per cent (10). Expanded opportunities for gambling in the province of Quebec over this time were hypothesized to be a possible cause for the increase.

Comorbidity studies have found a strong association between pathological gambling and substance use disorders, particularly alcohol abuse and dependence (11,12). Subjects with alcohol dependence who are pathological gamblers have been found to have a younger age of onset and a longer duration of alcohol dependence, compared with alcoholics without an impulse control disorder (13).

There is a high prevalence of affective disorders in pathological gamblers seeking treatment (14,16), with estimates of major depression in these samples ranging from 30 to 76 per cent. It has been argued that sampling bias plays a large role in this finding (10), since community samples show that only about 10 per cent of pathological gamblers seek treatment (7,8). However, there is some evidence that pathological gamblers who do not seek treatment also have high rates of affective disorders. For example, Black and Moyer recruited subjects through advertisements and established that, following application of recognized diagnostic instruments, 17 per cent met criteria for mania and 50 per cent met criteria for major depression or dysthymia (17).

Pathological gamblers have high rates of suicidal ideation and suicide attempt. In the community sample from Edmonton studied by Bland and others, 13.3 per cent of pathological gamblers had a history of suicide attempts (7). Ladouceur and others found that, among college students in Quebec identified by survey as pathological gamblers, 26.8 per cent had a history of suicide attempts (18). Studies involving pathological gamblers who seek help have found that 36 to 50 per cent have a history of suicidal ideation, and 12 to 16 per cent have a history of suicide attempts (13,15). A study of suicidal behaviour among members of Gamblers Anonymous found that 13 per cent had a history of suicide attempts, and 48 per cent had a history of suicidal ideation (19). In this study, those with a history of being suicidal in the past began

gambling at an earlier age and had a trend to being more serious gamblers, compared with gamblers who had never been suicidal.

Given that being male and a history of suicide attempts, affective disorder and substance abuse are all significant risk factors for completed suicide, one might expect that an increase in gambling behaviour and pathological gamblers might increase suicide rates. Phillips and others examined computerized mortality data for Las Vegas, Reno and Atlantic City and found abnormally high suicide levels among out-of-state visitors to these cities (20). The rates were highest for Las Vegas, where suicides accounted for 4.28 per cent of visitor deaths. In Atlantic City, the elevated suicide rates appeared only after gambling casinos were opened.

There are very few data in the literature describing the characteristics of pathological gamblers who have completed suicide. A brief paper by Lester and Jason examined all deaths by suicide (seven) among visitors to Atlantic City casinos between 1982 and 1986 (21). They noted that, based on the coroner's reports, six of the seven were clearly psychiatrically disturbed; four were reported to have depression. Three of the subjects had lost significant sums of money immediately before committing suicide. They had "created situations for themselves from which escape was difficult," as they could not afford to lose the money.

## Method

This is a retrospective clinical study, based on the examination of coroner's files from the province of Quebec over a six-year period between 1994 and 2000. From these files, 75 consecutive individuals known to indulge in gaming and gambling who committed suicide were identified. All records were reviewed and compiled by the same two investigators, who are coroners with psychiatric backgrounds. The data were coded for computer analysis using the Statistical Package for Social Sciences (22). Descriptive statistics including mean, standard deviation, frequency and percentage were selected where appropriate.

## Results

### *Characteristics of Victims*

Of the 75 victims, 64 (85.3 per cent) were men, and 11 (14.7 per cent) were women. They ranged in age from 21 years to 71 years (mean age 44.8 years, SD 10.1) at the time of their death. Thirty-nine of 75 (52.0 per cent) were married, 20 (26.7 per cent) were separated or divorced, 13 (17.3 per cent) were single, two (2.7 per cent) were widowed and the civil status was unknown in one individual. The work status was also recorded: 34 of 75 (45.3 per cent) held stable employment, 16 (21.3 per cent) were unemployed, three (4.0 per cent) were retired and one (1.3 per cent) was on sick leave. This information was not available in 21 cases (28.0 per cent).

### *Characteristics of Gambling*

Very little information is available on the specific gambling patterns of the deceased. In most instances, relatives were aware of a problem but did not know the extent of it nor the specific impact it had on the victims other than the financial difficulties or marital strife it imposed on them. A history of gambling was nevertheless documented in 73 cases (97.3 per cent). Two cases of 75 (2.6 per cent) merely included a mention that the deceased had been gambling money in the videopoker machine and the casino prior to their death. This was not considered to be sufficient evidence to conclude that they were severe gamblers. Most victims (70/75, 93.3 per cent) had financial problems, and it was established that 61 (81.3 per cent) experienced severe financial difficulties as a result of the gambling behaviour. The gambling behaviour was associated with marital problems in 26 individuals (26/75, 34.7 per cent), and 18 of these (18/26, 69.2 per cent) experienced a marital separation.

### *Characteristics of suicides*

Most suicides occurred in the residence of the deceased (49/75, 65.3 per cent). The most common method was hanging (36/75, 48 per cent), followed by use of a firearm (23/75, 30.7 per cent) and carbon monoxide poisoning (7/75, 9.3 per cent). The remaining nine individuals (12 per cent) used other methods.

In most suicides (48/75, 65.3 per cent), there was no prior warning or psychiatric contact. Ten individuals (13.3 per cent) had consulted a psychiatrist, 12 (16 per cent) had mentioned suicidal intent to their family and three (4 per cent) had divulged suicidal intent to another person within one month of the fatal event. Suicide notes were found in 36 of 75 individuals (48.6 per cent).

There was one instance of a suicidal pact, with both spouses hanging themselves. In one instance, the suicidal act took place just prior to the arrest of a man who was wanted by the police for the murder of a brother-in-law.

About one-quarter of victims (21/75, 28 per cent) were intoxicated with alcohol at the time of their death.

### *Psychiatric History and Diagnosis*

An active psychiatric illness at the time of death could be determined for 39 of the 75 victims (52 per cent). In fact, 25 (33.3 per cent) had a diagnosis of major depressive disorder, three had a diagnosis of schizophrenia or other psychosis and nine had a diagnosis of adjustment disorder. While over one-half of the victims (38/75, 50.7 per cent) did not have a psychiatric history, over one-third (32/75, 42.7 per cent) had been treated for psychiatric problems in the past. A history of past suicide attempts was present in 19 individuals (25.3 per cent). Most (46/75, 61.3 per cent) had never attempted suicide. The data were lacking for 10 people (13.3 per cent).

Over one-third of the victims (29/75, 38.7 per cent) had a background of abusing alcohol and (or) drugs. Substance

**Table 1 Motives for suicide**

	Frequency	Percent
Psychiatric only	3	4.0
Gambling only	26	34.7
Psychiatric and gambling	21	28.0
Intoxication and gambling	6	8.0
Psychiatric, gambling and intoxication	17	22.7
Missing data	2	2.7
Total	75	100.0

abuse history was negative in 34 (45.3 per cent), while the information was not available in 12 cases (16 per cent).

### *Motivation for the Suicidal Act*

Table 1 examines the relative role of three major contributing elements in the suicide of the victims. Gambling in its own right was a motivation for the suicide in 34.7 per cent of the cases. About one-half of the suicides occurred against a combination of gambling and psychiatric problems. In 30.7 per cent of the sample, acute intoxication was associated with gambling and (or) psychiatric problems.

In most cases, the victims had suffered many losses as a result of their gambling behaviour or personal life circumstances. These included significant financial losses (42/75, 56 per cent), spousal rupture (5/75, 6.7 per cent), the loss of social or professional status (1/75, 1.3 per cent) or a combination of the above in varying degrees (22/75, 29.3 per cent).

### **Discussion**

This study involves subjects who completed suicide and were then identified as having had a gambling problem at the time of death. As far as we are aware, this is not a population that has been written about in the literature. However, there are many similarities between our population and other studies of clinical populations. The substance abuse rate of 38.7 per cent is consistent with the range of 25 to 63 per cent found in the literature (10). The rates for previous suicide attempt (25.3 per cent) and known depression (33.3 per cent) are also within the ranges seen among help-seeking pathological gamblers (13–15).

There appear to be some possible differences between gamblers in our study who completed suicide and suicides in general. Demographically, 45.3 per cent of our sample were employed, and 52 per cent were married. In the general population, marriage and employment are felt to be

protective against risk of suicide. One-half of the sample had no apparent psychiatric diagnosis, and two-thirds had apparently given no indication to either families or professionals that they were at risk for suicide. The 25.3 per cent rate of previous suicide attempt was low compared with the rate quoted in the literature for the general population of suicide completers of 40 per cent (23). These findings suggest that it may be more difficult to predict suicide in pathological gamblers, at least using standard risk factors as a guide. One should consider the possibility that in most cases the suicidal act was an impulsive one. This is consistent with the fact that pathological gambling itself is classified as an impulse control disorder. The finding that 28 per cent of the victims were intoxicated at the time of the suicide is supportive of this conclusion, as is the high percentage that incurred significant losses of a financial or marital nature prior to their deaths.

This high level of impulsivity should not mean that it would be impossible to identify pathological gamblers at increased risk for suicide. Custer observes that pathological gamblers go through distinct phases, with preoccupation with gambling and requests for "bail-out" from family members generally preceding the "desperation phase," which includes "a state of panic" and suicidal ideation (24). In other words, the more heavily a gambler is involved in gambling and the more significant his or her losses, the higher is the risk for suicide. This is somewhat analogous to suicide risk in an alcoholic. We suggest that mental health professionals should consider the presence of pathological gambling itself to be a risk factor for suicide and that attempts should be made to assess the severity of the condition and to encourage patients to engage in treatment directed at the pathological gambling. Inpatient treatment programs following an addictions model (25) and outpatient treatment with serotonin reuptake inhibitors, such as fluvoxamine (26), have been found to be effective treatments for this disorder.

It is of particular concern that the number of suicides in Quebec linked to pathological gambling rose sharply from 1998, when there were six, to 1999, when 31 such suicides are recorded. The total number of suicides in Quebec in 1998 was 1333, and in 1999 this increased to 1605 (27), indicating that the increase in gambling-related suicides is disproportionately high. For the year 2000, 20 gambling-related suicides have been reported, which indicates that there has been an overall increase and possibly an upward trend. The increase in gambling-related suicides is of particular interest given the increase in pathological gambling in Quebec reported by Ladouceur (9) and is further confirmation that pathological gambling has become a serious public health problem.

This study was a review of coroner's case files concerning gambling-related suicides, which has some important limitations. Information in these files is based on reports by family members or other sources, such as suicide notes. Linkages between suicides and pathological gambling may have been missed, resulting in an

underreporting of cases. Similarly, rates of depression, psychiatric contact and substance abuse in these subjects may be underestimated.

Many of these limitations will be addressed by a future planned study, which will be a case-control study design comparing gambling-related suicides to other completed suicides in Quebec. Other future directions for study may include "psychological autopsy" approaches, which could produce more precise information on the specific factors influencing suicide in these individuals.

## Conclusions

We have reviewed a case series of completed suicides associated with pathological gambling in the province of Quebec. Suicide in this population appears to be linked to multiple losses that are most likely a direct result of the gambling behaviour itself. Clinicians may need to give greater weight to factors such as severity of pathological gambling and financial losses when attempting to predict the risk of suicide in this population.

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## References

1. Le Journal de Montréal. 19 juin 2003. p. 57.
2. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 3rd ed. Washington (DC): American Psychiatric Association; 1980.
3. Lesieur HR, Blume SB. The South Oaks Gambling Screen (SOGS): a new instrument for the identification of pathological gamblers. *Am J Psychiatry* 1987;144:1184-8.
4. Commission on the Review of the National Policy Towards Gambling. Gambling in America. Washington (DC): US Government Printing Office; 1976.
5. Volberg RA, Steadman HJ. Refining prevalence estimates of pathological gambling. *Am J Psychiatry* 1988;145:502-5.
6. Volberg RA, Steadman HJ. Prevalence estimates of pathological gambling in New Jersey and Maryland. *Am J Psychiatry* 1989;146:1618-9.
7. Wolkowitz OM, Roy A, Doran AR. Pathologic gambling and other risk-taking pursuits. *Psychiatr Clin North Am* 1985;8:311-21.
8. Bland RC, Newman SC, Orn H, Stebelsky G. Epidemiology of pathological gambling in Edmonton. *Can J Psychiatry* 1993;38:108-12.
9. Ladouceur R. Prevalence estimates of pathological gambling in Quebec. *Can J Psychiatry* 1991;36:732-4.
10. Ladouceur R, Jacques C, Ferland F, Giroux I. Prevalence of problem gambling: a replication study 7 years later. *Can J Psychiatry* 1999;44:802-4.
11. Crockford DN, el-Guebaly N. Psychiatric comorbidity in pathological gambling: a critical review. *Can J Psychiatry* 1998;43:43-50.
12. Smart RG, Ferris F. Alcohol, drugs and gambling in the Ontario adult population, 1994. *Can J Psychiatry* 1996;41:36-45.
13. Lejoyeux M, Feuché N, Loi S, Solomon J, Adès J. Study of impulse-control disorders among alcohol-dependent patients. *J Clin Psychiatry* 1999;60:302-5.

14. Beaudoin CM, Cox BJ. Characteristics of problem gambling in a Canadian context: a preliminary study using a DSM-IV-based questionnaire. *Can J Psychiatry* 1999;44:483-7.
15. Linden RD, Pope HG, Jonas JM. Pathological gambling and major affective disorder: preliminary findings. *J Clin Psychiatry* 1986;47:201-3.
16. McCormick RA, Russo AM, Ramirez LF, Taber JI. Affective disorders among pathological gamblers seeking treatment. *Am J Psychiatry* 1984;141:215-8.
17. Black DW, Moyer T. Clinical features and psychiatric comorbidity of subjects with pathological gambling behavior. *Psychiatr Serv* 1998;49:1434-9.
18. Ladouceur R, Dube D, Bujold A. Prevalence of pathological gambling and related problems among college students in the Quebec metropolitan area. *Can J Psychiatry* 1994;39:289-92.
19. Frank ML, Lester D, Wexler A. Suicidal behavior among members of Gamblers Anonymous. *Journal of Gambling Studies* 1991;7:249-54.
20. Phillips DP, Welty WR, Smith MM. Elevated suicide levels associated with legalized gambling. *Suicide Life-Threat Behav* 1997;27:373-8.
21. Lester D, Jason D. Suicides at the casino. *Psychological Reports* 1989;64:337-8.
22. SPSS Inc. SPSS for Windows. release 8.0.0, standard version, Evanston (IL): SPSS Inc; 1989-1997.
23. Sadock BJ, Sadock VA. Kaplan and Sadock's comprehensive textbook of psychiatry. Philadelphia (PA): Lippincott; 2000. p 2039.
24. Custer RL. Profile of the pathological gambler. *J Clin Psychiatry* 1984;45(12)(Section 2):35-8.
25. Taber JI, McCormick RA, Russo AM, Adkins BJ, Ramirez LF. Follow-up of pathological gamblers after treatment. *Am J Psychiatry* 1987;144:757-61.
26. Hollander E, DeCaria CM, Mari E, Wong CM, Mosovich S, Grossman R, Begaz T. Short-term single-blind fluvoxamine treatment of pathological gambling. *Am J Psychiatry* 1998;155:1781-3.
27. Coroner's Office of Quebec. Annual report. Quebec (QC): Publications of Quebec; 1999.