GAMBLING BEHAVIOR OF ADOLESCENT GAMBLERS

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PH 15/032

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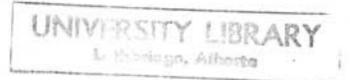
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Abstract

An adolescent version of the South Oaks Gambling Screen was administered to 965 high school students, aged 14 to 19 years, in the city of Windsor, Ontario. Ninety percent of the adolescents were involved in gambling activities and a substantial proportion of these were engaged in underage gambling. High levels of problem gambling behaviors were found. Problem gambling behaviors were found to be related to the number of different gambling activities and the amount of money gambled. Problem gambling was defined as a score of five or more on the SOGS-RA screen utilizing a scoring method that parallelled the SOGS scoring method. Problem gambling levels were estimated to be 8.1%±1.8% of the adolescent sample. There were significant gender differences in the level of problem gambling, but no significant difference with age was found.



Gambling Behavior of Adolescent Gamblers

Early studies on the prevalence of problem and pathological gamblers focused on the adult segment of the population. Recent studies have also focused on the prevalence of problem gambling among adolescents and the characteristics of adolescent gamblers. These adolescent studies have employed a variety of methods to measure problem gambling levels and have produced a wide range of estimates of problem gambling levels. Lesieur, and Klein (1987) surveyed New Jersey high school students using a questionnaire that tapped gambling activities and problem gambling behavior. A pathological gambling signs index was developed using questionnaire items that related to the DSM-III (American Psychiatric Association, 1980) criteria for pathological gambling. Ninety-one percent of the adolescents had gambled in their lifetime and 5.7% were considered to show signs of pathological gambling. The pathological gambling signs index (Lesieur & Klein, 1987) was used by Ladouceur and Mireault (1988) in a survey of Quebec City area high school students. The study found that 3.6% of the adolescent sample were pathological gamblers according to the cumulative gambling signs index (Lesieur & Klein, 1987), but only 1.7% were estimated to be pathological gamblers when DSM-III (American Psychiatric Association, 1980) criteria were used as a basis for the estimate.

The SOGS-RA adolescent gambling screen was developed by Winters, Stinchfield, and Fulkerson, (1993a), by modifying the wording of the adult SOGS screen (Lesieur & Blume, 1987, 1993) to reflect adolescent gambling experiences and reading levels.1 Three groups were identified: problem gamblers (SOGS-RA scores of four or more), at risk gamblers (SOGS-RA scores of two or three), and no gambling problems (SOGS-RA scores of zero or one). The other significant change in the scoring methodology for the SOGS-RA as compared to the adult SOGS was the collapsing of nine scored items relating to borrowing to support gambling activities, e.g., borrowing from friends or sold personal property, to one scored item "Have you ever borrowed money or stolen something in order to bet or cover gambling debts in the past 12 months?" This change was based on the assumption that every source for obtaining money to support gambling activities does not represent a significantly different sign or symptom and does not warrant an individual score. As a result the total number of scored items was reduced from 20 in the adult SOGS screen to 12 in the adolescent SOGS-RA screen. In this initial study by Winters, Stinchfield and Fulkerson (1993a) 3.5% of the sample were considered problem gamblers, 9.3% at risk gamblers and 87.3% did not have gambling problems. Subsequently, Winters, Stinchfield, and Fulkerson (1993b) modified the SOGS-RA scoring system. Acknowledging that there is no well defined definition of problem gambling in adolescents, they

combined the SOGS-RA scores with frequency of gambling to produce a composite index which was used to classify respondents into three groups.

"No Problem Gambling - No history of gambling: or gambling within the past year less than weekly and SOGS-RA score of 0.

At Risk Gambling - Weekly or daily gambling and SOGS-RA score of 1; or gambling less than weekly and SOGS-RA score of 2+.

Problem Gambling - Weekly or more often gambling, and SOGS-RA score of 2+; or daily gambling regardless of SOGS-RA score."

This scoring system was applied to a survey of 702 Minnesota adolescents aged 15 to 18 years (Winters, Stinchfield, & Fulkerson, 1993), where it was found that 8.7% were in the "problem gambling" category, 17.2% were in the "at risk" gambling category and 74.2% were in the "no problem gambling" category.

Volberg (1993) surveyed 13 to 17 years old Washington State adolescents using a multidimensional adaptation of the SOGS screen (Lesieur & Blume, 1987). The criteria or dimensions for identification of problem gambling behavior were: frequency of gambling, problem behavior, and borrowing difficulties. Combinations of these three factors were used to classify adolescents into three groupings: non-problem gamblers (90.1% of the sample), at risk gamblers (9% of the sample), and problem gamblers (0.9% of the sample). Using a similar criteria as Volberg, Wallisch (1993) surveyed Texas adolescents

with a modified SOGS screen. This survey found 5% problem gamblers, and 11.5% at risk gamblers.

In addition to significant though varying estimates of problem gambling among adolescents, these adolescent surveys have also shown a variety of common characteristics of adolescent gamblers. Participation rates in gambling activities are typically high in adolescent samples, ranging from the upper 70% range to the lower 90% range (Ide-Smith, & Lea, 1988: Ladouceur & Mireault, 1988: Lesieur, & Klein, 1987: Volberg, 1993: Winters, Stinchfield, & Fulkerson, 1993a). Problem gambling has been found to be associated with a variety of other problem behaviors, such as, tobacco, alcohol and drug abuse, truancy and academic difficulties (Fisher, 1992, 1993: Huxley & Carroll, 1992: Lesieur & Klein, 1987: Volberg, 1993: Wallisch, 1993). These studies suggest that gambling is not just a benign activity of youth. A number of studies have found higher levels of problem gambling in adolescents who reported parental problem gambling (Fisher, 1993: Jacobs et al., 1989: Lesieur & Klein, 1987: Winters, Stinchfield & Fulkerson, 1993b).

A number of methods has been used to assess the extent of problem gambling among adolescents and measures of reliability and validity are usually not available for the various measures. The various studies have produced a wide range of estimates of problem gambling in the adolescent populations

studied and it is not clear whether these differences are due to differences in the population, differences in the various methodologies, the number of gambling activities available, or a combination of these factors.

Gender differences have been found in participation rates and especially in the percentage of problem or at risk gamblers. Previous studies have found a consistently high ratio of male to female problem gamblers, with the male to female ratio varying from 3.5:1 to 20:1 (The Canadian Foundation on Compulsive Gambling [Ontario], 1994: Volberg, 1993: Wallish, 1993: Winters, Stinchfield & Fulkerson, 1993). Recent studies have shown either small differences between the percentage that participate in gambling activities between males and females (Ide-Smith & Lea, 1988: Volberg, 1993) or moderate differences, i.e., 1.5:1 to 2:1 (The Canadian Foundation on Compulsive Gambling [Ontario], 1994: Wallish, 1993).

The recent studies of problem gambling behavior among adolescents in the Province of Ontario can provide a useful comparison for the present study of adolescent gambling behavior in the City of Windsor. The Canadian Foundation on Compulsive Gambling [Ontario] (1994) conducted a telephone survey of 400 adolescents, between the ages of 12 to 19 years, in the Province of Ontario. The survey utilized the adult SOGS screen, and found that 65% of the sample had participated in gambling activities in the previous year and that 4% of the

sample were probable pathological gamblers, and 33% had some gambling problems. The cutoff scores used for the SOGS screen were five or more for probable pathological gambling and one to four for problem gambling. The conventional cutoff score used in adult SOGS based gambling surveys for problem gambling is three or four making it impossible to compare the Ontario study results for problem gambling with other studies.

The present study was undertaken to provide baseline information on the prevalence of problem gambling, characteristics of gamblers, gender difference among gamblers, risk factors, and problem gambling behaviors of adolescents, in the Windsor area prior to the opening of the Windsor casino. The temporary facility for the casino was opened in May 1994, and is expected to be replaced by a permanent casino facility in 1997. The casino is currently averaging approximately 16,000 visitors per day. Follow up surveys are planned for one year after the opening of the temporary casino, May to November 1995, and three years after the opening of the temporary casino, May to November 1997.

Method

Participants

The subjects were 965 grade 10 to grade 13 high school students (14 to 19 years of age) recruited from three geographically separated high schools in the City of Windsor. School principals volunteered their schools for the study. The number of students was balanced across the three schools (313, 315 and 328 respectively). The school principals selected the classrooms for the study to provide representation across the grades 10, 11, 12, and 13 (247, 242, 256, & 190 students respectively), and to meet scheduling constraints. The survey was carried out from February 12, 1994 to February 22, 1994.

Measures

The SOGS-RA (Winters, Stinchfield & Fulkerson, 1993a; Winters,

Stinchfield & Kim, 1995) was used to assess gambling activities and the extent of
problem and at risk gambling behavior in the sample. The SOGS-RA collected
information on lifetime and the prior year's participation levels in 13 gambling
activities common in the Windsor area, parental gambling levels, and the 12
scored problem behaviors of the SOGS-RA screen. Those adolescents who
endorsed four or more of the problem behaviors were considered "problem

gamblers" and those who endorsed two or three problem behaviors were considered "at risk gamblers".

Procedures

The SOGS-RA (Winters, Stinchfield & Fulkerson, 1993a) was administered to an entire class at a time in the normal class setting. Prior to the administration of the SOGS-RA the various types of gambling activities were explained to the students. Although, the classroom teachers were present during the administration of the screen they took no part in its administration.

Participation was voluntary and anonymous, and only 0.9% of the students refused to participate.

Results

Thirty students' SOGS-RA questionnaires were rejected either because they were incomplete or illegible. Of a total useable sample of 935, 46.6% were males and 53.4% were females. The average age was 16.5 years with 0.2% of the sample 14 years old, 24.2% 15 years old, 26.1% 16 years old, 24.9% 17 years old, 18.2% 18 years old, and 6.4% 19 years old. Average full time income of the census tracts surrounding each of the three schools (Statistics Canada, 1992) was

calculated as a measure of the social economic status of the school districts. The average full time income for males was \$42,270 versus \$41,132 for the city as a whole (+2.8%) and for females was \$26,467 versus \$26,815 for the city as a whole (-1.3%). Of the sample 96.2% had gambled in their lifetime and 90.8% had gambled in the year prior to the completion of the questionnaire. A summary of lifetime gambling activities for the total sample and by gender is given in Table 1, and a summary of gambling activity in the last year for the whole sample is given in Table 2.

insert Tables 1 & 2 approximately here

Only two lifetime gambling activities differed significantly with age: bingo, $X^2(8, N=928) = 45.9$, p<.001, and casino gambling $X^2(8, N=928) = 37.0$, p<.001. In each case gambling activities increased with age. 68.7% of the sample had bet a maximum of \$10 on any one occasion, and 4.9% had gambled \$100 or more on at least one occasion.

To investigate the effects of the various approaches to scoring the SOGS-RA, three alternate approaches were employed to estimate the rate of problem and at risk gambling in the sample. First, the method of Winters, Stinchfield, and Kim (1995) was used which bases the levels of problem and at risk gambling on SOGS-RA cut off scores of two to three and four or more respectively, and 12 scorable items. Using this method 10.3%±2.0% of the sample were found to be problem gamblers and 16.7%±2.4% at risk gamblers. A 95% confidence interval was used for these and all subsequent confidence interval calculations. Second, the SOGS-RA was scored in a manner closely approximating the adult SOGS screen. To score the SOGS-RA in the same manner as the adult SOGS the individual questions on borrowing behavior were scored separately as in the adult screen. Although there is one less item addressing borrowing behaviors in the SOGS-RA than the adult SOGS, hence, making 19 scorable items instead of the SOGS-RA items have been selected to represent all significant areas of adolescent borrowing behavior and as a result are equivalent to the items of the adult SOGS. With the adult scoring method scores of three or four are indicative of at-risk gambling and 5 or more are indicative of problem gambling. In the present sample 8.1%±1.8% were found to be problem gamblers and 9.4%±1.9% at risk gamblers. Third, the multi-factor approach of Winters, Stinchfield, and Fulkerson (1993) was utilized to develop estimates of at risk and problem gambling levels. The multi-factor approach resulted in an estimated 21.1%±2.6% problem gamblers and 13.4%±2.2% at risk gamblers in the sample.

The adult scoring of the SOGS-RA screen will be utilized for subsequent analysis of gambling behavior. The SOGS-RA scoring method of Winters,

Stinchfield, and Kim (1995) places less emphasis on the dimension of obtaining money from different sources in the estimation of problem gambling than the SOGS screen. However, the endorsement levels of borrowing in Table 3 show that it is a significant aspect of problem gambling behavior in this sample of adolescents. Because of this, using the adult scoring method for the SOGS-RA provides estimates of problem and at risk gamblers that better reflect the problem behaviors of the adolescents in the present study. The multi-dimensional scoring approach was rejected because of the unreasonable estimates of problem and at risk gambling.

The levels of problem gambling varied systematically with the maximum amount gambled on any one occasion. Those who gambled a maximum of \$10 or less had a 3.4% rate of problem gambling compared to a 28.6% level of problem gambling among those who had gambled \$50 or more on any one occasion, $X^2(10, N=923)=160.1$, p<.00001.

The average number of different gambling activities engaged in over the lifetime was 5.4. The average number of activities was 6.1 for males, and 4.7 for females. For the general sample, those with zero to five lifetime gambling activities had a 2.9% rate of problem gambling while those with six or greater lifetime gambling activities had a 13.5% rate of problem gambling. This

difference of problem gambling levels by gambling activity was statistically significant, X²(24, N=930)=113.8, p<.00001.

The endorsement rates for the various SOGS-RA items are given in Table 3.

insert table 3 approximately here

Problem and at risk gambling is higher among males than among females. Males in the sample had 11.8% and 13.9% rates of problem and at risk gambling compared to 4.8% and 5.4% for females. This gender difference was statistically significant, $X^2(2, N=930) = 38.4$, p < .00001.

Of the organized forms of gambling with age restrictions, underage gambling, i.e., the percentage of gamblers who wager under the legal age, ranges from 76.4% (Sports Select: a government run betting on the outcome of sporting events) to 52.4% (charitable casinos).

Adolescents who reported that their parents gambled excessively had almost twice the rate of problem and at risk gambling as did those adolescents who did not report excessive parental gambling (22.1% and 26.5% respectively versus 9.4% and 15.9% respectively). The level of problem and at risk gambling was lower for those adolescents who reported their parents did not gamble than

for those who reported their parents did gamble (7.8% problem gambling and 12.2% at risk gambling versus 11.8% problem gambling and 18.5% at risk gambling respectively).

Discussion

The Windsor area adolescent sample is characterized by high levels of gambling activities with 96.1% having gambled in their life time and 90.2% in the year prior to the study. The relatively small difference between lifetime and last year's gambling activity suggests that gambling behaviors have been developed before the age of 18. Previous findings (Fisher, 1993; Huxley & Carroll, 1992; Ide-Smith & Lea, 1988) have shown that gambling patterns are established as early as eight years of age and are thus in place before an adolescent reaches high school. Six of the 12 gambling activities probed are played by 50% or more of the sample: cards, games of skill, scratch tabs, lottery, pull tabs, and betting with friends, suggesting that adolescents engage in a wide range of gambling activities rather than specializing in a favourite activity. Of these six activities, lottery related games (pull tabs, scratch tabs, and lotteries), appeal to both sexes equally, while the remaining activities, cards, games of skill, and betting with friends are played more frequently by males.

Despite the fact that many of the gambling activities have legal age limits in the Province of Ontario, 18 years of age for Sports Select, horse racing, bingo, scratch tabs, lottery, pull tabs, and charitable casino gambling, these activities appear to be readily accessible to under-aged adolescents. Underage gambling is a significant component of the high level of gambling and shows the extent to which gambling activities have become the accepted norm even among young adolescents.

The adolescents in this sample have reported high levels of problem gambling behavior. Over 20% of the sample indicated that they felt bad about their gambling activities, showing that a considerable proportion of the sample is concerned and may feel guilty about their gambling activities. A similar proportion of the sample, 22%, had difficulty in controlling the amount they have gambled. Problems such as the inability to control gambling behavior are considered significant signs of problem gambling (Jacobs, 1989). Interestingly, only 7.5% admitted to having betting problems, suggesting that many adolescents do not perceive difficulties, such as controlling the amount they gamble, as problematic behavior. These high levels of gambling activity also have financial impact on the adolescents in this sample: 8.6% have borrowed money and not paid it back because of gambling, and 2.2% admitted to having stolen because of gambling.

The levels of problem gambling, 8.1%±1.8% of the sample, appear to be higher than those found in the Ontario adolescent study of 4% probable pathological gamblers (Canadian Foundation on Compulsive Gambling [Ontario], 1994). One reason for this apparent difference is the convention of reporting prevalence data for the population as a whole rather than for gamblers only as used by the Ontario study. For example, when the Ontario adolescent study, which found 65% of the sample to be gamblers, is expressed in terms of gamblers only, the prevalence of problem gamblers rises from 4% to 6.2%±2.9%, while the 8.1% problem gambler rate of the present study rises to 8.4%±1.4% for gamblers only, and the difference between their results and ours, as can be seen from the 95% confidence intervals, is not statistically significant.

High levels of problem gambling behavior are consistent with high levels of problem gamblers or at risk gamblers present in the sample, (8.1% and 9.4% respectively). The number of problem gambling behaviors varies systematically with both the amounts gambled and the number of gambling activities engaged in. Since both amount wagered and number of gambling activities can be considered to be indices of gambling severity, their relationship to the SOGS-RA problem behavior index helps support the validity of the SOGS-RA index.

The present study has found that gambling is a highly pervasive activity among adolescents in the City of Windsor, that it is well established by the time

adolescents reach high school, and that there are a significant number of adolescents reporting gambling related problems. These findings point to the need for educational and prevention programs in the school system to help adolescents deal effectively with their gambling activities. These findings also point to the need for further longitudinal studies to determine the degree to which adolescents will carry their gambling activities and problems into adulthood.

Notes

 A copy of the SOGS-RA screen is available from the corresponding author.

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Table 1

Summary of Lifetime Gambling Activities Among Adolescents in Windsor Ontario

Gambling Activity t who gamble t who ga		Whole Sample	Males	Pemales	X2 for gender
kill 54.3 76.6 5.5 kill 54.3 73.6 37.5 act (l) 35.5 56.4 17.2 og races 19.5 25.7 14.0 achines(2) 28.4 34.6 23.0 bs 76.3 74.1 78.2 ch friends 79.4 86.2 74.9	Gambling Activity	* who gamble	% who gamble	% who gamble	differences
kill 54.3 22.9 11.2 act (1) 35.5 56.4 17.2 og races 19.5 25.7 14.0 og races 19.5 25.7 14.0 os 76.3 74.1 78.2 os 76.3 74.1 78.2 oling(3) 11.2 55.0 56.3 ch friends 79.4 86.2 74.9	Cards	65.3	76.6	5.5	(1,N=926)=44.1,D<.00001
t skill 54.3 73.6 37.5 Select (1) 35.5 56.4 17.2 c dog races 19.5 25.7 14.0 g machines(2) 28.4 34.6 23.0 tabs 76.3 74.1 78.2 os 52.5 51.4 53.5 gambling(3) 11.2 14.9 08.0 with friends 79.4 86.2 74.9	Coin games	16.7	22.9	11.2	(1,N=921)=21.1,p<.00001
Select (1) 35.5 56.4 17.2 c dog races 19.5 25.7 14.0 g machines(2) 28.4 38.1 46.9 g tabs 76.3 74.1 78.2 ss 52.5 51.4 53.5 gambling(3) 11.2 14.9 08.0 with friends 79.4 86.2 74.9	Games of skill	54.3	73.6	37.5	(1,N=923)=120.0,p<.00001
t dog races 19.5 25.7 14.0 ### ### ### ### ### ### ### ### ### #	Sports Select (1)	35.5	56.4	17.2	(1,N=923)=153.4,p<.00001
#2.8 38.1 46.9 # machines(2) 28.4 34.6 23.0 tabs 76.3 74.1 78.2 52.5 51.4 53.5 sambling(3) 11.2 14.9 08.0 with friends 79.4 86.2 74.9	Horse or dog races	19.5	25.7	14.0	(1,N=919)=19.4,D=.00001
tabs 76.3 74.1 78.2 52.5 51.4 53.6 53.6 55.7 55.0 56.3 with friends 79.4 86.2 74.9	Singo	42.8	38.1	46.9	(1,N=921)=8.3,D=.004
tabs 76.3 74.1 78.2 52.5 51.4 53.5 58.0 55.7 55.0 56.3 56.3 with friends 79.4 86.2 74.9	Sambling machines(2)	28.4	34.6	23.0	(1,N=918)=14.1,D=.0002
52.5 51.4 53.5 53.5 jambling(3) 11.2 14.9 08.0 with friends 79.4 86.2 74.9	Scratch tabs	76.3	74.1	78.2	(1,N=921)=2.6, n.s.
55.7 55.0 56.3 11.2 14.9 08.0 ds 79.4 86.2 74.9	ottery	52.5	51.4	53.5	(1,N=919)=.7, n.s.
11.2 14.9 08.0 ds 79.4 86.2 74.9	Pull tabs	55.7	55.0	56.3	
79.4 86.2 74.9	Casino gambling(3)	11.2	14.9	0.80	(1, N=920)=12.0, D=.0005
	Setting with friends	79.4	86.2	74.9	(1,N=920)=20.8,D=.00001

¹ Government run sports betting

² e.g. video poker games

³ Charitable casinos

Table 2

Summary of Gambling Activities over the Previous Year Among Adolescents in Windsor Ontario (n=935)

Activity	Frequency					
	Never	< Monthly	Monthly	Weekly	Daily	
	8		*	4	Ł	
Card Playing	48.0	34.4	10.2	5.0	0.6	
Coin games	87.1	7.8	1.6	1.4	0.4	
Games of skill	51.4	27.0	10.9	7.3	2.1	
Sports Select1	66.8	13.7	7.4	8.6	2.4	
Horse or dog racing	83.7	11.3	2.2	0.5	0.3	
Singo	65.0	27.3	3.9	1.9	0.1	
Sambling machines	77.8	17.1	2.2	0.7	0.2	
Cratch tabs	32.5	40.5	15.8	8.2	1.1	
ottery	56.5	27.7	6.7	5.6	1.0	
Pull Tabs	51.9	32.2	8.2	4.7	0.9	
Casino'	89.8	7.4	0.7	0.1	0.3	
Betting with friends	26.3	34.1	19.3	12.7	5.5	

¹ Government run sports betting

² e.g. video poker games

³ Charitable casinos

Table 3
Endorsement Rates of SOGS-RA Scale Items

SOGS-RA Item		% Yes	* No	
6 Claimed to be winning		9.6	90.1	+00°-0
7 Betting problems		7.5	92.2	
8 8 Gambled more than planned	1	22.0	77.8	
9 Betting criticized		5.6	94.1	
# 10 Felt bad about gambling		20.4	79.1	
11 Would like to stop		3.6	95.7	
# 12 Hidden signs of betting		8.4	90.6	
# 13 Money arguments on gambl	ing	7.4	92.3	
14 Borrowed and not paid it	back	8.6	91.1	
# 15 Absent from school or wo	rk	3.2	96.6	
16 Borrowed or stolen money		7.1	92.7	
# 16a From parents*		5.7	94.3	
# 16b Brother or sister	•	4.1	95.9	
# 16c Other relatives*		1.8	98.2	
# 16d Friends*		4.4	95.6	
# 16e Loan sharks*		1.3	98.7	
# 16f Sold property*		2.1	97.8	
# 16g Bad cheques*		1.1	98.9	
# 16h Stole*		2.2	97.8	
	% Every	% Most of	% Some of	% Never
	time	the time	the time	
5 Win back money lost	4.3	9.1	26.7	59.6

^{* -} not included in the SOGS-RA scoring



