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Gender Differences among Adolescents with Gambling-Related Problems

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Abstract Data from five recent studies using self-reports were merged to explore gender differences in the characteristics of adolescent problem gambling, including comorbidity with other youth problems. The sample consisted of 2,750 male and 2,563 female participants. Male problem gamblers were more likely than females to report signs of psychological difficulties while females were more likely to note behavioural problems as a consequence of their gambling problems. Males and females with severe gambling problems had remarkably similar prevalence rates of depression, substance use and weekly gambling. In the non-problem gambling group, depression was more likely to afflict females whereas substance use and frequent gambling were more prevalent among males.

Keywords Pathological gambling · Adolescence · Gender

Pathological gambling has been conceptualized as a continuous or periodic loss of control over gambling and is highlighted by irrational thinking, erroneous cognitions, a preoccupation with gambling and obtaining money to gamble, continued gambling despite serious adverse consequences, and an inability to stop gambling (APA, 1994; Petry, 2004). While there is a growing body of research examining the aetiology, consequences and risk factors associated with adolescent pathological gambling (see Derevensky & Gupta, 2004c), there has been only limited research examining the profile of female pathological gamblers. This is due to the low prevalence rates for adolescent female pathological gamblers and the fact that few seek treatment for a gambling problem (Derevensky & Gupta, 2004a, b; Gupta & Derevensky, 2004; Jacobs, 2004). Jacobs (2004) has estimated that the ratio of boys to girls with severe gambling-related problems to be somewhere in the range of 3:1 to 5:1. Similar, albeit less pronounced gender differences have been found in adults. Consequently, most

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youth studies using a normative population tend to provide a particularly andocentric portrait of pathological gambling.

In a study of adolescent gambling behavior using the SOGS-RA to identify problem gamblers (Wiebe, Cox, & Mehmel, 2000), female problem gamblers were found to be more likely than males to endorse items related to familial and peer problems, borrowing and/or stealing money to pay gambling debts, and attempting to hide signs of gambling problems. In contrast, males were more likely to report feeling bad about their gambling losses. However, the number of problems gamblers (16 males, 16 females) was too small to draw definitive conclusions.

In examining gender differences among adult problem gamblers, female pathological gamblers are reported to generally start gambling at a later age, with gambling problems developing more rapidly (Grant & Kim, 2002; Ibanez, Blanco, Moreryra, & Saiz-Ruiz, 2003; Ladd & Petry, 2002; Potenza et al., 2001; Tavares et al., 2003). Ibanez and her colleagues suggest that negative emotional states play a larger role in the pathological gambling of women. In their study, adult female pathological gamblers reported to be more likely to have a history of physical abuse, report unsatisfactory spousal relationships, and have problems associated with loneliness and depression. In contrast, male adult pathological gamblers appeared to exhibit more impulse control problems. Males tended to score higher on measures of antisocial personality and sensation seeking; they were more likely to have endured a history of alcoholism, and be involved in illegal activities to support their gambling (Ladd & Petry, 2002). However, a recent examination incorporating a large representative American sample revealed that adult female pathological gamblers were more likely than males to have a history of alcohol dependence, drug abuse, depression, and anxiety (Petry, Stinson, & Grant, 2005). Qualitative analyses of treatment-seeking adult pathological gamblers further reveal that the reasons provided by men for gambling tended to center upon the competitive nature associated with winning and potential monetary gains, whereas for women gambling was often reported to be used as an escape from problems (Grant & Kim, 2002; Ibanez et al., 2003). Finally, research indicates that males prefer games of strategy (e.g., poker, sports betting) compared to females, who are more likely to participate in non-strategic games (e.g., slot machines, bingo). This tendency has been observed among adult pathological (Ladd & Petry, 2002; Potenza et al., 2001; Winters, & Rich, 1998) and recreational gamblers (Potenza, Maciejewski & Mazure, 2006).

In summary, it appears that male problem gamblers tend to be more competitive and concerned with winning and losing, while females are more likely to become problem gamblers out of a need to escape their difficulties. Problem gambling in adolescent females was associated with family problems, but this observation was based on a small sample. Given the overall low prevalence rates for adolescent girls with severe gambling problems (estimated at between .5 and 1.8%; Jacobs, 2004; NRC, 1999), the pooled results of several studies can provide greater insight into potential gender differences. As a preliminary examination of youth with moderate to severe gambling-related problems, the present study sought to analyze gender differences with respect to item endorsement on the DSM-IV-MR-J problem gambling screen, gambling preferences, and gambling frequency. A further objective was to examine the degree to which problem gambling in male and female adolescents was correlated to substance use, school-related problems, and depression, given their strong comorbidity with problem gambling (Derevensky & Gupta, 2004a).

If female adolescents demonstrate marked differences in the manifestation of problem gambling, then the development of gender-specific treatment and prevention strategies may be warranted.

Method

Data collected from five studies of adolescents and young adults conducted between 2002 and 2005 by the International Center for Youth Gambling Problems and High-Risk Behaviors, McGill University were included for analyses. The studies all measured gambling severity using the DSM-IV-MR-J (Fisher, 2000), and were of similar design incorporating a convenience sample. Participants were high school or junior college students, and questionnaires were completed anonymously. All studies were designed to examine a wide range of psychosocial correlates, risk and protective factors associated with problematic gambling. The pooled data provided an adequate sample of problem gamblers, and sufficient information concerning depression, school performance, and substance use.

Participants

The combined sample consisted of 7,819 participants between the ages of 12 and 18 years; the mean age being 14.77. All children in approved schools were included if (a) they agreed to participate, and (b) parental approval was received. Excluded from the sample were 38 participants who failed to identify their gender, and 2,468 participants (31% of the sample; 849 males, 1,619 females) who indicated never having gambled. The final sample consisted of 5,313 (2,750 males, 2,563 females) participants. Two studies were conducted in Ontario high schools and accounted for 2,875 (54%) participants while the remaining three studies were conducted in high schools and CEGEPs (junior college, grades 12 and 13) in Quebec, and accounted for 2,468 (46%) participants. Of the total number of students, 350 attended French schools (all instruments were translated and completed in French) while the majority attended English schools.

Instruments

Gambling Measures

The DSM-IV-MR-J (Fisher, 2000) is a revised version of the DSM-IV-J (Fisher, 1992), which was originally adapted from the adult DSM-IV (APA, 1994). This 12-question assessment of past year problem gambling consists of nine distinct categories: preoccupation, progression, tolerance, withdrawal symptoms, escape, chasing losses, lying to family, using fare/lunch money or stealing to pay for gambling, and family, peer group or school-related disruptions. For most questions, respondents select between four levels of frequency: never, once or twice, sometimes, and often. The DSM-IV-MR-J represents a more conservative adolescent screen in that various questions require an endorsement above a certain criterion threshold level to be counted toward severity (e.g., sometimes and often are viewed as an endorsement whereas never and once or twice are not considered an endorsement). Problem

gambling severity scores range from 0 to 9. Employing the same criteria as Gupta and Derevensky (1998), for individuals reporting having gambled in the past year, a score of 4 or more is indicative of a Probable Pathological Gambler (PPG), respondents who scored 2–3 were identified as At-Risk gamblers, while those who scored 0–1 were considered Social gamblers. The Cronbach alpha for the entire sample was .79.

The Gambling Activities Questionnaire (GAQ) (Gupta & Derevensky, 1996) provides information about gambling frequency, preferred types of gambling, and correlates of gambling problems. Respondents who indicated never having participated in any form of gambling were considered non-gamblers and were excluded from further analyses. While all of the participants responded to measures assessing gambling frequency and engagement in different types of gambling, only some of them responded to other GAQ measures including self-reported school grade average, and alcohol, marijuana and hard drug use. Measures of weekly alcohol and drug use rather than lifetime use are presented as this represents a stronger indicator of a potential substance use problem. As such, the high-risk category did not include infrequent drug users. The GAQ is reported to have good face validity, questions are analyzed individually, and no cumulative scores are calculated.

Depression

The Reynolds Adolescent Depression Scale (RADS; Reynolds, 1987) is a 30-item measure of depressive symptomatology which is reported to have high internal consistency ($\alpha \geq .90$), test–retest reliability ($r = .80$), and validity (Reynolds & Mazza, 1998). The RADS consists of statements concerning an individual's present affective state (e.g., I feel happy, I get stomach aches). Respondents are provided with four possible responses: almost never, hardly ever, sometimes, and most of the time, with items being scored 1–4 (positive items are reverse recoded), and then totalled. Clinical depression is defined as $T \geq 77$ (Reynolds, 1987). The Cronbach alpha for the study was .92.

Procedure

The present study includes a secondary analysis of data collected from five youth gambling studies. A total of 16 school boards in Ontario, 11 school boards in Quebec, and 4 Quebec-based CEGEPS (post-secondary schools which include preuniversity and vocational training) were involved in the studies. Consent from both participants and a parent were obtained prior to participation. Questionnaires were group administered and completed during school hours either in classrooms, gymnasia, libraries, or cafeterias, while under the supervision of trained research assistants. Students were instructed that their participation was voluntary, they could withdraw from the study at any time, and all responses were anonymous. The time for completion was generally less than 50 minutes. All participants were provided with the definition of gambling as any activity that involved an element of risk where money is wagered and could be won or lost. Any questions raised were answered by the research assistants.!

Results

After classifying the 5,313 participants in terms of problem gambling severity based upon gambling participation and the DSM-IV-MR-J, the sample consisted of 289 (226 males, 63 females) PPGs, 601 (412 males, 189 females) At-Risk gamblers, and 4,423 (2,112 males, 2,311 females) Social gamblers. If one includes the non-gamblers, this corresponds to an overall prevalence rate of 3.7% PPGs (6.3% for males; 1.5% for females) and 7.7% At-Risk gamblers (11.4% for males; 4.5% for females). In general, males were marginally older than the females (M = 14.90 and 14.80, respectively; $t = 2.10$, $p = .036$), however, no significant and meaningful age differences were found between Social gamblers, At-Risk gamblers, and PPGs, or between males and females within these problem gambling risk categories.

Gambling Frequency and Preferences

As reported in Table 1, the most popular types of weekly gambling for males was card-playing, sports or games of skill, and the lottery, respectively. For females, the most popular activity included card-playing, followed by the lottery and sports/games of skill. Similar results were found irrespective of level of problem gambling severity. As expected, PPGs are much more likely than Social gamblers to be regularly involved in all types of gambling.

Among Social and At-Risk gamblers, boys were more likely than girls to gamble on a weekly basis and to gamble weekly on cards, sports or games of skill, and VLT machines. What is most revealing, however, is the decrease in difference between PPG boys and girls in terms of weekly gambling. Whereas male Social gamblers were 1.93 times more likely than females to gamble on a weekly basis, male PPGs were only 1.48 times more likely than female PPGs to be weekly gamblers. A similar trend was observed for specific types of gambling as well. Whereas the odds ratios between male and female Social gamblers for wagering on cards, sports or games of skill, and VLT machines were 1.81, 5.05 and 3.87, respectively, the odds ratio for PPGs were 1.30, 2.51 and 2.61, respectively.

Table 1 Gambling type preferences for games played at least once a week

	PPG		At-Risk		Social	
	Boys $N = 226$	Girls $N = 63$	Boys $N = 412$	Girls $N = 189$	Boys $N = 2112$	Girls $N = 2311$
Lottery	16.0	25.4	10.3	10.6	4.4	3.0*
Race track	3.3	2.1	1.3	2.0	0.5	0.3
Sports/games of skill	38.6	15.4**	24.2	7.1***	7.9	1.7***
Bingo	7.1	14.3	4.2	3.2	1.9	1.5
Slot machines	8.8	4.8	3.2	1.1	0.8	0.7
VLT machines	15.0	6.3	6.4	1.6*	2.8	0.7***
Casino type games	12.4	8.3	3.8	2.8	0.3	0.5
Cards	44.0	38.1	29.5	14.3***	10.4	6.0***
Internet	12.6	12.5	4.8	4.7	1.7	0.9*
Any type of gambling	66.4	57.1	46.8	31.2***	19.7	11.3***

Note. Percentages are presented. Asterisk indicates significant difference between girls and boys in that category.

* $p < .05$, ** $p < .01$, *** $p < .0005$

Endorsement of DSM-IV-MR-J Items

While the classification of At-Risk gambler was predicated upon endorsement of 2 or 3 items in the DSM-IV-MR-J, it is interesting to note that male At-risk gamblers had significantly higher scores than females (M = 2.34 and 2.25, respectively; $t = 2.281$, $p = .023$). One third of the At-Risk males endorsed three of the nine categories, compared to just one quarter of the At-Risk females (see Table 2). Male PPGs also had higher scores than female PPGs (M = 5.31 and 4.98, respectively), although this difference was not statistically significant. First and foremost, two important general observations must be made concerning the endorsement of items on the DSM-IV-MR-J; (a) males were significantly more likely to endorse each of the nine categories (Social, At-Risk and PPG groupings combined), and (b) the most commonly endorsed categories tended to be the same. For both male and female PPGs, these included disruptions, lying, stealing, progression, and chasing losses, in descending order (see Table 3). The order was faintly different for males and females in the At-Risk grouping, but by and large the most endorsed items referred to the negative consequences associated with gambling while the least endorsed items tended to be indicators of a physical and psychological addiction (e.g., withdrawal, chasing losses, progression, tolerance and preoccupation).

Beyond these general similarities, a pattern of gender differences was observed within the At-Risk and PPG groupings. Males were more likely to report the physical and psychological manifestations of an addiction, including preoccupation, tolerance, and chasing losses. PPG males reported more often that they thought about or planned to gamble ($\chi(1, 289) = 12.89$, $p < .0005$), needed to gamble more frequently to achieve the same level of excitement ($\chi(1, 289) = 6.70$, $p = .010$), and gambled in order to win back money lost on a previous day ($\chi(1, 601) = 5.51$, $p = .019$). Similar differences were observed between At-Risk males and females for issues of preoccupation ($\chi(1, 600) = 9.57$, $p = .002$), tolerance ($\chi(1, 601) = 4.84$, $p = .028$), and chasing losses ($\chi(1, 601) = 18.84$, $p < .0005$).

Although items related to negative gambling-related consequences generally had the highest endorsement rates, female problem gamblers were the most likely to report them. At-Risk females were more likely to report stealing money from their family to pay for gambling ($\chi(1, 459) = 12.22$, $p < .0005$), and female PPGs were more likely to report disruptions in their academic or social lives ($\chi(1, 289) = 4.84$, $p = .028$). As well, there was a trend suggesting that females PPGs may be more prone to use gambling as a means of escaping from problems ($\chi(1, 28) = 2.87$, $p = .090$).

Table 2 Number and proportion of male and female adolescents by DSM score

Category	DSM score	Boys (%)	Girls (%)
At-Risk	2	272 (66.2%)	142 (75.1%)
	3	139 (33.8%)	47 (24.9%)
PPG	4	83 (36.7%)	33 (52.4%)
	5	64 (28.3%)	15 (23.8%)
	6	35 (15.5%)	5 (7.9%)
	7	22 (9.7%)	4 (6.3%)
	8	15 (6.6%)	5 (7.9%)
	9	7 (3.1%)	1 (1.6%)

Note. Percentages represent the proportion of sample relative to each of the two DSM categories

Table 3 Boys' and girls' endorsement rates for the nine DSM-IV-MR-J categories

	PPG		At-Risk	
	Boys $N = 226$	Girls $N = 63$	Boys $N = 412$	Girls $N = 189$
Preoccupation	58.8	33.3***	25.5	14.3**
Tolerance	71.2	54.0*	36.7	27.5*
Progression	34.1	25.4	8.0	4.8
Withdrawal symptoms	32.3	30.2	11.2	6.9
Escape	32.9	44.4	6.8	6.9
Chasing losses	69.8	54.0*	25.5	10.1***
Lying to family	77.3	84.1	37.4	43.1
Stealing to pay for gambling	76.9	82.5	40.9	62.6***
(a) Fare/lunch money	48.1	58.3	24.4	32.2
(b) From family	60.3	66.7	22.7	38.4***
(c) From others	46.7	39.6	18.2	17.4
Disruptions	78.3	90.5*	42.5	49.7
(a) Arguing with family/friends	75.3	87.5	41.9	48.3
(b) Missed school	25.3	27.1	7.3	8.2

Note. Percentages are presented

* $p < .05$, ** $p < .01$, *** $p < .0005$

Correlates of Gambling Problems

Males and females with high (PPG), medium (At-Risk) and low (Social) levels of problem gambling severity were compared as to difficulties commonly associated with problem gambling. As revealed in Table 4, the prevalence rates for self-reported weekly drug use, low school grade average and clinical depression for PPGs were approximately 2–4 times higher than the rates for Social gamblers. The most noteworthy finding, however, is the lack of difference between boys and girls with severe gambling-related problems. For example, male Social gamblers were 2.67 times more likely than females to report using hard drugs on a weekly basis, yet male PPGs were actually less likely (O.R. = 0.88) than female PPGs to use hard drugs. There were also significant gender differences in the weekly alcohol use of the Social gamblers (O.R. = 1.59), but not for PPGs (O.R. = 1.02). The opposite trend was observed for depression. Boys in the Social gambling category were less likely than girls to meet the RADS criteria for clinical depression, $\chi(1, 459) = 34.71$, $p < .0005$, yet the prevalence rates of depression for both boys and girls in the PPG category were quite similar. Among Social gamblers but not problem gamblers, girls fared significantly better than boys academically. In this case however, the difference in sample size (i.e., statistical power) may be responsible for the divergent results as comparable odds ratios between boys and girls were found for the three problem gambling severity levels.

Discussion

The present study investigated gender differences in the gambling characteristics of adolescents as a function of gambling problem severity. In general, both male and female adolescents reporting gambling problems demonstrated similar

Table 4 Prevalence of other problems by gambling risk category

	High risk (PPG) boys, girls	O. R. ♂ : ♀	Moderate risk (At-Risk) boys, girls	O. R. ♂ : ♀	Low risk (Social Gambler) boys, girls	O. R. ♂ : ♀
Weekly drug use						
Alcohol	32.7, 32.3	1.02	16.8, 17.0	0.98	12.4, 8.1**	1.59
Marijuana	26.4, 12,9	2.42	12.2, 9.5	1.33	10.4, 4.2***	2.65
Hard drugs	5.7, 6.5 (107, 31)	0.88	3.8, 3.2 (239, 95)	1.23	1.4, 0.5* (1155, 1142)	2.67
Grade average below 60%	33.9, 22.6 (115, 31)	1.76	12.9, 9.1 (163, 88)	1.48	8.5, 5.1 ** (916, 1135)	1.73
Clinically depressed	38.3, 42.1(47, 19)	0.85	19.0, 27.3 (121, 55)	0.63	10.0, 20.0 *** (893, 872)	0.44

Note. Percentages, odds ratios, and the number of boys and girls (in brackets) are presented. Clinical depression is defined as a RADS score of 77 or higher

* $p < .05$, ** $p < .01$, *** $p < .0005$

commonalities concerning aetiology, negative gambling-related consequences and risk factors. Both males and females preferred similar types of gambling—notably card-playing—and endorsed similar items on the DSM-IV-MR-J. Furthermore, pathological gambling was similarly associated with weekly gambling and comorbidity with other youth problems. While the results tend to support the argument that the DSM-IV-MR-J can adequately identify both male and female adolescent pathological gamblers, there remains an ongoing debate as to whether the DSM-IV-MR-J may be improved, whether the criteria for adolescent pathological gambling are valid, and whether youth problem gambling should be considered a disorder at all (Derevensky, Gupta, & Winters, 2003; Derevensky & Gupta, 2004b). Nevertheless, it appears that the items adequately address all the concerns associated with gambling problems for both males and females.

Not surprisingly, the present results suggest that males are more prone to report gambling problems and are more likely to note physiological and psychological signs of an addiction. When girls reported signs of gambling problems, as measured by the DSM-IV-MR-J, they usually indicated experiencing more negative consequences associated with their excessive gambling. In fact, 62% of the girls classified as At-Risk reported stealing money for the purposes of gambling, suggesting that this may be a very strong early-warning sign of a gambling problem.

A most interesting finding concerns the diminution or disappearance of traditional gender differences amongst adolescent PPGs. Difficulties that in the general adult population have been found to be more prevalent among either males or females seem to equally affect male and female adolescent problem gamblers. For example, regular gambling and drug use are reported to be more common among males (Derevensky & Gupta, 2004a, b, c; Stinchfield & Winters, 1998; Volberg, 1998). It was therefore not unexpected that in the present study male Social gamblers were found to be more likely to consume drugs and gamble on a weekly basis. Although statistical testing was not feasible due to small sample sizes, an examination of the odds ratios revealed that with the exception of weekly marijuana use, male and female PPGs demonstrated quite similar drug use and gambling patterns. Both males and females with severe gambling problems were as likely to be weekly users of alcohol and hard drugs, including cocaine, LSD and ecstasy. Depressive symptomatology on the other hand tends to be more problematic amongst females than males (Galambos, Leadbeater, & Barker, 2004). Concurringly, the present data suggests that adolescent female Social gamblers were more than twice as likely as males to meet the criteria for clinical depression, yet the prevalence rates for clinical depression for male and female PPGs were similarly high, providing evidence of commonality amongst multiple high risk behaviors for adolescents with problems (Jessor, 1998; Romer, 2003). It is important to note that youth reporting high rates of weekly drug use, school-related problems and clinical depression tend to be the same individuals experiencing gambling problems. As such, the results lend support that problem gambling may be one more manifestation of a general syndrome of adolescent antisocial and high-risk behaviors (see Dickson, Derevensky & Gupta, 2002 for further discussion).

The current findings with adolescents were generally consistent with research on gender differences between adult pathological gamblers. Potenza et al. (2001, 2006) reported that male At-Risk and Social gamblers tended to show a preference for sports betting and card games, however, no gender differences were observed among PPGs for card playing. Inasmuch as male adolescent PPGs were more likely to

report being preoccupied with gambling, needing more gambling to achieve the same level of excitement (tolerance) and chasing losses, it would appear that obsession and addictive behaviors are characteristics of their pathology, much like their adult counterpart. A trend toward using gambling as an escape from problems was observed in adolescent girls with severe gambling-related problems. However, unlike adult female pathological gamblers who were generally found to have higher rates of depression compared to men, adolescent girl PPGs were not significantly different from boys. For both PPG groups, depression was strongly associated with gambling problems. Finally, it would appear that truancy, lying, stealing and family discord are more characteristic of the progression towards problem gambling for females. Although adult male pathological gamblers were found to be more likely than females to be involved in illegal activities to support their gambling (Ladd & Petry, 2002; Potenza et al., 2001), the parallel trend found among female adolescents is perhaps not so unusual. Much of the criminal behavior involves stealing money from one's home and even when detected is unlikely to involve the authorities.

Despite some differences, the results nevertheless would argue in favour of a similar treatment strategy for adolescent boys and girls. In all of the DSM categories, gender differences in endorsement rates never exceeded 20%, resulting in the emergence of similar patterns. Independent of the similarities between males and females, clinicians can nevertheless expect an overrepresentation of boys seeking and requiring treatment. Future research is required to identify whether there are gender differences in (a) the pathways and trajectories towards youth problem gambling (Gupta & Derevensky, 2004; Nower & Blaszczynski, 2004) (b) early warning signs, (c) comorbidity with other youth problems and mental health disorders (e.g., ADHD, conduct and oppositional disorders), and (d) the long-term consequences for both male and female adolescent problem gamblers.

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