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review

Parent problem gambling: A systematic review of prevention programs for children

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Abstract

Parent problem gambling (PG) has pervasive adverse effects on children. These children experience considerable losses such as loss of trust, loss of safety and stability, as well as financial and emotional losses. They are at greater risk for maltreatment and mental health disorders, and they are also at risk for intergenerational transmission of PG. These children are two to four times more likely to develop PG than children of non-PG parents. To date, there has been a dearth of research examining the impact of parent PG on children, and even less research focusing on reducing risks in children of PG parents. The goal of this systematic review was to identify PG prevention programs for children and examine the types of prevention used and whether these programs target specific subgroups. Our search retained 16 studies examining PG prevention programs for children. Results indicated that all of the PG prevention programs in the selected studies are universal and do not target children of PG parents or any other specific subgroups. A large gap is the absence of secondary and tertiary PG prevention programs for children. Another gap is the lack of family focused prevention strategies which the substance use literature has shown to be the most effective form of prevention. Further research is needed on parent PG and ways of reducing risks and increasing protective factors in children and families. A public health framework must be adopted to delay onset, reduce risks and minimize consequences in children of PG parents.

Keywords: parent, children, youth, problem gambling, intergenerational transmission, prevention programs

Résumé

Les problèmes de jeu (PJ) d'un parent ont des effets négatifs profonds sur ses enfants. Les enfants dont un parent a un PJ vivent d'importantes pertes, notamment de

confiance et du sentiment de sécurité et de stabilité, en plus d'éprouver une détresse émotionnelle et financière. Ils présentent également un risque plus élevé de maltraitance, de maladie mentale et de transmission intergénérationnelles des PJ. Ces enfants sont en effet de deux à quatre fois plus susceptibles de connaître un PJ que les enfants dont les parents n'ont pas de PJ. À ce jour, très peu d'études ont examiné les répercussions des PJ d'un parent sur ses enfants, et encore moins ont porté sur les moyens de diminuer les risques chez les enfants dont un parent a un PJ. L'objectif de cette revue systématique était de cerner les programmes de prévention des PJ qui visent les jeunes et d'examiner les méthodes de prévention utilisées, afin de déterminer si des sous-groupes particuliers sont ciblés par les programmes. Nous avons retenu pour notre recherche 16 études portant sur des programmes de prévention des PJ chez les jeunes. Les résultats indiquent que tous les programmes de prévention des PJ analysés dans ces études sont universels et ne ciblent pas les enfants dont un parent a un PJ ou tout autre sous-groupe particulier. L'absence de programmes secondaires et tertiaires de prévention des PJ chez les enfants constitue une importante lacune, de même que le manque de stratégies de prévention axées sur la famille. Les études sur la consommation de drogue et d'alcool ont démontré que les stratégies de ce type représentent la forme de prévention la plus efficace. De plus amples recherches sont nécessaires sur les parents ayant un PJ et les moyens de réduire les risques et d'accroître les facteurs de protection pour les enfants et les familles. Un plan d'ensemble en santé publique doit être adopté afin de retarder le commencement des comportements associés au jeu, de réduire les risques et d'atténuer le plus possible les conséquences sur les enfants dont un parent a un PJ.

Introduction

Problem gambling is a public health issue with adverse consequences for individuals and families. The rate of problem gambling in adults is 2.3% internationally, 2.4% in Canada, and 3.2% in the United States (Williams, Volberg, & Stevens, 2012). The rates of youth problem gambling are considerably higher—4 to 8% of youth have a severe gambling problem and 10 to 15% of youth are deemed to be at-risk of problem gambling (Messerlian, Derevensky & Gupta, 2005). Among adults with a gambling problem, the highest rates are in young adults aged 18 to 25 (Wiebe, Mun, & Kauffman, 2006). Problem gambling is associated with many co-occurring difficulties. Petry, Stinson, and Grant (2005) conducted a lifetime prevalence and comorbidity survey of disordered gambling with other psychiatric disorders (N=43,093). The study found that lifetime pathological gambling was highly comorbid with other addictions such as alcohol use disorder (73.2%), drug use disorder (38.1%), and nicotine dependence (60.4%). High rates of mental health concerns, such as mood disorders (49.6%), anxiety (41.3%) and personality disorders (60.8%), were among individuals with lifetime disordered gambling. Research has also reported high rates of trauma (Felsher, Derevensky & Gupta, 2010; Hodgins et al., 2010) and suicidality

(Ledgerwood, Steinberg, Wu, & Potenza, 2005; Marshall & Wynne, 2003) among problem gambling individuals. Furthermore, problem gambling is associated with elevated rates of financial problems, bankruptcy, unemployment (Marshall & Wynne, 2003), and legal issues (Toce-Gerstein, Gerstein, & Volberg, 2003).

Research has shown that problem gambling not only affects the individual, but also has adverse effects on families (Darbyshire, Oster, & Carrig, 2001; Dowling, Jackson, Thomas, & Frydenberg, 2010; Kourgiantakis, Saint-Jacques, & Tremblay, 2013). For each individual with a gambling problem between 8 and 10 others are directly affected by this problem (Lobsinger and Beckett, 1996). Problem gambling families have higher rates of child maltreatment, family violence, and separation and divorce (Kourgiantakis et al., 2013). According to Dowling et al. (2010) problem gambling adversely affects the physical and emotional health of partners/spouses and children. Darbyshire et al. (2001) found that children coping with parental problem gambling experience "pervasive loss." These children experience loss of the parent due to reduced emotional and physical availability, financial and material losses, as well as loss of safety, stability and trust (Darbyshire et al., 2001; Kourgiantakis et al., 2013). A Canadian longitudinal study (N=142) found that children of problem gambling parents are more likely to experience depression and conduct problems than children who do not have a problem gambling parent. The study also reported that ineffective parenting plays an important role in the child's overall adjustment (Vitaro, Wanner, Brendgen, & Tremblay, 2008).

In addition to these consequences, children who have a problem gambling parent are also at risk for intergenerational transmission of problem gambling. These children are two to four times more likely to develop a gambling problem than are children of non-problem gambling parents (Dowling et al., 2010; Stark et al., 2014). Research has shown that genetic factors influence the etiology of a gambling problem (Eisen et al., 2001), although environmental factors such as social modeling also influence the risk of intergenerational transmission of problem gambling (Dowling et al., 2010; Stark et al., 2014). Parental gambling significantly affectschildren's attitudes towards gambling, as well as gambling behaviours (Derevensky, 2012; Dowling et al., 2010) since most youth begin gambling with parents or other family members. Furthermore, children with a problem gambling parent tend to start gambling at a much younger age (Derevensky, 2012; Dowling et al., 2010). Derevensky (2012) reports that 65% of youth gamble with family members and start gambling for money as early as age nine. Other risk factors that augment the risk of intergenerational transmission of problem gambling include poor coping strategies in the child and parent(s), mental health concerns, substance use, family conflict, and ineffective parenting (Stark et al., 2014). Children may be coping with mental health and addiction concerns not only in the problem gambling parent, but also the non-problem gambling parent. According to Dowling et al. (2010) parental problem gambling is linked with psychopathology in the non-problem gambling parent, and this influences the transmission of problem gambling in children.

Considering the magnitude of risk for children raised in problem gambling families, a public health approach that employs "denormalization, promotion, protection, and harm reduction principles" is needed (Messerlian et al., 2005, p. 75). This public health framework uses all three forms of prevention—primary or universal, secondary or indicated, and tertiary or selective (Dickson-Gillespie, Rugle, Rosenthal, & Fong, 2008). Each form of prevention includes its own goals. Primary prevention programs target the general public or whole population groups, such as children and youth, regardless of identified risk or need (Dickson-Gillespie et al., 2008). Youth who do not gamble are classified under this level of risk, and this classification includes approximately 80% of youth (Messerlian et al., 2005). Primary prevention programs attempt to prevent the onset of gambling behaviour from becoming at-risk gambling. The goal of this stage is to increase awareness of the risks and consequences associated with problem gambling (Messerlian et al., 2005). These prevention programs do not specifically target children or youth deemed to be at-risk, such as children of problem gambling parents, and can be community-based programs or school-based prevention programs.

Secondary prevention targets youth at risk of developing problem gambling behaviour which includes children of problem gambling parents (Dowling et al., 2010). According to Messerlian et al. (2005), 10 to 15% of youth are at risk of developing severe problem gambling behaviour. Secondary prevention programs aim to identify, assess, and provide appropriate rapid interventions for children at risk in order to prevent more severe problem gambling from developing (Dowling et al., 2010; Messerlian et al., 2005). Other goals of secondary prevention strategies are to develop improved coping skills, better problem solving abilities, and healthier activities (Messerlian et al., 2005). Secondary prevention programs also reduce social normalization of gambling or positive gambling expectancies, and can also address other co-occurring disorders (Dowling et al., 2010). Secondary prevention programs can be offered in schools or through community or social service settings (Dowling et al., 2010).

Tertiary prevention programs target those children and adolescents presenting signs and symptoms of problem gambling behaviour (Messerlian et al., 2005), as well as parents with gambling problems. Effective treatment for problem gambling parents is estimated to have an effect on children's overall adjustment (Dowling et al., 2010). However, empirical problem gambling research to support this claim does not yet exist. A systematic review by Kourgiantakis et al. (2013) found that no studies examining the effects of parent problem gambling treatment and recovery on children have taken place. However, we know from the robust literature on substance use that effective family-focused interventions for the treatment of parental substance use can have positive, secondary or indirect effects on children's psychosocial adjustment (Kelley & Fals-Stewart, 2002). Certain tertiary prevention programs include interventions for children raised in problem gambling families, and family-oriented interventions for problem gambling, as well as treatment programs and services for problem gambling adolescents (Dowling et al., 2010).

In 2001, Darbyshire et al. stated that "there seems to have been very little research interest in the lives and experiences of children living in families where a parent has a pathological gambling problem" (p. 26). It has been 15 years since that statement was made, and it is important to examine whether there has been greater research on the risks of parent problem gambling on children, as well as studies on prevention programs to reduce these risks. Ladouceur, Goulet, & Vitaro (2013) conducted a systematic review that examined the effectiveness of child and youth problem gambling prevention programs. This study did not identify any programs that targeted children of problem gambling parents although this was not the aim of the review. However, the authors did note that the gap in practice and research is a large one. Our study will build on the research conducted by Ladouceur et al. (2013), and examine these three questions: (1) Do any of the problem gambling prevention programs for children and youth target a specific subgroup? (2) Which types of prevention are used in problem gambling prevention programs for children and youth? (3) What are the gaps in the forms of prevention problem gambling programs for children and youth?

Method

Inclusion criteria

This systematic review includes studies examining any form of prevention of problem gambling in children or youth using quantitative, qualitative or mixed methods designs written in English or French. All studies included in this review were empirical studies written or published between 2000 and 2014, and included published and unpublished reports.

Search Strategy

This systematic review followed guidelines outlined in a seven-step model for social research developed by Cooper (2010). A systematic literature search was conducted through five relevant databases: PsycINFO, Medline via Ovid, Social Services Abstracts, and Sociological Abstracts. We searched for studies in all of the databases between 2000 and 2014 under title and abstracts, using the following keyword search terms: gambl* AND (prevent* OR intervention* OR child*). This search strategy followed recommendations made by Cooper (2010) to use broad conceptual definitions to protect validity. This search strategy resulted in high-sensitivity results. However, since there is a dearth of research on this topic, it was important to scan all of the literature potentially relevant to the study. Thus we also searched Google Scholar, as well as the websites of the following centres: Ontario Problem Gambling Research Centre, National Centre for Responsible Gambling, Responsible Gambling Council, and the International Centre for Youth Gambling Problems and High-Risk Behaviour. We also conducted a manual search of the reference lists of all the primary articles retrieved. Moreover, we emailed three gambling researchers who have published research on children and problem gambling. We also communicated

to gambling researchers and clinicians internationally, via the Gambling Issues International Listserv, requesting literature and resource recommendations.

Results

We identified 2,153 article titles through all of the database searches, specifically 1,376 from PsycINFO, 638 from Medline via Ovid, 80 from Sociological Abstracts, 53 from Social Service Abstracts, and 6 from other sources (see Figure 1). A large proportion of these articles we rejected at the first stage because they were duplicates or because the article did not meet inclusion criteria when reading the abstract and title. We retained 98 articles at this point representing a retention rate of 4.5% of the studies identified in the search. The majority of those excluded were: (1) literature reviews, editorials, discussion papers, books and book chapters (n=30), or (2) articles with another research focus (n=39). There were 29 articles retrieved and assessed for eligibility (30% of the studies screened were retained). Of these 29 studies, 13 were excluded. All of the articles that were excluded (except one) did not meet inclusion criteria because they did not examine problem gambling prevention programs for children and adolescents. Certain of the studies concerned adult samples only. Many of the studies that did not meet inclusion criteria examined gambling awareness, attitudes, and behaviour among significant adults, such as parents, teachers, and mental health professionals. Whereas these studies did provide interesting results and could guide future prevention strategies, they nevertheless did not meet inclusion criteria. One article was excluded (Williams et al., 2004) because it provided preliminary results for another study (Williams, Wood, & Currie, 2010), one which was retained. In other words, it was a duplicate that was not detected in the first stage of screening, and this finding was confirmed through contacting the author.

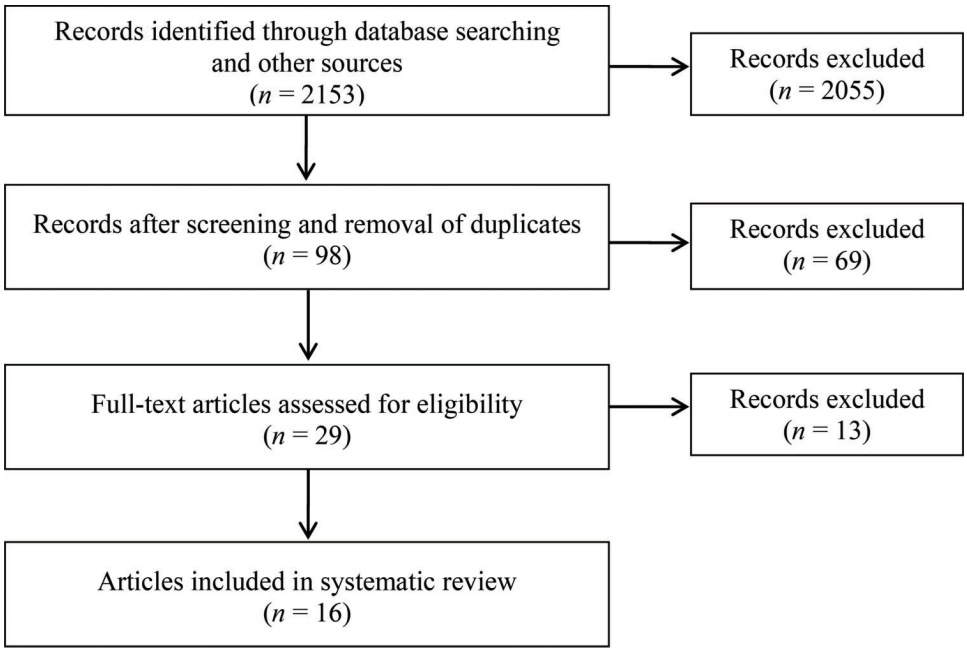

Figure 1. Flowchart of empirical studies between 2000 - 2014 identified, screened and assessed for eligibility

A total of 16 articles were retained for this systematic review. This represents a retention rate of 55% of the studies assessed for eligibility. Table 1 presents the methodological characteristics of each study included in the review. Three of the studies (19%) were research reports and the remaining 13 articles were published in scientific journals. One article presented two problem gambling prevention program studies (Ladouceur et al., 2004a), which accordingly means we are reporting on 17 studies published in 16 articles. As a result, some variance may emerge in the totals we report. All of the studies, with the exception of one by Korn et al. (2006), used quantitative methods (n=16). Fifteen studies used control/comparison groups (88%), and 13 studies randomly assigned participants to groups. One study did not specify how participants were assigned to treatment and control groups (Turner, Macdonald, Bartosuk, & Zangeneh, 2008a). Thirteen studies were conducted in Canada—76% of the selected studies. Three studies were conducted in Europe (Romania and Germany), and one in the United States. In terms of language of the programs that were evaluated, one study was conducted in German (6%), 6 studies French (35%), and 10 English (59%). Most of the studies recruited participants through schools and were school-based prevention programs (n=16). All of these studies (n=16) used samples of students aged 8-19. Only one study recruited youth aged 10-19 through a community organization, and implemented the study in the community (Korn et al., 2006).

All of the studies evaluated or examined primary prevention programs. Eleven studies (65%) evaluated problem gambling prevention programs that were one session in length. The remaining studies (n=6) examined programs that ranged between 3 and 10 sessions. Seven studies (41%) did not have any follow up measurements. Most studies with follow up had a single post-test measurement after one to three months. One study had two follow up measurements at three and six months (Ferland, Ladouceur, & Vitaro, 2005). Only one study had three follow up measurements at 3, 6 and 12 months (Lupu & Lupu, 2013). Table 2 provides an overview of the retained studies.

The prevention programs evaluated by these studies can be grouped in two categories. The first category includes programs that increase knowledge about gambling and modify misconceptions about gambling. The second category of prevention programs does also include the information in the first category, but examines skills in the participants as well. The majority of the studies in this review aimed to increase participants' knowledge about gambling, and change erroneous beliefs about gambling (n=12). Five studies evaluated programs that not only aimed to increase knowledge and change beliefs, but also develop skills. Most of the studies (n=16) found that these programs can increase knowledge and change attitudes towards gambling in children and youth. A study evaluating a one-hour program by Turner et al. (2008a) showed that participants absorbed only a slight increase in knowledge about random events. Another study found that, while participants did report that the website raised awareness about gambling, the study nevertheless could not determine if there were changes in gambling knowledge and beliefs (Korn et al., 2006). Only two studies in this review showed that there were changes in gambling behaviour post-intervention (Walther, Hanewinkel, & Morgenstern, 2013;

Table 1
Methodological Characteristics of Selected Studies (N=16[1])

AUTHORS	YEAR	TITLE	OBJECT OF STUDY	SAMPLE SIZE & TYPE	SAMPLE ORIGIN	DESIGN FOLLOW UP	PROGRAM NAME & FORM OF PREVENTION	RESULTS
Ferland, Ladouceur, & Vitaro	2002	Prevention of problem gambling: Modifying misconceptions and increasing knowledge	Modify erroneous beliefs about gambling in children using a French video-based intervention "Lucky."	*N* = 424 students in grades 7 & 8	Quebec, Canada	Quantitative Control group with random assignment. No follow up.	Lucky (one session French video) Primary prevention	Misconceptions about gambling were modified in students.
Ferland, Ladouceur, & Vitaro	2005	Efficacité d'un programme de prévention des habitudes de jeu chez les jeunes: Résultats de l'étude pilote. [Efficacy of a youth gambling prevention program: Results from a pilot study].	Modify attitudes and knowledge about gambling, improve problem solving skills, decrease gambling involvement.	*N* = 1,113 students, 12 - 14 years old	Quebec, Canada	Quantitative Control group with random assignment. Post-test evaluations and follow up at 3 and 6 months.	Three-session youth gambling prevention workshop Primary prevention	Workshop was effective at modifying attitudes and knowledge about gambling, but not gambling behaviour. No significant changes in problem solving skills.
Korn, Murray, Morrison, Reynolds, & Skinner	2006	Engaging youth about gambling using the internet	Evaluation of a multimedia website developed to prevent gambling problems in youth.	*N* = 34 youth, 10 - 19 years old, recruited through community organizations	Ontario, Canada	Qualitative No comparison group. No follow up.	Youthbet.net (one session) Primary prevention	Website raised awareness in youth about gambling and youth's own gambling behaviour. The website's influence on gambling knowledge, attitudes, and behaviour could not be determined.

Table 1
Continued

AUTHORS	YEAR	TITLE	OBJECT OF STUDY	SAMPLE SIZE & TYPE	SAMPLE ORIGIN	DESIGN FOLLOW UP	PROGRAM NAME & FORM OF PREVENTION	RESULTS
Ladouceur, Ferland, Roy et al.	2004	Prévention du jeu excessif chez les adolescents: Une approche cognitive [Prevention of excessive gambling in youth: A cognitive approach].	Two studies included in one paper. Study 1: Evaluate the effectiveness of a one–session prevention program at reducing erroneous beliefs in students.	Study 1: *N* = 345 students in grades 7 & 9	Quebec, Canada	Study 1: Quantitative Control group with random assignment. No follow up.	Count Me Out (one session) Primary prevention	Study 1 showed that erroneous beliefs were reduced in students and the reduction was greater in those with a higher number of misconceptions at baseline.
			Study 2: Compared the effectiveness of a gambling prevention program when facilitated by a teacher or a gambling professional.	Study 2: *N* = 520 students in grades 7 - 9	Quebec, Canada	Study 2: Quantitative Comparison group, no control group. No follow up.		Study 2 showed that all of the experimental conditions were effective at reducing erroneous beliefs in youth, but there was greater effect size for students at risk who received the gambling prevention programs delivered by gambling experts.
Ladouceur, Ferland, & Vitaro	2004	Prevention of problem gambling: Modifying misconceptions and increasing knowledge among Canadian youths.	Modify erroneous beliefs about gambling in children using an English version of video-based intervention "Lucky."	*N*=506 students in grades 7 & 8 recruited through four schools	Quebec and New Brunswick, Canada	Quantitative Control group with random assignment. No follow up.	Lucky (one session English version video) Primary prevention	The English version seems to be as effective as the French version. Misconceptions about gambling were modified in students through the video.

Table 1
Continued

AUTHORS	YEAR	TITLE	OBJECT OF STUDY	SAMPLE SIZE & TYPE	SAMPLE ORIGIN	DESIGN FOLLOW UP	PROGRAM NAME & FORM OF PREVENTION	RESULTS
Lavoie & Ladouceur	2004	Prevention of gambling among youth: Increasing knowledge and modifying attitudes toward gambling	Evaluate the effectiveness of a video "Lucky" aimed at modifying erroneous beliefs and attitudes about gambling.	*N* = 273 students in grades 5 & 6	Quebec, Canada	Quantitative Control group with random assignment. No follow up.	Lucky (one session French video) Primary prevention	Video increased knowledge about gambling and reduced misconceptions.
Lemaire, de Lima, & Patton	2004	It's your lucky day: Program evaluation.	Evaluate the effectiveness of a pilot gambling prevention program aimed at increasing knowledge, dispelling myths, and increasing ability to identify warning signs of PG.	*N* = 894 students in grades 7 & 8	Manitoba, Canada	Quantitative Control group with random assignment. Follow up at one month.	It's Your Lucky Day (one session) Primary prevention	Grade 7 students showed greater knowledge about PG and myths at post-test than grade 8 students. Both grade levels were unable to recognize gambling warning signs at post-test, and they did not show increased awareness of PG services.
Lupu & Lupu	2013	Gambling prevention program for teenagers	Compare the effects of two programs (Amazing Chateau and REE) on erroneous cognitions about gambling among adolescents.	*N* = 75 students, ages 12 - 13, recruited through school	Romania	Quantitative Control group with random assignment. Follow up at 3, 6, and 12 months.	Amazing Chateau and Rational Emotive Education (10 sessions) Primary prevention	Primary prevention programs using REE plus computer assisted education about gambling was more effective at changing erroneous beliefs about gambling, than REE alone.

Table 1
Continued

AUTHORS	YEAR	TITLE	OBJECT OF STUDY	SAMPLE SIZE & TYPE	SAMPLE ORIGIN	DESIGN FOLLOW UP	PROGRAM NAME & FORM OF PREVENTION	RESULTS
Taylor & Hillyard	2009	Gambling awareness for youth: An analysis of the "Don't gamble away our future" program	Raise awareness about gambling and change faulty beliefs about gambling.	*N* = 8,455 students, aged 8-18, from primary, secondary, postsecondary schools, and juvenile detention centre	Illinois, United States	Quantitative No control group. No follow up.	Don't Gamble Away Our Future (one session) Primary prevention	Students had greater knowledge after the program than before, and younger children improved scores more than older children
Todirita & Lupu	2013	Gambling prevention program among children	Compare the effects of two programs (Amazing Chateau and REE) on erroneous cognitions about gambling among adolescents.	*N* = 81 students, aged 12 - 13	Romania	Quantitative Control group with random assignment. Follow up weekly for 10 weeks.	Amazing Chateau and Rational Emotive Education (10 sessions) Primary prevention	Primary prevention programs with REE were more effective at changing erroneous beliefs about gambling.
Turner, Macdonald, Bartosuk, & Zangeneh	2008a	The evaluation of a 1-h prevention program for problem gambling	Evaluate a program aimed at improving students' knowledge of random chance, and improve coping strategies and attitudes about gambling.	*N* = 374 students, grades 5-12	Ontario, Canada	Quantitative Control group Follow up for post-test at 2 months.	1-hour prevention program (one session) Primary prevention	There were no changes in coping skills, attitudes, and gambling behaviour, and a slight improvement in students' understanding of random chance.

Table 1
Continued

AUTHORS	YEAR	TITLE	OBJECT OF STUDY	SAMPLE SIZE & TYPE	SAMPLE ORIGIN	DESIGN FOLLOW UP	PROGRAM NAME & FORM OF PREVENTION	RESULTS
Turner, Macdonald, & Somerset	2008b	Life skills, mathematical reasoning and critical thinking: A curriculum for the prevention of problem gambling.	Evaluate a program aimed at increasing understanding of random events, increasing knowledge of coping skills and self-monitoring.	*N* = 201 students in grades 10-12	Ontario, Canada	Quantitative Control group with random assignment. Follow up weekly for 7 weeks.	Curriculum supplement for health and math on PG prevention (6 lessons and 1 summary) Primary prevention	There was improvement in student knowledge of random events, self-monitoring, and coping skills.
Vitaro et al.	2005	Évaluation des ateliers de sensibilisation sur les risques associés aux jeux de hasard et d'argent: Première partie [Evaluation of a gambling awareness workshop: Part one].	Evaluate a workshop aimed at increasing knowledge, changing attitudes and behaviours regarding gambling. The study also examined differences in workshops led by PG trained teachers versus teachers who had not been trained.	*N* = 2,848 students in grades 10 & 11	Quebec, Canada	Quantitative Control group with random assignment. Follow up (post-test) at 2-3 months.	Youth Gambling: An awareness and prevention workshop-Level II (one session) Primary prevention	Both experimental groups showed improvement in knowledge and attitudes about PG. The group who received the workshop given by trained teachers showed greater improvement. There were no changes in gambling behaviours.

Table 1
Continued

AUTHORS	YEAR	TITLE	OBJECT OF STUDY	SAMPLE SIZE & TYPE	SAMPLE ORIGIN	DESIGN FOLLOW UP	PROGRAM NAME & FORM OF PREVENTION	RESULTS
Walther, Hanewinkel, & Morgenstern	2013	Short-term effects of a school-based program on gambling prevention in adolescents.	Test the short-term effects of an intervention for students in grades six and seven regarding gambling knowledge, problematic attitudes and beliefs, and gambling behaviour.	*N* = 2,109 students in grades 6 & 7	Germany	Quantitative Control group with random assignment. Follow up at 20 weeks for control group (mean interval from baseline to post-test). Follow up at 31 weeks for treatment group (mean interval from baseline to post-test).	Vernetzte www.welten (one session) Primary prevention	There was improvement in student knowledge and attitudes, and beliefs. There was also a slight decrease in gambling behaviour.
Williams	2002	Final report: Prevention of problem gambling: A school-based intervention.	Evaluate whether a prevention program is successful improving knowledge, cognitive errors, attitudes, coping skills and behaviour regarding PG in students.	*N* = 282 students, aged 14 - 19	Alberta, Canada	Quantitative Control group with random assignment. Post-treatment one week following intervention and follow up at 3 months.	Five-session PG prevention workshop (adaptation of 3-session Quebec program)	There were important changes at 3-month follow up with gambling knowledge, attitudes, and cognitive errors. There were no changes in gambling behaviour.

Table 1
Continued

AUTHORS	YEAR	TITLE	OBJECT OF STUDY	SAMPLE SIZE & TYPE	SAMPLE ORIGIN	DESIGN FOLLOW UP	PROGRAM NAME & FORM OF PREVENTION	RESULTS
Williams, Wood, & Currie	2010	Stacked Deck: An effective, school-based program for the prevention of problem gambling.	Evaluate a gambling prevention program and its effectiveness at changing gambling attitudes, knowledge, fallacies, decision making and problem solving skills, and gambling behaviour.	*N* = 1,253 students, grades 9-12	Alberta, Canada	Quantitative Control group with random assignment. Follow up at 4 months.	Gambling: A Stacked Deck(5 sessions) Primary prevention	Program showed changes in gambling knowledge, attitudes, and fallacies. There were also improved decision and problem solving skills, and decreased gambling frequency. Program emphasized the importance of skill development.

[1]There were 16 articles retained, but one article reported on 2 studies.

Table 2
Overview of selected studies (N=17)[2]

Samples	Children and youth (Age range = 8 - 19 years)
Country	Canada (75%)
	Europe (18%)
	USA (6%)
Method	Quantitative (94%)
	Qualitative (6%)
Control group	Control group (88%)
	No control group (12%)
Random assignment	Yes (76%)
	No (18%)
	Did not specify (6%)
Recruitment and implementation setting	School (94%)
	Community organization (6%)
Follow up measurement	No (41%)
	Yes (59%)
Form of prevention	Primary (100%)
Preventive programs[3]	Amazing Chateau (*n* = 2)
	Count Me Out (*n* = 2)
	One-hour prevention program (*n* = 1)
	Curriculum adjunct (*n* = 1)
	Don't Gamble Away Our Future (*n* = 1)
	Five-session prevention (*n* = 1)
	It's Your Lucky Day (*n* = 1)
	Lucky (*n* = 3)
	Youth Gambling (*n* = 1)
	Rational Emotive Education (*n* = 2)
	Stacked Deck (*n* = 1)
	Three-session workshop (*n* = 1)
	Vernetzte (*n* = 1)
	Youthbet.net (*n* = 1)

Williams et al., 2010). Five studies evaluated the effects of the program on skills such as decision making, problem solving, coping, and self-monitoring (Ferland et al., 2005; Turner et al., 2008a; Turner, Macdonald, & Somerset, 2008b; Williams, 2002; Williams et al., 2010). Three out of the five studies showed changes in coping skills, self-monitoring, problem solving and/or decision making (Turner et al., 2008b; Williams, 2002; Williams et al., 2010).

Discussion

This systematic review aimed to identify studies on problem gambling prevention programs for children and youth, and examine whether any of these studies target

[2]We are reporting on 17 studies in 16 publications since one article contained two studies.
[3]The number of programs exceed 17 since Todirita & Lupu (2012) and Lupu & Lupu (2013) compared two programs (Amazing Chateau & REE) in both studies.

specific subgroups. Another goal of the review was to describe the types of prevention used in these programs. The final objective was to identify gaps in the types of problem gambling prevention programs for children and youth. It is important to note that this review did not appraise the effectiveness of the prevention programs evaluated by the studies that were retained and assessed. A study on the effectiveness of problem gambling prevention programs for children was conducted by Ladouceur et al. (2013). The present study built on the work by Ladouceur et al. (2013) with a specific focus on the types of prevention and the subgroups of children being targeted.

Our review identified 16 empirical studies that have evaluated problem gambling prevention programs for children and youth since 2000. None of the programs evaluated in these studies targeted specific subgroups. With the exception of one study by Korn et al. (2006), all of the studies were school-based prevention programs targeting entire school populations. Each of the studies retained in this review focused on primary or universal prevention programs. Several gaps were noted in the problem gambling prevention programs examined in this review. There are no secondary or tertiary forms of prevention in any of these studies. None of these prevention programs target children who have a problem gambling parent even though the risks are much higher for these children (Dowling et al., 2010).

Since the research on children and parent problem gambling is very limited, it is thus important to examine the more robust research on prevention programs for children of substance-abusing parents. An examination of the research in the field of prevention programs for children of substance abusing parents highlights other gaps in problem gambling prevention programs for children. Reviews of prevention programs for children of substance using parents emphasise the importance of family-based programs (Bröning et al., 2012; Kumpfer, Alvarodo, & Whiteside, 2003; Usher, McShane, & Dwyer, 2015; Velleman, Templeton, & Copello, 2005). According to Kumpfer et al. (2003) family-based intervention programs have effect sizes that are two-to-nine times greater than child focused approaches. Substance use prevention research shows that effective family strengthening programs should be included in all prevention programs for children (Kumpfer et al., 2003; Velleman et al., 2005). Family strengthening programs reduce risks while they also reinforce the family unit. This increases protective factors and builds resilience (Velleman et al., 2005). Velleman, Mistral, and Sanderling (2000) found that a key task of substance use prevention programs for children is to improve skills in parents. These skills include those that facilitate family cohesion, communication and problem solving, as well as the monitoring and supervision of children. Effective programs also help parents develop "substance related skills." Parents increase their knowledge on substance use and learn about modelling behaviours and attitudes. In these programs parents also learn to talk to their children about substance use and misuse.

Problem gambling researchers have also argued that parents should be part of problem gambling prevention strategies (Dowling et al., 2010). A study by Dowling et al. (2010) identified gambling attitudes, motives and expectancies as important risk

factors in the familial transmission of problem gambling. The importance of parent awareness of problem gambling risks and consequences was also demonstrated by another study that found that 61% of parents do not perceive gambling as a concern among adolescents, and 57% of parents gamble with their children. The study also found that there are gender differences with fathers perceiving gambling as less serious than mothers, particularly among teenage boys versus teenage girls (Shead, Derevensky, & Meerkamper, 2011).

Since most problem gambling prevention programs are delivered through schools, it is imperative that teachers and school mental health professionals also receive information on problem gambling risk factors and negative consequences, as well as adequate training on delivering effective prevention programs for children. Two recent studies surveying mental health professionals and teachers found that problem gambling was ranked as the least important adolescent issue among a list of many other issues. Teachers and mental health professionals reported feeling ill-equipped to deal with problem gambling (Derevensky, St. Pierre, Temcheff, & Gupta, 2014; Temcheff, Derevensky, St. Pierre, Gupta, & Martin, 2014). The researchers urged school boards to develop student gambling policies similar to those established for drugs, alcohol, smoking, bullying, and violence (Temcheff et al., 2014).

Conclusion

It is clear from this review that there has been only meagre change since Darbyshire et al. (2001) affirmed that there was little research interest on the impact of parent problem gambling on children. A public health model needs to be used to guide future research, clinical practice, and policies on gambling and children. A public health framework comprises primary, secondary, and tertiary prevention strategies. The research on prevention programs for children of substance abusing parents indicates that the most effective programs are family focused. Our study shows that no problem gambling prevention programs using a family focused approach are in operation, and a lack exists of secondary and tertiary problem gambling prevention strategies for children and families.

More research is needed to understand how children are affected by parent problem gambling, and what types of prevention programs are most effective for these children. It is also important to perform more longitudinal research on the adjustment of children growing up in problem gambling families. Schools, community centres, and mental health and addiction facilities need to be better equipped to screen, assess, and treat children who have a problem gambling parent, as well as children who may be at-risk. These children need to be part of the services given to problem gambling parents. Further education and training is required for parents, clinicians, and school personnel. Universal, selective, and indicated programs are needed, must be developed for the developmental level of the audience, and should be designed with cultural sensitivity. Finally, there needs to be a shift from the individual focus in mental health and addiction research and treatment to a more family-centred paradigm.

References

Bröning, S., Kumpfer, K., Kruse, K., Sack, P. M., Schaunig-Busch, I., Ruths, S., … & Thomasius, R. (2012). Selective prevention programs for children from substance-affected families: A comprehensive systematic review. *Substance Abuse Treatment, Prevention and Policy*, *7*, 1–17. doi:10.1186/1747-597X-7-23

Cooper, H. (2010). *Research synthesis and meta-analysis*. Thousand Oaks, CA: Sage Publications.

Darbyshire, P., Oster, C., & Carrig, H. (2001). The experience of pervasive loss: Children and young people living in a family where parental gambling is a problem. *Journal of Gambling Studies*, *17*, 23–45. doi:10.1023/A:1014536315167

Derevensky, J. L. (2012). *Teen gambling: Understanding a growing epidemic*. New York: Rowman & Littlefield.

Derevensky, J. L., St. Pierre, R. A., Temcheff, C. E., & Gupta, R. (2014). Teacher awareness and attitudes regarding adolescent risky behaviour: Is adolescent gambling perceived to be a problem? *Journal of Gambling Studies*, *30*, 435–451. doi:10.1007/s10899-013-9363-z

Dickson-Gillespie, L., Rugle, L., Rosenthal, R., & Fong, T. (2008). Preventing the incidence and harm of gambling problems. *Journal of Primary Prevention*, *29*, 37–55. doi:10.1007/s10935-008-0126-z

Dowling, N. A., Jackson, A. C., Thomas, S. A., & Frydenberg, E. (2010). *Children at risk of developing problem gambling*. Melbourne, Australia: Gambling Research Australia.

Eisen, S. A., Slutske, W. S., Lyons, M. J., Lassman, J., Xian, H., Toomey, R., … & Tsuang, M. T. (2001). The genetics of pathological gambling. *Seminars in Clinical Neuropsychiatry*, *6*, 195–204. doi:10.1053/scnp.2001.22931

Felsher, J. R., Derevensky, J. L., & Gupta, R. (2010). Young adults with gambling problems: The impact of childhood maltreatment. *International Journal of Mental Health & Addiction*, *8*, 545–556. doi:10.1007/s11469-009-9230-4

Ferland, F., Ladouceur, R., & Vitaro, F. (2002). Prevention of problem gambling: Modifying misconceptions and increasing knowledge. *Journal of Gambling Studies*, *18*, 19–29. doi:10.1023/A:1014528128578

Ferland, F., Ladouceur, R., & Vitaro, F. (2005). Efficacité d'un programme de prévention des habitudes de jeu chez les jeunes: Résultats de l'étude pilote [Efficacy of a youth gambling prevention program: Results from a pilot study]. *Encéphale*, *31*, 427–436. doi:ENC-9-2005-31-4-0013-7006-101019-200520038

Hodgins, D. C., Schopflocher, D. P., el-Guebaly, N., Casey, D. M., Smith, G. J., Williams, R. J., & Wood, R. T. (2010). The association between childhood maltreatment and gambling problems in a community sample of adult men and women. *Psychology of Addictive Behaviour*, *24*, 548–554. doi:10.1037/a0019946

Kelley, M. L., & Fals-Stewart, W. (2002). Couples-versus individual-based therapy for alcoholism and drug abuse: Effects on children's psychosocial functioning. *Journal of Consulting & Clinical Psychology*, *70*, 417–427.

Korn, D., Murray, M., Morrison, M., Reynolds, J., & Skinner, H. A. (2006). Engaging youth about gambling using the Internet. *Canadian Journal of Public Health*, *97*, 448–453.

Kourgiantakis, T., Saint-Jacques, M.-C., & Tremblay, J. (2013). Problem gambling and families: A systematic review. *Journal of Social Work Practice in the Addictions*, *13*, 353–372. doi:10.1080/1533256X.2013.838130

Kumpfer, K. L., Alvarado, R., & Whiteside, H. O. (2003). Family-based interventions for substance use and misuse prevention. *Substance Use & Misuse*, *38*, 1759–1787. doi:10.1081/JA-120024240

Ladouceur, R., Ferland, F., Roy, C., Pelletier, O., Bussières, E.-L., & Auclair, A. (2004a). Prévention du jeu excessif chez les adolescents: Une approche cognitive [Prevention of excessive gambling in youth: A cognitive approach]. *Journal de Thérapie Comportementale et Cognitive*, *14*, 124–130. doi:10.1016/S1155-1704(04)97459-9

Ladouceur, R., Ferland, F., & Vitaro, F. (2004b). Prevention of problem gambling: Modifying misconceptions and increasing knowledge among Canadian youths. *Journal of Primary Prevention*, *25*, 329–335. doi:10.1023/B:JOPP.0000048024.37066.32

Ladouceur, R. Goulet, A. & Vitaro, F. (2013). Prevention programmes for youth gambling: A review of the empirical evidence. *International Gambling Studies*, 13, 141-159.

Lavoie, M.-P., & Ladouceur, R. (2004). Prevention of gambling among youth: Increasing knowledge and modifying attitudes toward gambling. *Journal of Gambling Issues*, *10*, 1–10. doi:10.4309/jgi.2004.10.7

Ledgerwood, D. M., Steinberg, M. A., Wu, R., & Potenza, M. N. (2005). Self-reported gambling-related suicidality among gambling helpline callers. *Psychology of Addictive Behaviour*, *19*, 175–183. doi:10.1037/0893-164X.19.2.175

Lemaire, J., de Lima, S., & Patton, D. (2004). *It's your lucky day: Program evaluation*. Winnipeg, MB: Addictions Foundation of Manitoba. Retrieved from: http://digitalcollection.gov.mb.ca/awweb/pdfopener?smd=1&did=17368&md=1

Lobsinger, C., & Beckett, L. (1996). *Odds to break even: A practical approach to gambling awareness*. Sydney, Australia: Relationships Australia.

Lupu, I. R., & Lupu, V. (2013). Gambling prevention program for teenagers. *Journal of Cognitive & Behavioural Psychotherapies*, *13*, 575–584.

Marshall, K., & Wynne, H. (2003). Fighting the odds. *Perspectives on Labour and Income*, *4*(12), 5–13.

Messerlian, C., Derevensky, J., & Gupta, R. (2005). Youth gambling problems: A public health perspective. *Health Promotion International*, *20*, 69–79. doi:10.1093/heapro/dah509

Petry, N. M., Stinson, F. S., & Grant, B. F. (2005). Comorbidity of DSM-IV pathological gambling and other psychiatric disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Journal of Clinical Psychiatry*, *66*, 564–574. doi:10.4088/JCP.v66n0504

Shead, W., Derevensky, J., & Meerkamper, E. (2011). Your mother should know: A comparison of maternal and paternal attitudes and behaviors related to gambling among their adolescent children. *International Journal of Mental Health & Addiction*. *9*, 264–275. doi:10.1007/s11469-010-9279-0

Stark, S., Kourgiantakis, T., Lobo, D., & Tepperman, L. (2014). *Children of problem gambling parents: A critical review of risks and prevention strategies*. Guelph, ON: Ontario Problem Gambling Research Centre.

Taylor, L. M., & Hillyard, P. (2009). Gambling awareness for youth: An analysis of the "Don't Gamble Away Our Future" program. *International Journal of Mental Health & Addiction*, *7*, 250–261. doi:10.1007/s11469-008-9184-y

Temcheff, C. E., Derevensky, J. L., St-Pierre, R. A., Gupta, R., & Martin, I. (2014). Beliefs and attitudes of mental health professionals with respect to gambling and other high risk behaviour in schools. *International Journal of Mental Health & Addiction*, *12*, 716–729. doi:10.1007/s11469-014-9499-9

Toce-Gerstein, M., Gerstein, D. R., & Volberg, R. A. (2003). A hierarchy of gambling disorders in the community. *Addiction*, *98*, 1661–1672. doi:10.1111/j.1360-0443.2003.00545.x

Todirita, I. R., & Lupu, V. (2013). Gambling prevention program among children. *Journal of Gambling Studies*, *29*, 161–169. doi:10.1007/s10899-012-9293-1

Turner, N. E., Macdonald, J., Bartosuk, M., & Zangeneh, M. (2008a). The evaluation of a 1-h prevention program for problem gambling. *International Journal for Mental Health & Addiction*, *6*, 238–243. doi:10.1007/s11469-007-9121-5

Turner, N. E., Macdonald, J., & Somerset, M. (2008b). Life skills, mathematical reasoning and critical thinking: A curriculum for the prevention of problem gambling. *Journal of Gambling Studies*, *24*, 367–380. doi:10.1007/s10899-007-9085-1

Usher, A. M., McShane, K. E., & Dwyer, C. (2015). A realist review of family-based interventions for children of substance abusing parents. *Systematic Reviews*, *4*, 1–12. doi:10.1186/s13643-015-0158-4

Velleman, R. D. B., Mistral, W., & Sanderling, L. (2000). *Taking the message home: Involving parents in drugs prevention* (*DPAS* [*Drugs Prevention Advisory Service*] *Paper 5*). London, UK: DPAS.

Velleman, R. D. B., Templeton, L. J., & Copello, A. G. (2005). The role of the family in preventing and intervening with substance use and misuse: A comprehensive review of family interventions, with a focus on young people. *Drug & Alcohol Review*, *24*, 93–109. doi:10.1080/09595230500167478

Vitaro, F., Paré, R., Trudelle, S. & Duchesne, J. (2005). Évaluation des ateliers de sensibilisation sur les risques associés aux jeux de hasard et d'argent. Première partie Rapport présenté à l'Agence de développement de réseaux locaux de Services de santé et de services sociaux de Montréal. Montréal: Direction de santé publique.

Vitaro, F., Wanner, B., Brendgen, M., & Tremblay, R. E. (2008). Offspring of parents with gambling problems: Adjustment problems and explanatory mechanisms. *Journal of Gambling Studies*, *24*, 535–553. doi:10.1007/s10899-008-9096-6

Walther, B., Hanewinkel, R., & Morgenstern, M. (2013). Short-term effects of a school-based program on gambling in adolescents. *Journal of Adolescent Health*, 599–605. doi:10.1016/j.jadohealth.2012.11.009

Wiebe, J., Mun, P., & Kauffman, N. (2006). *Gambling and problem gambling in Ontario 2005*. Toronto, ON: Responsible Gambling Council.

Williams, R. J. (2002). *Final report: Prevention of problem gambling: A school-based intervention*. Edmonton, AB: Alberta Gaming Research Institute. Retrieved from: https://www.uleth.ca/dspace/bitstream/handle/10133/370/Williams_prevention.pdf?sequence=1

Williams, R. J., Volberg, R. A., & Stevens, R. M. G. (2012). *The population prevalence of problem gambling: Methodological influences, standardized rates, jurisdictional differences, and worldwide trends.* Edmonton, AB: Alberta Gaming Research Institute. Retrieved from: https://www.uleth.ca/dspace/bitstream/handle/10133/3068/2012-PREVALENCE-OPGRC%20(2).pdf?sequence=3

Williams, R. J., Wood, R. T., & Currie, S. R. (2010). Stacked deck: An effective, school-based program for the prevention of problem gambling. *Journal of Primary Prevention*, *31*, 109–125. doi:10.1007/s10935-010-0212-x

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