A study of differences in Canadian university students' gambling and proximity to a casino

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Abstract

Gambling behavior and problem gambling of college students were investigated in universities far from and close to a large casino. A survey of 17 gambling activities was given and the South Oaks Gambling Screen was completed by 1579 students. Approximately half of the students were enrolled in universities near a casino and the other half far from a major casino. Gender and proximity differences were hypothesized and observed. Males engaged in more gambling activities than females. Students close to a casino manifested more serious problem gambling than students far from a casino. Gender by proximity interactions are reported. This investigation supports the idea that context and proximity to gaming venues may have exposure or accessibility effects on university students' gambling behavior. **Key words**: university student gambling, problem gambling, gender and gambling, proximity of casino to university and gambling behavior

Introduction

Various policy statements and essays have called for the advancement in problem gambling research from general population prevalence studies to investigations of risk and protective factors that influence gambling behavior (e.g., Shaffer, LaBrie, LaPlante, Nelson, & Stanton, 2004). Korn and Shaffer (1999) have urged researchers to examine vulnerable populations such as youth and various contexts that involve accessibility or overexposure and corresponding community problem gambling. The Canadian Public Health Association and others (e.g., Korn, 2001) have indicated specific concern for gambling-related problems for adolescents and emerging adults (also referred to as youth). This study examines university students, as a vulnerable group, and differences in gambling behaviors and gambling problems in settings where high-profile casinos are either near to or far from university campuses.

Accumulating evidence reveals that college students are experiencing gambling problems. For example, Ladouceur, Dubé, and Bujold (1994) report that 2.8% of one university student sample were pathological gamblers. In another investigation involving college students in five states in the US, between 4% and 8% were classified as problem gamblers. Jacobs (2000) reports historical trends toward greater frequency of gambling and gambling problems over the 1990s as more legalization and expansion of gambling has occurred. A variety of studies demonstrate that college-age students, as emerging adults, are an at-risk population for gambling problems (e.g., see Shaffer et al., 2004; Welte, Barnes, Wieczorek, Tidwell, & Parker, 2002) and other unhealthy behaviors that can accompany problem gambling (e.g., see Giacopassi, Vandiver & Stitt, 1997; LaBrie, Shaffer, LaPlante, & Wechsler, 2003; Oster & Knapp, 2001; Proimos, Durant, Pierce, & Goodman, 1998; Volberg, 1998, 2002; Winters, Stinchfield, Botzet, & Anderson, 2002).

Volberg (2004) and others (Gerstein et al., 1999; Shaffer et al., 2004) indicate that accessibility or availability (Gilliland, 2003; Marshall, 2005) of gambling activities is linked to

higher rates of problem and pathological gambling. Addictions researchers are beginning to investigate the ecological and geographic factors contributing to gambling behavior and pathology (Welte, Wieczorek, Barnes, Tidwell, & Hoffman, 2004) and find that a casino within approximately 10 miles of a typical household is positively related to problem or pathological gambling. Although there is mixed evidence for an exposure effect (Shaffer et al., 2004), it remains uncertain if university student gambling is at all linked to the accessibility of a casino. Further, while gender differences are often reported in general-population prevalence studies, with males manifesting more frequent gambling activities and problems, little is known about gender differences among Canadian university students in Ontario.

This investigation is based on two principal hypotheses. First, male university students are hypothesized to manifest a wider range of gambling behaviors and gambling problems than female university students. Second, both male and female university students attending a school with a high-profile and close casino, versus students on campuses farther from a casino, are hypothesized to engage in a wider range of gambling behaviors and manifest a greater prevalence of problem and pathological gambling. These hypotheses include gambling in a casino and other forms of gambling in the community (e.g., lottery tickets, horse racing, Internet gambling). It is speculated that the power of influence due to proximity to a casino may heighten all forms of gambling due to exposure and accessibility.

Methods

Participants

Four medium-size Ontario university campuses were selected for this research based on proximity to a major casino that is visible in the immediate or local community. Participants were solicited from the University of Guelph, Wilfrid Laurier University, the University of Windsor, and Brock University. The sample included 1579 enrolled university students. Data were gathered in the Fall semester of 2001 and Winter semester of 2002.

Ethics review

Each university investigator submitted an ethics protocol to his or her university review board. Approval was obtained with the understanding that the student had the right to participate and to withdraw or refrain from completing any aspect of the survey. The student's name was never connected to the survey and all information was kept confidential. Although participating universities are acknowledged in this study, only aggregate data are reported.

Procedure

The data were collected using a variety of techniques, including a mailed survey, administration of the survey in classroom settings, collection of data from psychology research pools, and approaching students in public settings at the university. To be specific, the University of Guelph obtained a random mailing list of 1200 students. Males were oversampled given the ratio of male to female students on campus. There were equal numbers of students for each year of university. Further, the questionnaire was administered in a number of classes that included students from a variety of degree programs at the university. At Wilfrid Laurier University and the University of Windsor, the Office of the Registrar compiled a random list of 200 students from each of second, third, and fourth year.

The first-year students registered in Introductory Psychology were also asked to complete the questionnaire to meet the requirements for research participation. At Brock University the

questionnaire was administered in large introductory courses and a table was set up in a common area of the university where students were solicited for participation. The most representative samples come from the three universities that used a random list and the least representative from the university that included participants from only classroom and solicitation settings. None of the investigators, however, claim that the sample for each university is representative of the complete campus. However, the sample from each university included participants from a wide variety of degree programs.

Measures

Data were gathered on gender, forms of recent gambling, and level of problem gambling. Sociodemographic data were determined and included specification of gender. The nine items of the South Oaks Gambling Screen (SOGS) were used to assess four levels of gambling: no problem (0), mild problem (1–2), problem (3–4), and pathological gambling (5 or higher). Although recent analyses of different instruments to assess problem gambling indicate measurement and methodological concerns (e.g., Derevensky & Gupta, 2000; Ladouceur et al., 2000), we selected and used the SOGS given its wide use in studies of adolescents and college-age populations (e.g., Proimos, Durant, Pierce, & Goodman, 1998; Volberg, 1998; Giacopassi, Stitt, & Vandiver, 1997). Students were also asked to report if they had engaged in a series of gambling activities in the last month. A list of gaming activities was selected from previous research by Vitaro, Ladouceur, and Bujold (1996). The 17 forms of gambling that can be legitimately engaged in through the province are instant game tickets, LOTTO 6/49 or similar lottery tickets, break-open tickets, Pro-Line, video lottery machines, bingo, casino slots, casino table games, casino blackjack, card games, dice games, raffles or fundraising, skill games, sport pools, horse races, speculative investing, and Internet or online gambling. Students were asked to indicate either yes or no to engaging in each of the 17 forms of gambling over the last month.

Results

Gender differences were hypothesized for gambling activities. Table 1 summarizes the percentage of involvement for males versus females. A chi-square was computed to determine if differences were significant for each of the 17 types of gambling for gender. Comparisons were made using chi-squares with Bonferroni corrections for the number of computed comparisons. There were no significant differences between males and females for only four types of gambling—break-open tickets, video lottery machines, horse races, and Internet gambling. Male university students, when compared to their female peers, engaged in more LOTTO 6/49 or similar lottery tickets, Pro-Line, casino table games, casino blackjack, card games, dice games, skill games, sport pools, and speculative investing. Females participated more often in such activities as instant game tickets, bingo, casino slots, and raffles. Overall, male students engaged more often in nine types of gambling with females engaging more often in only four types of gambling.

Table 1.
Percent engaging in each of 17 types of gambling by gender

		Males	Females	All
1	Instant game tickets	38.8	52.6	49.4*
2	LOTTO 6/49 or similar lottery tickets	27.8	19.1	21.1*
3	Break-open tickets	7.5	9.4	9.0
4	Pro-Line	27.8	2.2	8.2*
5	Video lottery machines	4.3	2.6	3.0
6	Bingo	7.0	14.7	12.9*
7	Casino slots	30.7	41.1	38.7*
8	Casino table games (except blackjack)	20.8	6.4	9.7*
9	Casino blackjack	16.4	5.0	7.6*
10	Card games for money	23.5	7.3	11.1*
11	Dice games for money	6.7	2.4	3.4*
12	Raffles or fundraising tickets	34.2	46.5	43.6*
13	Skill games for money	24.0	3.7	8.5*
14	Sports pools	29.1	4.1	10.0*
15	Horse races	8.9	7.1	7.5
16	Speculative investing	16.4	6.4	8.8*
17	Internet or on-line gambling	1.6	0.4	0.7

Note: Chi-square significant at *p < .0006 (.01 adjusted for the number of tests).

Proximity of a university student population to a major casino was hypothesized to be associated with engagement in more types of gambling and greater problem gambling. Wilfrid Laurier University and the University of Guelph were categorized as being far from a major casino and the University of Windsor and Brock University were categorized as being near a casino. Percentages engaging in each of the 17 types of gambling for students near to versus far from a casino were tested using chi-square analyses, again using Bonferroni corrections. Results reported in Table 2 reveal only two statistically significant differences: casino slots and table games were more frequent among students attending a university near a casino.

Table 2.
Percent engaging in each of 17 types of gambling by proximity to a casino

		Near	Distant	All
1	Instant game tickets	48.7	49.8	49.4
2	LOTTO 6/49 or similar lottery tickets	24.1	19.4	21.1
3	Break-open tickets	8.7	9.1	9.0
4	Pro-Line	10.6	6.9	8.2
5	Video lottery machines	4.2	2.3	3.0
6	Bingo	15.9	11.1	12.9
7	Casino slots	55.3	29.1	38.7**
8	Casino table games (except blackjack)	14.2	7.2	9.7**
9	Casino blackjack	8.8	7.0	7.6
10	Card games for money	10.7	11.3	11.1
11	Dice games for money	2.9	3.7	3.4
12	Raffles or fundraising tickets	40.2	45.5	43.6
13	Skill games for money	8.1	8.6	8.5
14	Sports pools	10.4	9.7	10.0
15	Horse races	9.5	6.4	7.5
16	Speculative investing	9.5	6.4	7.5
17	Internet or on-line gambling	1.2	0.4	0.7

Note: Chi-square significant at **p < .0006 (.01 adjusted for the number of tests).

Using SOGS to assess the four levels of problem gambling, all of the university students (n = 1579) were categorized into a problem level. In this sample 1219 (77.2%) had no gambling problems, 293 (18.6%) had mild problems, 52 (3.3%) had moderate problems, and 15 (0.9%) had pathological problems. Data were incomplete for four students that were not included in further analyses. A chi-square was computed for a 2 (near versus far) × 4 (four levels of problem gambling) contingency table. The chi-square was significant (χ^2 = 23.21, df = 3, p = .00004). For the no-problem group 66% were in universities far from a casino with 34% being enrolled in universities near a casino. Mild problems were greater for far (57.3%) versus near campuses (42.7%). Moderate gambling problems were of similar percentages for the universities near to (48.1%) and far from (51.9%) a casino. Students categorized as pathological were more likely to be enrolled in universities near to (80%) than far from a casino (20%).

A final set of chi-square analyses was computed for gender × proximity to casinos (χ^2 = 5.36, df = 1, p = .021) and for gender × level of gambling problems (χ^2 = 60.41, df = 3, p = .00001). More males (41.5%) than females (34.9%) were enrolled in a university near a casino. In contrast, more females (65.1%) than males (58.5%) attended universities far from a casino. In the gender × level of gambling interaction, more females (81.4%) than males (63.5%) have no gambling problems. For the three levels of gambling problems males had higher percentages of problems than females (mild problems: 27.3% males versus 15.9% females; moderate problems: 6.8% males versus 2.2% females; pathological problems: 2.4% males versus 0.5% females).

Discussion

Prior research in Canada (e.g., Gupta & Derevensky, 1998; Ladouceur et al., 1994; Poulin, 2000) using samples of youth indicates that 2.2% to 3.3% of students have serious gambling problems. Although attempts were made to get a representative sample of university students in this investigation, university policies and procedures required the use of multiple methods of data collection. In that our sample had only 0.9% pathological problem gamblers, which is considerably lower than the range often reported, the data are not useful to estimate population prevalence rates but remain useful to test for gender and location of university differences. It is worth noting, nonetheless, that in addition to the 0.9% pathological gamblers, 23.9% of the sample reported mild to moderate gambling problems. Given the consequences of each item measured in the SOGS instrument, this is no small number of problem gamblers, though the 0.9% of pathological problem gamblers is small. It is possible that our sample techniques did not adequately represent the full populations at the four universities but it is also possible that the SOGS may provide different results from other assessment tools (e.g., Derevensky & Gupta, 2000; Ladouceur et al., 2000) such as the Canadian Problem Gambling Index (CPGI). Further, longitudinal research would be necessary to determine if some or most of the mild to moderate university student problem gamblers become pathological gamblers over time. Nothing is known about this possibility among university students in Ontario.

Our evidence is similar to that of most studies that indicate that the frequency of gambling problems is greater for males than for females (Hayer, Griffiths, & Meyer, 2005). Our findings reveal that most but not all of the gambling problems are found among the male students. There are many explanations of why gender makes a difference. However, most studies simply test for gender differences and fail to go beyond this simple comparison to study the reasons for these differences. Gender differences may reflect differential validity in assessment tools for measuring male and female gambling problems. There may be different biological mechanisms in brain development or hormonal patterns that account for gender

differences. It is even possible that gender differences are based on gender-role identity differences associated with masculinity and femininity. Gender differences can be due to differential socialization of behaviors, attitudes, or dispositions that stimulate gambling behavior. This investigation, like many others, does not examine gender differences in any depth beyond the documentation of individual differences. There is considerable need to develop a sound theoretical framework for the study of gender differences in gambling behavior. Do gender roles, gender identity, or some form of biological differences between males and females account for the often reported gender differences in problem gambling? It could also be noted that the types of gambling engaged in by males and females may reflect more casual gambling on the part of females (e.g., instant game, bingo, raffles) and/or limited skills (e.g., slots) than gambling that has more organized rules or knowledge to engage in it (e.g., dice, blackjack, or skills games), which attracts greater male participation. In future investigations one might ask participants why they engage in one or more types of gambling as opposed to another.

As Griffiths (1999; 2003) has indicated, there are situational and structural characteristics within a community that can enhance access to gambling venues and gambling behavior. Attending a university close to a major casino, or possibly other gambling venues, appears to create an ecological condition in which the location of school and casino merge to create a setting that encourages gambling behavior and possibly problem gambling. Proximity between institutions can set an exposure effect that heightens one's awareness and increases exposure to acceptable behaviors with each institution. Therefore, universities close to casinos may have accessibility that encourages gambling behaviors through repeated exposure and desensitization to the costs of gambling. Likewise, this exposure effect may result in problems in gambling in the casinos, but our findings do not support the original speculation that it could also enhance other forms of non-casino gambling in the community. The potential power of casino location on students in educational institutions may only increase problem gambling within a casino, and our initial hypothesis of the radiating effect on gambling outside the casino may not be borne out.

As new casinos are built, consideration should be given to the meaning and implications of casino location for adolescents and young adults. Gambling corporations should recognize that location has a powerful effect on both profit and potential problems for students in close proximity. Perhaps casinos should provide monies to local schools for prevention and treatment programs among students for problems that might emerge due to exposure and accessibility effects.

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