

Teacher Awareness and Attitudes Regarding Adolescent Risky Behaviours: Is Adolescent Gambling Perceived to be a Problem?

Jeffrey L. Derevensky · Renee A. St-Pierre · Caroline E. Temcheff · Rina Gupta

Published online: 20 February 2013
© Springer Science+Business Media New York 2013

Abstract Despite legislative prohibitions, there is empirical evidence that youth gamble on both regulated and unregulated activities. The current survey was designed to assess teachers' awareness and attitudes regarding adolescent gambling and other high-risk behaviours. Three-hundred and ninety teachers from Ontario and Quebec, with experience teaching students aged 12–18, completed an online survey. Results suggest that teachers are aware of the fact that youth gamble. Furthermore, they recognized the addictive nature of gambling and their subsequent consequences. Despite overestimating the proportion of youth experiencing gambling problems, gambling was viewed as being the least serious of issues affecting youth, with drug use and school violence topping the list. Almost half of respondents indicated that gambling in school can constitute a good learning activity. In regards to prevention, all other risky behaviours and academic problems were perceived as issues needing greater attention than gambling. These results, which are largely consistent with findings from a previous study examining parental perceptions of adolescent risky behaviours, suggest a need for greater awareness and teacher education.

Keywords Teachers · Attitudes · High-school · Students · Gambling · Continuing education

Introduction

Youth gambling and problem gambling has recently emerged as a significant public health issue. On an international scale, the liberalisation, expansion, and regulation of gaming activities has led to a significant increase in greater accessibility and availability of

J. L. Derevensky · R. A. St-Pierre · R. Gupta
International Centre for Youth Gambling Problems and High Risk Behaviors, McGill University,
3724 McTavish, Montreal, QC H3A 1Y2, Canada

C. E. Temcheff (✉)
Département de psychoéducation, Université de Sherbrooke, 2500 boul. de l'Université, Sherbrooke,
QC J1K 2R1, Canada
e-mail: Caroline.Temcheff@usherbrooke.ca

gambling opportunities for individuals. In spite of legislative prohibitions for adolescent gambling in most jurisdictions, there is ample evidence that youth have managed to gamble on both regulated and unregulated activities (Jacobs 2004; Volberg et al. 2010).

Adolescent Gambling Behavior

Gambling has remained a popular form of entertainment and recreation among adolescents, with estimates of problem and pathological gambling for this age group ranging from 0.9 to 8.1 % internationally (Volberg et al. 2010). Such variability has been dependent upon a number of methodological, geographic, sampling, familial, availability and accessibility factors (see Derevensky et al. 2003, for a more comprehensive discussion of prevalence differences).

Parental Attitudes and Concerns about Youth Gambling

Multiple cross-sectional studies have revealed a strong association between parental gambling attitudes and the gambling behaviours of their children (Delfabbro and Thrupp 2003; Vachon et al. 2004; Wickwire et al. 2007). As well, parental indifference to their child's involvement in gambling, often accompanied by low levels of monitoring and inadequate disciplinary practices, has been shown to significantly increase the likelihood of children's gambling problems (Vachon et al. 2004). Taken together, these findings suggest that higher levels of parental gambling and pro-gambling attitudes are associated with an increased frequency of adolescent gambling participation and increases in gambling problems (Delfabbro and Thrupp 2003; Magoon and Ingersoll 2006), while conversely, parental disapproval of gambling has been related to lower incidences of adolescent gambling problems (Wickwire et al. 2007). This is not to suggest that parents are the only significant influence upon adolescent gambling. Delfabbro and Thrupp (2003) revealed that adolescents who gambled were more likely to report peer approval of their gambling. They observed an association between gambling frequency and perceptions of peer gambling behaviour, with frequent gamblers more likely to report having peers who gamble in excess. Wickwire et al. (2007) also reported that adolescent perceptions of their friends' involvement in problem behaviours (including gambling) was predictive of higher levels of gambling frequency, and greater risk of severe problem gambling.

Compared with other adolescent risky behaviours, gambling is frequently viewed as less serious by parents. A Canadian national study of parents recently reported that of 13 potentially adolescent risky behaviours; drug use, violence in schools (bullying), excessive time online, negative self-image, alcohol use, excessive video game playing, depression, unsafe sexual activities, smoking, eating disorders, and drinking and driving were viewed by parents as being of greater concern than gambling, with only 40 % of parents of adolescents acknowledging that gambling was a possible concern (Campbell et al. 2011). The fact that signs of a gambling problem are not readily observable (Derevensky 2012), and that most parents view gambling problems as an adult issue, may help explain this lack of parental concern.

The Importance of Teacher Attitudes to Adolescent Involvement in Risk Behaviors

In addition to parents and peers, teachers are particularly well suited to have an impact on student behaviour. There is little doubt that teachers are genuinely concerned with the

psychological health of their students and are motivated to directly or indirectly address mental health issues in the classroom (Graham et al. 2011; Kidger et al. 2009; Roeser and Midgley 1997). As well as being motivated to address student mental health issues, it appears teachers, are in general, knowledgeable about the prevalence of potentially harmful youth behaviours. In a comparative study, DeHaan and Boljevac (2009) found that teachers were more aware of youth alcohol use than parents or community leaders. More recently, Graham et al. (2011) had teachers identify the risk factors they felt were most likely to impact student mental health. Surprised by teachers' in-depth knowledge on the topic, they concluded that "the diversity of issues [teachers] identified highlight both their awareness of the complexity of the children's lives and the breadth of the issues [they face] in their day-to-day contexts" (pp. 484).

Researchers have also begun to examine the relationship between educator attitudes regarding high-risk behaviours and student involvement in such behaviours. To date, investigations in this area have mainly focused on teachers' attitudes toward bullying and violence, which have been found to influence the extent to which students engage in these victimization behaviours (Biggs et al. 2008; Hektner and Swenson 2012). Given the powerful impact that teacher attitudes toward bullying and violence appear to have on student victimization behaviours, it is not unreasonable to suspect that teacher attitudes toward adolescent gambling could have a similar effect.

Findings from the limited research on teacher attitudes toward gambling suggest that, similar to parents, educators may underestimate the risks associated with youth gambling (Graham et al. 2011; Ladouceur et al. 2004; Shaffer et al. 2000). In particular, the issue of youth gambling does not appear to be regarded as an area of concern for the school environment compared to other high-risk behaviours in spite of increased general awareness and media coverage. An early study by Ladouceur et al. (2004) found that only 25 % of teachers surveyed believed schools should encourage prevention related to gambling, while a large majority contended that drug (77 %), smoking (67 %) and alcohol (62 %) prevention programs are necessary. In a more recent study, Graham et al. (2011) had teachers list high-risk behaviours they believed were most likely to impact a child's mental health. Of the 19 different behaviours enumerated by teachers, gambling was not even included. These findings may be a result of the fact teachers remain either unconcerned or unaware of the issues of youth gambling in general or youth problem gambling in particular. Shaffer et al. (2000), for instance, reported that only 26 % of the high schools they surveyed had someone responsible for dealing with gambling-related matters, while not a single one provided in-service education or training about gambling-related issues for faculty and staff. Furthermore, while 82 % of schools regularly conducted health surveys among their students, only 5 % of these surveys ever included any questions about gambling. Of particular concern were the findings that less than one-third of teachers reported an interest in integrating gambling education in school-based curricula (Shaffer et al. 2000), and less than half were willing to take training on the psychology of gambling during normal school hours (Ladouceur et al. 2004). Recent reports from parents lend further supportive evidence that students are rarely exposed to gambling prevention efforts at school (Campbell et al. 2011). While over 60 % of parents indicated that their child's school had at some time provided prevention programs or educational material for risky behaviours including substance use, smoking, sex, and bullying, less than 10 % reported being aware of the same for gambling.

Since much of adolescents' learning comes from the instruction they receive in their classrooms, and teachers have been trained to look for signs of risky behaviours, schools offer a potentially important environment to intervene if problems exist. However, before

such interventions can take place, educators and administrators must recognize that a problem exists. During the past decade, the mass media has highlighted the potential detrimental impact of gambling's expansion upon both adults and youth. This raises the question of whether the increased media attention has engendered greater awareness amongst educators of issues related to adolescent gambling? The current research was designed to assess teachers' awareness, concerns and attitudes regarding adolescent gambling, problem gambling and other high risk behaviours among high school students.

Method

Participants

Teachers from English-speaking public and private secondary schools in Ontario and Quebec were recruited via advertisements distributed to principals, emails sent directly to teachers, and through provincial teacher unions. All interested participants were provided with a link to an online survey program in order to complete the questionnaire. Of the initial 440 individuals who responded, 404 participants completed the entire survey, with an additional 14 being excluded for failing to meet the study's criteria (having direct teaching experience with students between 12 and 18 years of age). The socio-demographic characteristics of the sample are presented in Table 1. Of the 390 participants included in the final sample, a little more than half were female teachers (56.7 %), with a larger proportion of teachers aged 30–45 years (33.1 %). The majority of the sample was comprised of teachers from the province of Ontario (75.8 %), with approximately four-fifths of them teaching in an urban area. Concerning teaching experience, 90.0 % of the sample indicated that they taught in the public school system, with 63 % having a minimum of 10 years of teaching experience.

Measures

The survey assesses responses in four domains: (a) teacher awareness concerning adolescent gambling and other risk behaviours (understanding of adolescent participation in gambling and excessive gambling among youth); (b) teacher beliefs and attitudes towards adolescent gambling and other risk behaviours; (c) teacher awareness of youth education and prevention measures for gambling and other risk behaviours; and (d) teacher beliefs and attitudes towards youth education and prevention measures for gambling and other risk behaviours. In addition to the four domains examined, participants completed a section with demographic information. The questions for the survey instrument were adapted from the Parents as Partners Survey (Campbell et al. 2011) for comparison purposes and the Gambling Activities Questionnaire (Gupta and Derevensky 1996).

For the first area, teachers answered multiple questions regarding their understanding of adolescent participation in gambling and excessive gambling among youth. For example, teachers were asked, "What percentage of youth participate in a gambling related activity at least once a year?" and "What percentage of youth experience problems resulting from excessive gambling in a year?" Teachers also indicated the extent they agreed with statements concerning the characteristics and consequences of youth problem gambling on a five-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*), such as "an adolescent problem gambler tries unsuccessfully to stop gambling" and "youth gambling can negatively impact work/school performance". For the second area, teachers rated the

Table 1 Socio-demographic characteristics of the participants

Variable	<i>n</i>	Percentage
Gender		
Male	169	43.3
Female	221	56.7
Age		
20–29 years	52	13.3
30–39 years	129	33.1
40–49 years	95	24.4
50–59 years	101	25.9
60+ years	13	3.3
Years of teaching experience		
1–3 years	39	10.0
4–6 years	53	13.6
7–9 years	51	13.1
10–15 years	97	24.9
16–20 years	50	12.8
21–25 years	41	10.5
25+ years	59	15.1
School type		
Public school	351	90.0
Private school	25	6.4
Other	9	2.3
Not disclosed	5	1.3
Province of employment		
Québec	93	23.8
Ontario	291	74.6
Not disclosed	6	1.5
Employment region ^a		
Urban area (density >400 persons/km ²)	316	81.0
Rural area (density <400 persons/km ²)	74	19.0

^a Based on 2006 Canadian Census Dictionary definitions

seriousness of various adolescent issues on a five-point Likert scale (1 = *not at all serious*, 5 = *very serious*). Teachers also indicated the extent that they agreed with statements concerning the acceptability of gambling on a five-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*), such as “there is nothing wrong with gambling occasionally” and “it is acceptable for teens to watch professional poker tournaments or a TV show featuring gambling”. Within the third area, teachers answered several questions regarding existing policies and prevention measures for adolescent gambling and other risk behaviours. For example, teachers were asked, “Are you aware of any current policies in effect at your school that address adolescent gambling?” and “To the best of your knowledge, does your school have a gambling prevention program?” Teachers were also asked about their personal involvement in addressing youth gambling issues with their own students (e.g., “How frequently do you have conversations with your students about gambling?”). Finally, teachers rated the importance of attributing attention to education and prevention activities for adolescent gambling and other risk behaviours on a five-point Likert scale

(1 = *not important*, 5 = *extremely important*). Teachers also indicated their level of interest in receiving prevention training and materials for youth gambling (e.g., “Would you be interested in receiving training about gambling prevention during a professional day?”).

Procedure

Following approval of the study’s protocol by the University Research Ethics Board office, participants were contacted directly or indirectly via their teacher associations or schools to participate in the study electronically. Teachers were provided with a brief overview of the research, the importance of their participation, and a link to the online survey. The survey required approximately 25–30 min to complete. Upon completion of the study, participants wishing to do so were entered into a random draw for two \$100 gift cards and one Netbook grand prize.

All participants were informed that their participation was completely voluntary and that they could terminate their participation at any time without consequence. It was also explained that responses to the survey were anonymous and confidential and that no identifying teacher information or school names were acquired.

Data Analysis

Descriptive statistics were used to examine teacher knowledge, beliefs, and attitudes regarding adolescent gambling and youth problem gambling prevention. In addition, Chi square analyses, Cochran–Mantel–Haenszel tests of association, and logistic regression analyses were conducted to address questions regarding differences in teacher knowledge, beliefs, attitudes, and interest in obtaining further information and training. Given that for some research questions, there were multiple observations per individual, the Cochran–Mantel–Haenszel test of association was chosen as an appropriate test statistic, as this test is suitable for situations in which it is desirable to compare responses from the same individuals to multiple questions, or under multiple conditions.

In all cases, differences between male and female teachers as well as differences based on years of experience were assessed. No appreciable differences were found between male and female teachers nor as a result of their years of teaching experiences. Analyses based upon geographical location (urban vs. rural) similarly did not yield meaningful differences, except where indicated.

Results

Knowledge and Awareness of Youth Gambling and Youth Gambling Problems

In general, secondary school teachers were knowledgeable about the higher prevalence of gambling involvement among older adolescents than younger youths. As shown in Table 2, more than half of teachers (56 %) surveyed indicated that over 40 % of adolescents aged 15–18 years likely participate in some form of gambling for money at least once a year, compared to 34 % of teachers who believed that a similar proportion of youths aged 11–14 years are gambling. While educators appeared to be aware of the age differences in adolescent gambling participation (likely due to availability and accessibility issues), many

of them underestimated the popularity of gambling among younger adolescents. Specifically, only 29 % of teachers surveyed suggested that between 41 and 80 % of adolescents aged 11–14 years have gambled for money in a given year.

Teachers were also given the opportunity to estimate the percentage of youth between 11–14 years and 15–18 years currently experiencing gambling-related problems. In general, most teachers overestimated the prevalence of gambling problems among youth. While 60 % of teachers surveyed believed that a small proportion of 11–14 year olds (1–10 %) experience problems resulting from excessive gambling, 88 % of teachers overestimated the prevalence of gambling problems among 15–18 year olds (see Table 2).

Overall, teachers appeared to be acutely aware of the behaviours associated with adolescent problem gambling. The majority of teachers (63 %) correctly believed that thinking often about gambling (preoccupation) is characteristic of an adolescent problem gambler. Approximately half of teachers also perceived spending excessive time gambling (51 %) and increasing the amount of money wagered over time (56 %) to be characteristic of young problem gamblers. In addition, 40 % of teachers thought that stealing money to support gambling was characteristic of young problem gamblers. However, only 24 % of teachers identified “tries unsuccessfully to stop gambling” as a symptom of adolescent problem gambling, and 16 % felt that weak mathematical abilities were characteristic of young problem gamblers.

In addition to being aware of the characteristics of adolescent problem gambling, teachers appear to be fairly knowledgeable about the legal age to purchase lottery products in their respective provinces. However, differences between teachers based on their province were noted. Quebec teachers were more accurate in their knowledge of the legal age for engaging in gambling activities than teachers from Ontario. Specifically, Quebec teachers were significantly better able to identify the correct legal age(s) for purchasing a

Table 2 Teacher estimates of the percentage of youth who participate in gambling and experience gambling problems in a year

	Age group	
	11–14 years (%)	15–18 years (%)
Teacher estimates of percentage of youth that participate in a gambling at least once a year (%)		
1–4	7	0
5–10	15	5
11–20	18	8
21–40	26	21
41–60	16	22
61–80	13	16
81–100	5	18
Teacher estimates of percentage of youth that experienced gambling problems in the past year		
1–4	36	12
5–10	24	22
11–20	20	19
21–40	13	28
41–60	5	13
61–80	1	5
81–100	1	1

lottery ticket (100 vs. 76 %) [χ^2 (1, $N = 363$) = 48.17, $p < .001$], for gambling in a casino (97 vs. 48 %) [χ^2 (1, $N = 362$) = 104.75, $p < .001$], and for playing electronic gaming machines (i.e., video lottery terminals, slot machines) (96 vs. 41 %) [χ^2 (1, $N = 359$) = 121.71, $p < .001$] in their respective province than were teachers in Ontario.

When asked specifically about their own experiences with student gambling, a considerable proportion of teachers indicated that they were aware of students' participation in gambling activities. Overall, 38 % of teachers indicated that they had observed students participating in gambling activities at least once during the past year, with 53 % reporting that they had overheard students talking about their participation in gambling activities at least once during the past year. In addition, 17 % of teachers said that in the past year they had been informed that some students were suffering from gambling problems.

Beliefs and Attitudes Regarding Adolescent Gambling and Other High-Risk Activities

Teachers rated the overall seriousness of a number of adolescent issues that may impact their students by indicating the level of agreement on a five point Likert scale (1 = *not serious*, to 5 = *very serious*). These issues included academic problems, violence in schools/bullying, drug use, alcohol use, drinking and driving, unsafe sexual activities, smoking, eating disorders/obesity, depression, negative body image, excessive video game playing, excessive amounts of time online, unsafe online activities, and gambling. Amongst the entire sample, drug use was perceived as being the most serious issue (66 % viewed it as either *serious* or *very serious*), followed by violence related to schools/bullying (62 %), excessive amounts of time online (60 %), and negative body image (58 %) (see Fig. 1). Of all the potential problem adolescent issues, gambling was viewed by teachers as being the least serious, with only 20 % of all teachers perceiving adolescent gambling as being as serious issue. No significant differences in perceptions of the seriousness of adolescent gambling were observed between male and female teachers, or between Quebec and Ontario teachers.

The Cochran–Mantel–Haenszel test of association was used in order to detect significant differences in teachers' perceptions of the seriousness of the various adolescent issues (gambling problems, drug use and abuse, alcohol use and abuse, and violence in schools). The analysis suggested that there was an association between the perceived seriousness and the type of adolescent problem ($\chi^2 = 257.25$, $df = 3$, $p < 0.0001$). In order to determine the odds ratios of the "serious or very serious" teacher response, we proceeded with a logistic regression that modeled the binary response (low versus high degree of seriousness) between types of adolescent problems, using the Generalized Estimating Equations method to account for the repeated measures. It was found that the odds of a teacher reporting that adolescent drug use was "serious to very serious" were 8.06 times higher than reporting that adolescent gambling was "serious to very serious" (CI between 6.03 and 10.79, $p < .0001$), the odds of reporting that violence in schools was "serious to very serious" was 6.26 times higher than gambling (CI between 4.66 and 8.42, $p < .0001$), and the odds of reporting that teen alcohol use was "serious to very serious" were 5.00 times higher than adolescent gambling (CI between 3.75 and 6.63, $p < .0001$).

Findings also revealed that many educators do not recognize the potential for adolescent involvement in current high-risk activities lead to more serious problems in the future. Rather it appears that teachers believe with the exception of cocaine use that many of these high-risk behaviours may be a temporal and transient problem. As illustrated in Fig. 2, less than one-third (29 %) of teachers reported that underage gambling is likely to ultimately

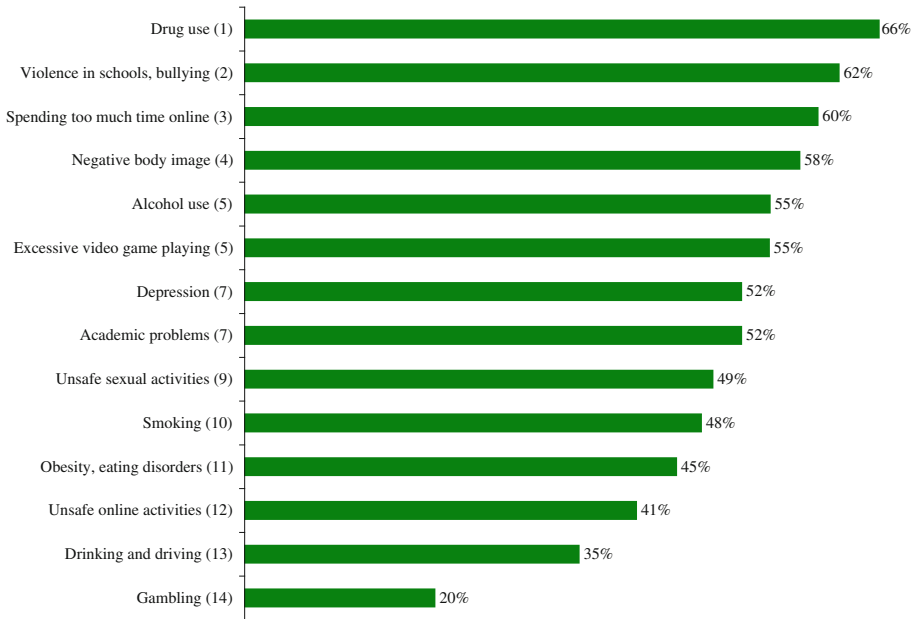


Fig. 1 Teacher perceptions of the seriousness (serious or very serious) of adolescent issues

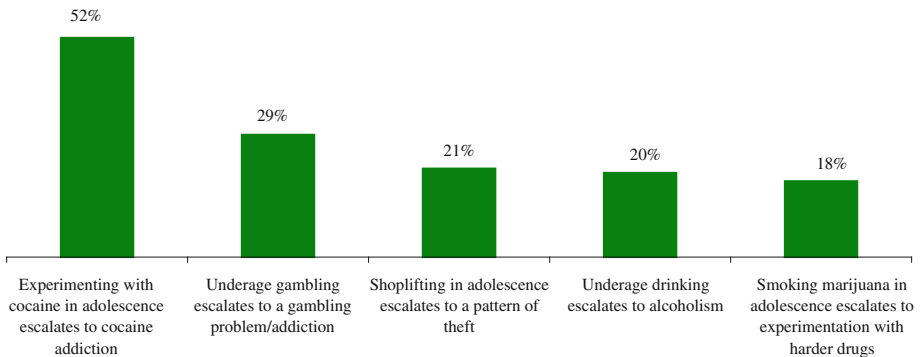


Fig. 2 Teacher beliefs regarding the likelihood of adolescent participation in high-risk activities leading to serious problems. Figure represents responses “quite likely” and “very likely”

escalate to a gambling addiction/problem, and only 20 % of teachers believed it is likely for underage drinking to escalate to alcoholism.

While teachers may rank gambling as less serious in comparison to other youth issues and may underestimate the probability of adolescent gambling involvement leading to more severe problems in the future, they do recognize the potential risks and negative consequences associated with gambling and excessive gambling. The majority of teachers agreed that adolescent gambling is highly addictive (87 %), and has the potential to interfere with work and school performance (89 %) along with peer relationships (86 %). Many educators also believed that gambling in adolescence can lead to criminal behaviour

(70 %). Interestingly, 48 % of teachers still felt that playing/gambling with money in school can be a good learning activity for youth.

Knowledge of Educational Resources and Prevention Programs for Adolescent Gambling

Only 5 % of teachers surveyed were aware of the existence of an actual formal gambling prevention program within their school. At the same time, 23 % of teachers reported that they believed that their school library had some gambling prevention resources.

With respect to policies for addressing adolescent high-risk behaviours, teachers are well aware of both institutional and school board policies concerning violent behaviours, drug use, alcohol use, tobacco use, and sex education (see Fig. 3). However, less than half of teachers reported knowledge of institutional- or board-level policies concerning eating disorders (36 and 38 %, respectively), and few teachers reported knowledge of policies relating to gambling (approximately 20 % of teachers reported some institutional or school board policy concerning gambling) (see Fig. 3).

There is typically limited training in teacher education programs addressing issues related to youth gambling problems and few school boards have initiated teacher workshops to help educators deal with presenting problems. As such, it is not surprising that teachers felt the least prepared to deal with gambling-related issues (43 %) compared with alcohol (61 %) and drug (58 %) problems. The Cochran–Mantel–Haenszel test of association was used in order to detect differences in the probability of teachers reporting feeling “confident to highly confident” in dealing with student issues relating to gambling, alcohol, or drug problems. The analysis suggested that there was an association between the type of adolescent problem and the confidence of teachers ($\chi^2 = 68.68$, $df = 2$, $p < 0.0001$). In order to determine the odds ratios of “high confidence,” we proceeded

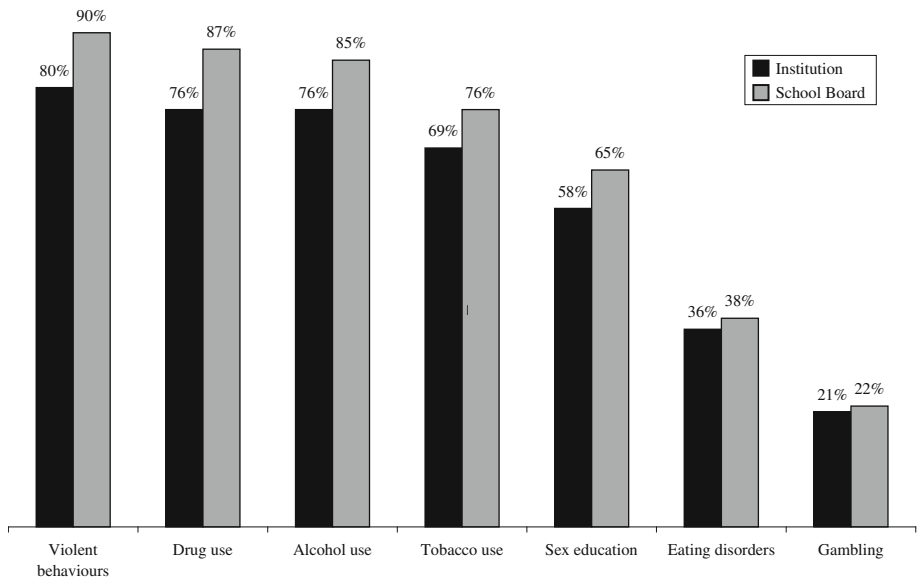


Fig. 3 Teacher awareness of current institutional-level and school board policies to address adolescent high-risk behaviours

with a logistic regression that modeled the binary response (low versus high confidence) between types of adolescent problems, using the Generalized Estimating Equations method to account for the repeated measures. It was found that the odds of reporting high confidence on dealing with issues relating to alcohol problems was approximately 2.05 times higher than reporting high confidence for gambling (CI between 1.68 and 2.51, $p < .0001$), while the odds of reporting high confidence for drug problems was approximately 1.82 times higher than gambling (CI between 1.48 and 2.25, $p < .0001$). The majority of teachers said that they would refer a student expressing gambling-related concerns to seek help from a professional (79 %), with few teachers indicating that they feel comfortable informing students about what to do with a gambling problem (32 %).

Consistent with other responses, teachers felt that provisions of prevention programs targeting sex education, drug use, violence, alcohol use, tobacco and eating disorders was more important than provision of gambling prevention programs (see Fig. 4). Attitudes, perceptions and behaviours of teachers are also reflective in the frequency of conversations teachers have with their students concerning adolescent problems and potentially risky behaviours. Only 7 % of teachers reported discussing gambling-related issues with their students. All other potentially risky behaviours as well as academic problems were perceived as issues needing greater attention from teachers than gambling.

With respect to gambling issues, most teachers believed that it is primarily the responsibility of parents, governmental bodies, teens themselves, mental health professionals and the police to provide prevention programs. Only 51 % of teachers believed that school staff should be responsible for the prevention of adolescent gambling problems. Of interest is that 90 % of teachers believed that the gambling industry should have a role in the development of gambling prevention programs (see Fig. 5).

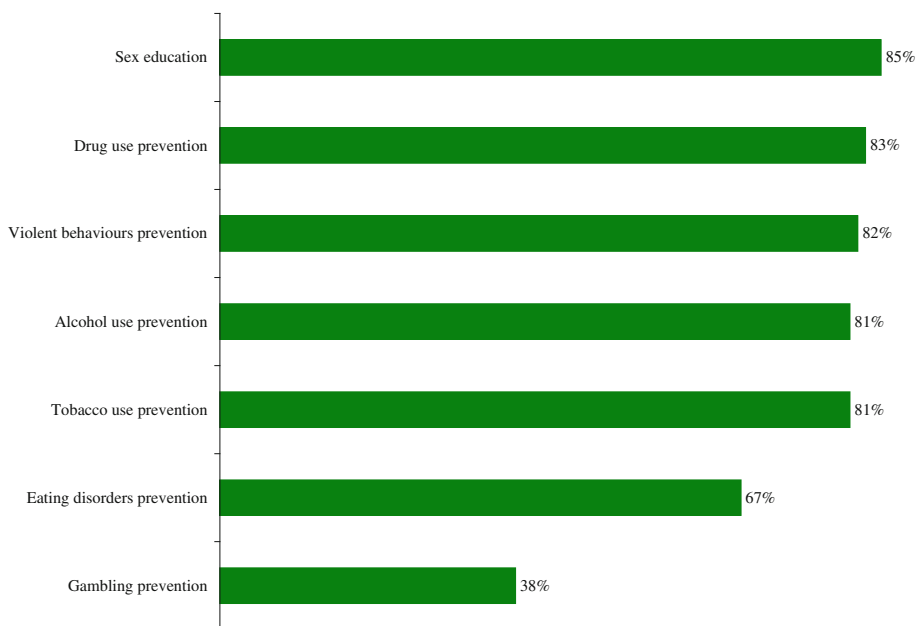


Fig. 4 Teacher beliefs concerning the importance of the schools addressing the prevention of adolescent high-risk behaviours. Figure represents responses “very important” and “extremely important”

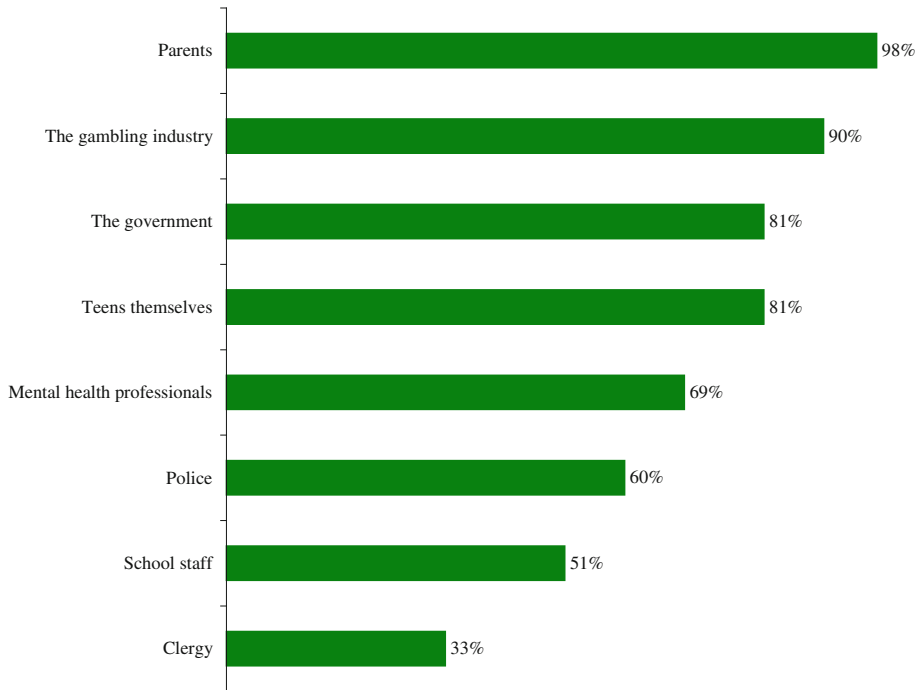


Fig. 5 Teacher allocation of responsibility for the prevention of adolescent gambling. Figure represents responses “agree” and “strongly agree”

While secondary school teachers view academic problems and multiple other risky behaviours as considerably more important than gambling problems, it is interesting to note that at the end of the survey almost one-third of all teachers (32 %) reported that they were either very interested or extremely interested in receiving information during a professional day with respect to adolescent gambling and problem gambling (see Fig. 6). However, a greater proportion of teachers reported being interested in receiving continuing education on substance abuse and violence (52 and 55 % respectively). The Cochran-Mantel-Haenszel test of association was used in order to determine whether the probability of teachers reporting being “very interested to extremely interested” (hereafter referred to as “high interest”) in receiving continuing education on gambling, substance abuse or violent behaviours during a professional day was different. The analysis suggested that there was clearly an association between the topic of the continuing education (gambling, substance abuse or violence) and the reported interest of teachers ($\chi^2 = 82.5$, $df = 2$, $p < 0.0001$). In order to further elucidate the odds ratios of “high interest” we proceeded with a logistic regression that modeled the binary response (low versus high interest) between topics of continuing education. Again, we used the Generalized Estimating Equations method to account for the repeated measures. It was found that the odds of reporting high interest for continuing education on substance abuse was approximately 2.33 times higher than reporting high interest for gambling (CI between 1.85 and 2.92, $p < .0001$), while the odds of reporting high interest for continuing education for violence was 2.68 times higher than gambling (CI between 3.46, $p < .0001$).

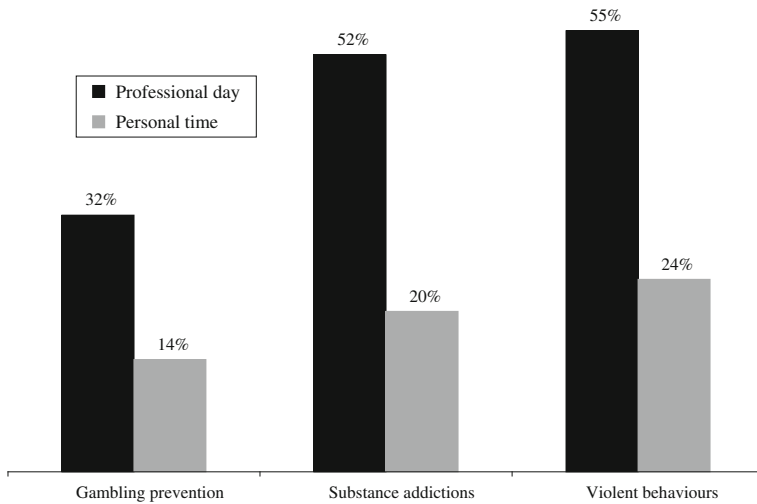


Fig. 6 Teacher reporting of being very interested or extremely interested in receiving training concerning adolescent high-risk behaviours

Some teachers also reported being prepared to spend personal time engaging in continuing education about gambling issues (14 %) as well as substance abuse issues (20 %) and violent/aggressive behaviours (24 %). The Cochran-Mantel-Haenszel test of association was again used in order to discover differences in the probability of teachers reporting “high interest” in receiving continuing education on gambling, substance abuse or violent behaviours during their personal time. This analysis also suggested that there was an association between the topic of the continuing education (gambling, substance abuse or violence) and the reported interest of teachers ($\chi^2 = 33.84$, $df = 2$, $p < 0.0001$). Using logistic regression (with Generalized Estimating Equations method), it was found that the odds of reporting high interest for continuing education on substance abuse was approximately 1.60 times higher than reporting high interest for gambling (CI between 1.25 and 2.04, $p < .0002$), while the odds of reporting high interest for continuing education for violence was 2.04 times higher than gambling (CI between 1.55 and 2.67, $p < .0001$). It was also found that the odds reporting high interest for continuing education on personal time for violence was 1.28 times higher than substance abuse (CI between 1.06 and 1.53, $p < .01$).

Discussion

Despite not being of legal age to gamble on provincially regulated forms of gambling, significant proportions of adolescents have been shown to participate, to some degree, on most forms of regulated and unlicensed gambling activities (Stinchfield 2011; Volberg et al. 2010). Whether gambling amongst their friends (e.g., poker or sports wagering), purchasing lottery tickets, sneaking into casinos or gambling via the Internet, gambling remains a popular form of recreation and entertainment for our youth (Gupta and Der-evensky 2008; Turner et al. 2008). Current prevalence research reveals that between 40 and 85 % of adolescents have gambled in some form during the past year, depending on the

year in which the data was collected, methodological differences, the age of the adolescent and the jurisdiction in which the surveys were completed (Delfabbro et al. 2009; Jackson et al. 2008; Moodie and Finnigan 2006; Olason et al. 2006; Splevins et al. 2010; Skokauskas and Satkeviciute 2007; Volberg et al. 2010; Welte et al. 2008). There is also ample evidence that youth are not only gambling but are amongst the highest risk group experiencing gambling-related problems (Volberg et al. 2010; Welte et al. 2008). In spite of this, they typically do not present in the same way as adult problem gamblers. They do not lose their homes because they typically live with their parents, spouses do not threaten to leave unless the gambling is stopped as they are unmarried, and they do not lose their jobs as they are typically still in school. This *hidden addiction* (see Derevensky et al. 2011; Derevensky 2012), while having many mental health, financial, personal, social and legal consequences can go on for quite some time before being identified.

Given that teachers spend large amounts of time with adolescents on a daily basis, and get the chance to observe adolescents in different contexts (classroom vs. break periods and social situations), they might represent a first line of adults who could potentially help with identification of young people suffering from gambling addiction, and help them find appropriate services. In fact, a considerable proportion of teachers had overheard students talking about gambling in the past year (53 %), while 38 % had actually observed students participating in gambling activities. This finding is consistent with Ladouceur et al. (2004), who found that 45 % of high school teachers reported having observed gambling activities in their school, and suggests that teachers are aware of students' gambling participation. However, only 17 % of teachers had heard of a student suffering from gambling problems in the past year. In addition, teachers were well aware of legal ages for gambling (especially in Quebec, where there is a consistent age of majority for gambling, alcohol use, voting etc.), and the warning signs of problem gambling. Given all this information that teachers seem to already have, the possibility of teachers becoming a first line of trusted adults in terms of assisting young people struggling with gambling addiction seems very promising.

However, this study also revealed some areas where teachers' knowledge of gambling-related issues was weaker. Most teachers overestimated the prevalence of gambling problems among older adolescents (15–18 years old). It is unclear why this may be the case, but some hypotheses might have to do with the salience of cases with gambling addiction or the commonplace nature of gambling activities in some high schools. However, it is somewhat surprising that though a full 41 % of teachers thought that between 21 and 60 % of adolescents experience gambling problems in a given year, most teachers rated gambling as least important in terms of prevention programs and least serious out of a list of 12 other adolescent risk behaviours.

Recent research from a Canadian national study has revealed that amongst all potentially problematic adolescent risky behaviours, parents perceive gambling as the least concerning (Campbell et al. 2011, 2012). The results from the current study confirm that high school teachers when asked about potentially problematic adolescent risky behaviours similarly view gambling as the least problematic behaviour. Comparisons between concerns of parents and teachers can be found in Fig. 7.

Teachers reported a dearth of available resources and policies focused upon gambling, with only 22 % suggesting existing school policies and 21 % reporting school board policies were available related to gambling. To help raise community and parental awareness about youth gambling, greater emphasis should be made in establishing school and school board policies similar to those available for violent behaviours and substance use. Slightly more than one-third of teachers (38 %) suggested that schools should be

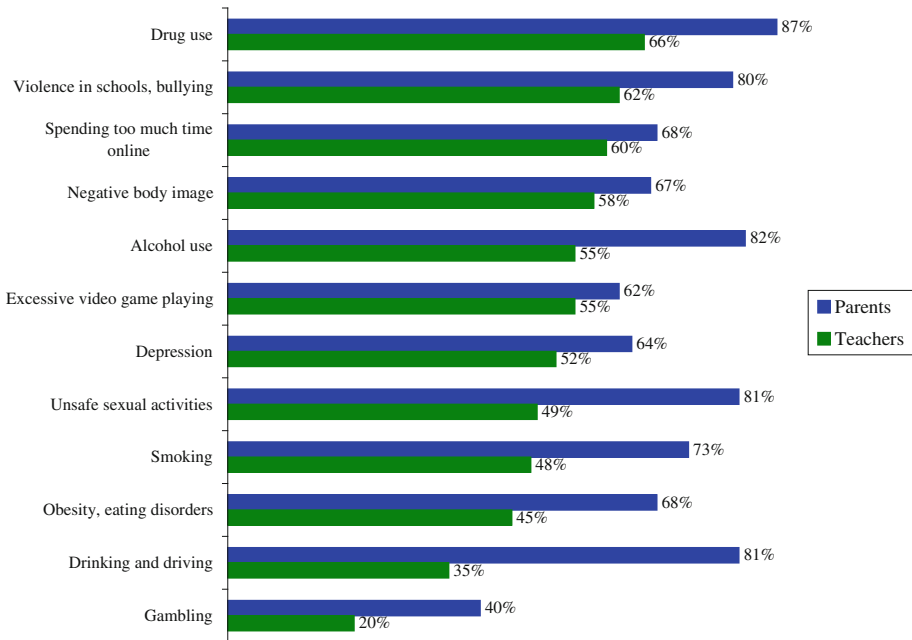


Fig. 7 A comparison of parents and teachers perceptions concerning adolescent risky behaviours. (Parent data from Campbell et al. 2011)

addressing the issue of youth gambling. Approximately one-third of teachers (32 %) indicated interest in obtaining continuing education training on issues relating to adolescent gambling and gambling prevention during a professional day. This finding was slightly lower than the proportion teachers (49 %) who endorsed interest in receiving training concerning gambling in Ladouceur et al. (2004).

Finally, the fact that teachers might view adolescent gambling involvement as a transient adolescent activity that is unlikely to develop into a gambling problem, and the fact that almost half of teachers believed that gambling was a good way to teach mathematical skills without cautionary warnings, needs to be addressed within teacher training. Providing teachers with accurate information regarding the risk of these types of behaviours is of paramount importance for competent and ethical practice.

The availability, accessibility and normalization of gambling continue to grow at a rapid rate, and never before in our history has gambling been so readily accepted as a recreational form of entertainment (Gupta and Derevensky 2008). National and international data all suggest that gambling rates are increasing and that youth remain a high-risk vulnerable population for gambling-related problems (Volberg et al. 2010). As Derevensky (2012) has noted, this is a growing concern and important social policy issue that needs to be addressed. Educators can provide an invaluable resource in helping raise awareness about the warning signs and negative consequences associated with problem gambling. Such efforts will go far to help minimize problems.

Conclusions and Implications for Practice

Similar to many behavioural studies the current research needs replication with a wider and more diverse sample of educators before definitive conclusions can be drawn. Nevertheless, there is ample evidence from teachers in two Canadian provinces that much work needs to be done in spite of our current awareness efforts. The results parallel those found in the recent Canadian national study assessing parents' perceptions of adolescent risky behaviours, clearly suggesting the need for increased awareness and education with respect to youth gambling and problem gambling. With growing numbers of venues and attractive forms of gambling are becoming relatively easily accessible for youth, there is a heightened need for these issues to be addressed. For teachers, this can be accomplished through the development and implementation (where possible) of educational prevention programs for high school and secondary school students. At the very least, such programs and informational materials should be included in school resource rooms and libraries. The results further suggest the willingness of teachers to receive more in-service educational workshops concerning youth gambling issues. These workshops could be held on school or school board professional days, as well as teacher conventions. Finally, on a policy level it is essential that policies related to student gambling be firmly established at the school and school board level similar to those established for drug and alcohol use, smoking, and bullying/violence.

Acknowledgments This research was supported by a grant to Drs. Derevensky and Gupta by the Ontario Problem Gambling Research Center. The authors would like to thank Katrina Smith for her assistance with the early phases of the data collection, and Anthony Kokin for his assistance with preliminary analysis of data. Finally, we are most grateful to the participants of this study. We thank them for taking the time to honestly fill out this study and share their attitudes relating to gambling in high schools with us.

References

- Biggs, B. K., Vernberg, E. M., Twemlow, S. W., Fonagy, P., & Dill, E. J. (2008). Teacher adherence and its relation to teacher attitudes and student outcomes in an elementary school-based violence prevention program. *School Psychology Review*, 37(4), 533–549.
- Campbell, C., Derevensky, J., Meerkamper, E., & Cutajar, J. (2011). Parents' perceptions of adolescent gambling: A Canadian national study. *Journal of Gambling Issues*, 25, 36–53. doi:10.4309/jgi.2011.25.4.
- Campbell, C., Derevensky, J., Meerkamper, E., & Cutajar, J. (2012). The influence of cultural background on parental perceptions of adolescent gambling behaviour: A Canadian study. *International Journal of Mental Health and Addictions*, 10, 537–550. doi:10.1007/s11469-011-9337-2.
- DeHaan, L., & Boljevac, T. (2009). Alcohol use among rural middle school students: Adolescents, parents, teachers and community leaders' perceptions. *Journal of School Health*, 79, 58–66. doi:10.1111/j.1746-1561.2008.00377.x.
- Delfabbro, P., Lambos, C., King, D., & Puglies, S. (2009). Knowledge and beliefs about gambling in Australian secondary school students and their implications for education strategies. *Journal of Gambling Studies*, 25, 523–539. doi:10.1007/s10899-009-9141-0.
- Delfabbro, P., & Thrupp, L. (2003). The social determinants of youth gambling in South Australian adolescents. *Journal of Adolescence*, 26, 313–330. doi:10.106/S0140-1971(03)00013-7.
- Derevensky, J. (2012). *Teen gambling: Understanding a growing epidemic*. New York: Rowman & Littlefield Publishing.
- Derevensky, J., Gupta, R., & Winters, K. (2003). Prevalence rates of youth gambling problems: Are the current rates inflated? *Journal of Gambling Studies*, 19, 405–425. doi:10.1023/A:1026379910094.
- Derevensky, J., Shek, D., & Merrick, J. (2011). *Youth gambling: The hidden addiction*. Berlin: De Gruyter.
- Graham, A., Phelps, R., Maddison, C., & Fitzgerald, R. (2011). Supporting children's mental health in schools: Teacher views. *Teachers and Teaching*, 17, 479–496. doi:10.1080/13540602.2011.580525.

- Gupta, R., & Derevensky, J. L. (1996). The relationship between gambling behaviour and video-game playing in children and adolescents. *Journal of Gambling Studies*, 12, 375–394. doi:10.1007/BF01539183.
- Gupta, R., & Derevensky, J. L. (2008). Gambling practices among youth: Etiology, prevention and treatment. In C. A. Essau (Ed.), *Adolescent addiction: Epidemiology, assessment and treatment* (pp. 207–230). London: Elsevier.
- Hektner, J. M., & Swenson, C. A. (2012). Links from teacher beliefs to peer victimization and bystander intervention: Tests of mediating processes. *Journal of Early Adolescence*, 32, 516–536. doi:10.1177/0272431611402502.
- Jackson, A., Dowling, N., Thomas, S., Bond, L., & Patton, G. (2008). Adolescent gambling behaviour and attitudes: A prevalence study and correlates in an Australian population. *International Journal of Mental Health and Addiction*, 6, 325–352. doi:10.1007/s11469-008-9149-1.
- Jacobs, D. F. (2004). Youth gambling in North America: Long-term trends and future prospects. In J. L. Derevensky & R. Gupta (Eds.), *Gambling problems in youth: Theoretical and applied perspectives* (pp. 1–24). New York: Kluwer Academic/Plenum Publishers.
- Kidger, J., Donovan, J. L., Biddle, L., Campbell, R., & Gunnell, D. (2009). Supporting adolescent emotional health in schools: A mixed methods study of student and staff views in England. *BMC Public Health*, 9, 403–421. doi:10.1186/1471-2458-9-403.
- Ladouceur, R., Ferland, F., Côté, M.-A., & Vitaro, F. (2004). Teachers' knowledge and training needs regarding youth gambling. *School Psychology International*, 25, 472–479. doi:10.1177/0143034304048780.
- Magoon, M. E., & Ingersoll, G. M. (2006). Parental modeling, attachment, and supervision as moderators of adolescent gambling. *Journal of Gambling Studies*, 22, 1–22. doi:10.1007/s10899-005-9000-6.
- Moodie, C., & Finnigan, F. (2006). Prevalence and correlates of youth gambling in Scotland. *Addiction Research & Theory*, 14, 365–385. doi:10.1080/16066350500498015.
- Olason, D. T., Sigurdardottir, K. J., & Smari, J. (2006). Prevalence estimates of gambling participation and problem gambling among 16–18-year-old students in Iceland: A comparison of the SOGS-RA and DSM-IV-MR-J. *Journal of Gambling Studies*, 22, 23–39. doi:10.1007/s10899-005-9001-5.
- Roeser, R. W., & Midgley, C. (1997). Teachers' views of issues involving students' mental health. *Elementary School Journal*, 98(2), 115–133.
- Shaffer, H. J., Forman, D. P., Scanlan, K. M., & Smith, F. (2000). Awareness of gambling-related problems, policies and educational programs among high school and college administrators. *Journal of Gambling Studies*, 16, 93–101. doi:10.1023/A:1009435518147.
- Skokauskas, N., & Satkeviciute, R. (2007). Adolescent pathological gambling in Kaunas, Lithuania. *Nordic Journal of Psychiatry*, 61, 86–91. doi:10.1080/08039480701226054.
- Splevins, K., Mireskandari, S., Clayton, K., & Blaszczynski, A. (2010). Prevalence of adolescent problem gambling, related harms and help-seeking behaviours among an Australian population. *Journal of Gambling Studies*, 26, 189–204. doi:10.1007/s10899-009-9169-1.
- Stinchfield, R. (2011). Gambling among Minnesota public school students from 1992 to 2007: Declines in youth gambling. *Psychology of Addictive Behaviors*, 25, 108–117. doi:10.1037/a0021266.
- Turner, N., Macdonald, J., Bartoshuk, M., & Zangeneh, M. (2008). Adolescent gambling behaviour, attitudes, and gambling problems. *International Journal of Mental Health and Addiction*, 6, 223–237. doi:10.1007/s11469-007-9117-1.
- Vachon, J., Vitaro, F., Wanner, B., & Tremblay, R. E. (2004). Adolescent gambling: Relationships with parent gambling and parenting practices. *Psychology of Addictive Behaviors*, 18, 398–401. doi:10.1037/0893-164X.18.4.398.
- Volberg, R. A., Gupta, R., Griffiths, M. D., Ólason, D. T., & Delfabbro, P. (2010). An international perspective on youth gambling prevalence studies. *International Journal of Adolescent Medicine and Health*, 22(1), 3–38.
- Welte, J. W., Barnes, G. M., Tidwell, M. O., & Hoffman, J. H. (2008). The prevalence of problem gambling and young adults: Results from a national survey. *Journal of Gambling Studies*, 24, 119–133. doi:10.1007/s10899-007-9086-0.
- Wickwire, E. M., Whelan, J. P., Meyers, A. W., & Murray, D. M. (2007). Environmental correlates of gambling behaviour in urban adolescents. *Journal of Abnormal Child Psychology*, 35, 179–190. doi:10.1007/s10802-006-9065-4.