

Bingo playing and problem gambling: A review of our current knowledge

Jean-Claude Moubarac, N. Will Shead, & Jeffrey L. Derevensky

International Centre for Youth Gambling Problems and High-Risk Behaviors, McGill University, Montreal, Quebec, Canada

Email: jean-claude.moubarac@douglas.mcgill.ca

Abstract

Bingo has a long history as a popular gambling game. Previous research on bingo has been almost exclusively limited to qualitative research. Consequently, little is known about the prevalence of bingo playing, the potential risks associated with regular bingo playing, and its possible influence on the development of problem gambling. The present paper provides a review of the literature on bingo in Western countries using published articles focused on bingo and reports of broad-based gambling surveys containing data on bingo participation. Available data show relatively high rates of past-year bingo participation among adolescents. Within the adult population, females and individuals in poor health reported the highest bingo participation rates. Three general groups of bingo players were identified: low-income individuals, seniors, and young adults. It is argued that although bingo is generally viewed by the public as a “soft” form of gambling, it has the potential to lead to significant problems.

Keywords: bingo, gambling problems, literature review

Introduction

Problem gambling continues to gain recognition as an important public health issue (Korn & Shaffer, 1999). However, not all forms of gambling are viewed as carrying the same level of risk. One activity often considered a low-risk form of gambling is bingo, which has received little attention from researchers in the field of gambling studies. In early studies, bingo was described as a relatively innocuous leisure activity, mostly popular among working class women in search of entertainment, socialization, and friendship (Dixey, 1987, 1996; King, 1990). Today, bingo is often viewed as a social game without labels of deviance and, in fact, enjoys an air of benevolence due to its common association with fundraising efforts (Chapple & Nofziger, 2000; Derevensky, Gupta, Messerlian & Gillepsie, 2004). However, in recent ethnographical accounts scholars have revealed the other side of bingo, describing signs and symptoms among regular bingo players that may be associated with excessive gambling and the development of problem gambling (Chapple & Nofziger, 2000; O'Brien Cousins & Witcher, 2004, 2007; Maclure, Smith, Wood, Leblanc, Li, & Cuffaro, 2006).

Despite some progress in examining the negative impact on players, the double-sided nature of bingo as both a form of entertainment and as a source of potential harm is not

well understood. In the absence of a theoretical framework, previous research on bingo has been almost exclusively limited to sociological perspectives using qualitative methods to explore and understand the experience of regular bingo players. Studied samples have been limited, often including regular female bingo players with problem gambling seldom being evaluated. As a result, very little is known about the prevalence of bingo playing, the potential risks associated with regular bingo playing, and its possible influence on the development of problem gambling.

In Western countries the bingo industry has transformed and expanded since the 1980s to attract a larger and more diverse player pool (Dixey, 1996). Considerable efforts have been made to modernize the game, including the development of electronic bingo, the expansion of bingo contests and high-stakes cash prizes, the establishment of land-based bingo room networks, the development of hundreds of online bingo websites, the appearance of bingo games on television, and the creation of bingo clubs. These marketing strategies have broadened the bingo clientele to now include a younger group of participants. From 1982 to 1999, the percentage of United Kingdom (UK) bingo players under 35 years of age doubled from 18 to 36% (Dixey 1996; Lamacraft, 1999). Across Canada, between 8.6% and 19.8% of high school students reported trying bingo at least once in the previous year (Phare, Lane, & Elliott-Erickson, 2007; Dubé, Tremblay, Traore, & Martin, 2007). This increase in the number of young bingo players warrants concern considering that adolescents and young adults are at increased risk for developing gambling and gambling-related problems compared to adults (Derevensky et al., 2004). With the rapid expansion of the bingo industry underway, it is imperative that we gain a better understanding of the game to evaluate the potential risks posed to bingo players and the unique risk factors involved.

The present paper aims to provide a comprehensive review of the literature on bingo and problem gambling. Published articles with a focus on bingo were selected using the MEDLINE and PsycInfo databases, as well as materials retrieved through bibliography-directed searches. Inclusion criteria for bingo-focused research articles were: (1) studies conducted in Western World countries (i.e., countries of Western Europe, North America, Australia, or New Zealand), and (2) studies in which bingo was the primary focus. Key words in the search included gambling, problem gambling, and bingo. In our search, we found 17 studies that fit the above two criteria. Six studies were conducted in the UK (Dixey & Talbot, 1982; Dixey, 1987, 1996; Downes, Davies, David, & Stone, 1976; Griffiths & Bingham, 2002, 2005), one in New Zealand (Clarke & Rossen, 2000), six in the United States (Burger, 1991; Chapple & Nofziger, 2000, King, 1985a, 1985b, 1987, 1990; Reitz, 2004) and three in Canada (Maclure et al., 2006; O'Brien Cousins & Witcher, 2004, 2007). Because previous research with a focus on bingo has been almost exclusively limited to qualitative studies, other sources of data need to be tapped to examine quantitative data on bingo prevalence, player characteristics, and relationships between bingo play and problem gambling. For this purpose, we collected reports of large-scale gambling surveys that queried bingo participation among other types of gambling. Reports of gambling surveys were identified through web-based searches using *Google*. Reports published between 2001 and 2007 conducted in Canada, the US, the UK, Australia, and New Zealand were selected.

In the following section, qualitative data from bingo-focused studies are reviewed. First, the game of bingo is described along with some of its unique features. Next, descriptions of typical bingo player behaviours are provided. The second section presents a summary of quantitative data on bingo, including prevalence and frequency of play and player characteristics. Quantitative data is also examined to explore the association between bingo play and problem gambling. Finally, the existing body of research is discussed as a whole along with suggestions for future research.

Qualitative Data

The Game of Bingo

Bingo's origins come from a Genoese lottery game played throughout Europe in the 16th century. Although the term *bingo* has been used as the name of several different games, the current version of the game was first played in Jacksonville, Florida and then brought to New York City in 1929, before spreading across the US during the Great Depression (Schwartz, 2006). Spurred by Carl Leffler, a mathematics professor at Columbia University who developed 6,000 non-repeating cards, the game was quickly adopted by churches and charitable organizations as a fundraising activity. Of particular significance and importance is that "bingo laid a solid foundation for the public acceptance of gambling as a tolerable fund-raising tool" (Schwartz, 2006, p. 380).

Bingo is a game solely based on luck in which numbered balls are drawn at random while players mark off the corresponding numbers on their purchased cards that feature randomly chosen numbers arranged in columns and rows (usually five-by-five matrices). As the game is played in real time players follow the sequence of numbers revealed one at a time which adds suspense as the outcome of each game looms. A game concludes when the first player achieves a unique combination of numbers that completes a pre-specified pattern (e.g., five-in-a-row). At that point the winner typically calls out "Bingo!" to signify that they possess a winning card. In contrast to other games where the outcome is quicker, such as lottery scratch tickets and video lottery terminals (VLTs), bingo can be characterized as an ongoing game whose outcome is revealed relatively slowly, with players reporting a moderate to a high level of excitement (Chapple & Nofziger, 2000). In traditional bingo, players are minimally involved; their only task is to mark the numbers called on the bingo card. However, in contrast to lottery draws, bingo players must be physically present as the game unfolds. Superstitious beliefs and practices, which are believed to influence the outcome of the game, are highly prevalent in the bingo culture. Players might "reserve" special seats, use *troll dolls* as good luck charms, and wear "lucky" outfits (Griffiths & Bingham, 2005). Bingo is commonly played in bingo halls, local churches, community centres, and casinos. In contrast to bingo halls, casino bingo has fewer socialization opportunities, larger cash prizes, and tends to be more competitive (Chapple & Nofziger, 2000).

With the recent introduction of electronic bingo, numbers are automatically marked on the card, leaving bingo players to merely follow the game as it unfolds. In this modern form of bingo, the machine informs the players how many numbers are missing before they can win, ultimately adding an aspect of perceived suspense and excitement to the

experience. Bingo is now readily offered in the form of a network where players from multiple jurisdictions compete simultaneously against each other for a cumulative jackpot sometimes in excess of \$100,000. More than a hundred internet websites now offer bingo online for both entertainment and money. Some of these websites make use of structural properties (design, colors, and content) to specifically target adolescents (Derevensky & Gupta, 2007).

Bingo Players' Behaviour

Bingo players tend to view bingo as a game of chance or luck (King, 1990; Griffiths & Bingham, 2005); yet, the use of superstitious beliefs and practices among bingo players has been reported in numerous studies and clinical observations (Chapple & Nofziger, 2000; Dixey 1987; King, 1990; Griffiths & Bingham, 2005). Dixey (1987) observed that many bingo players have ritual routines such as purchasing cards for the game in a particular order, selecting the same seat, wearing "lucky" clothes, and using specific pens and daubers. Chapple and Nofziger (2000) observed the use of coins, rocks, figurines, stuffed animals, and framed pictures during play that are shifted around on the bingo cards as numbers are called. King (1990) argued that "assigning luck to an object or practice is an ongoing process" (p.57) and "some players contend that what they do inside and outside the bingo parlour greatly affects how much they win" (p. 53). On the other hand, Griffiths and Bingham (2005) observed that more quotidian superstitious beliefs (e.g., a belief that the number 13 is always unlucky) were reported by bingo players compared to superstitious beliefs specifically related to bingo play (e.g., sitting in the same seat for luck).

Different explanations have accounted for the use of superstition during bingo play. Griffiths and Bingham (2005) suggested that having superstitious beliefs may simply be a way to add excitement to the game. King (1990) believes that bingo players are in a conflict between playing for charity and playing to win. She argues that because of this dilemma, players employ various strategies to deny responsibility of winning and justify their involvement in the game. By adopting superstitious behaviour and attributing luck to objects, players put an emphasis on the chance aspects of bingo which lowers personal commitment towards playing to win. King also notes that other players justify their bingo playing by stressing the charitable aspects of the game.

Alternatively, the use of superstitious practices in bingo might reflect a coping strategy used by players to gain perceived control in a game where the outcome is completely unpredictable and requires no skill (Reith, 1999). However, it is not clear if bingo players believe they can exert control over the outcome of a bingo game using superstitious beliefs and practices. This is an important question to address since an illusion of control is thought to be associated with the development of problem gambling (Joukhador, Maccallum, & Blaszczyński, 2003). According to Chapple and Nofziger (2000), bingo players who used charms during bingo play believe on some level that the charm can influence the outcome of the game. Based on informal observations, they noted that players with the most elaborate shrines or collection of charms played the greatest number of cards.

In Griffiths and Bingham's study (2005) only one significant result was found regarding superstitious beliefs when playing bingo – a greater percentage of heavy spenders (those

who spend £20 or more in one bingo hall visit) stated they always sat in the same seat for luck. According to Burger's (1991) experimental studies on the desire for control in games of chance, bingo players incorporating superstitious behaviour have a low desire for control and do not view themselves as having power or control over the outcome. Instead, as the author suggests, these players may relinquish control to another source, a lucky object, when they believe this action leads to a more desirable outcome. This finding fits with the type of superstitious beliefs and practices reported in previous studies and the fact that bingo players tend to view bingo as a game of chance and not as a game of skill where control lies within players (Griffiths & Bingham, 2005; King, 1990). However, very little research has been conducted so far to understand the relation between superstition and bingo play.

Quantitative Data

Prevalence and Frequency of Play

Reports based on large-scale gambling surveys were reviewed for bingo-related data. These studies were mostly conducted within specific regions of Western countries (e.g., state-wide in the US or province-wide within Canada). A summary of the prevalence of bingo playing across regions is presented in Table 1. For adolescents, past-year bingo participation among high school students ranged from 1.5% in Nevada (Volberg, 2002) to 19.8% in Alberta (Phare et al., 2007). Bingo was found to be slightly less popular among the general adult population, where participation over the last year ranged from 1.9% in New Zealand (Ministry of Health, 2006) to 12.9% in Manitoba (Lemaire, MacKay, & Patton, 2008).

Only two surveys reported data on frequency of bingo play for adolescents. In Nevada, 0.1% of adolescents reported playing bingo monthly and none weekly (Volberg, 2002), while a more recent study in New York State revealed that 2% of students in grades 7 to 12 (ages 12 to 18) played bingo for money 20 or more days in the past year (Rainone & Gallati, 2007). Data on frequency of play among adolescents are too scarce to determine if bingo play is an important gambling activity in a younger population. More data was available on the frequency of bingo play among the general adult population. Monthly participation in bingo varied considerably from 0.4% in California (Volberg, Nysse-Carris, & Gerstein, 2006) to 7% in New Brunswick (New Brunswick Department of Health & Wellness, 2001), while weekly bingo playing ranged across regions from 0.2% (California) to 4% (New Brunswick) (Volberg 2002; Volberg Bernhard, 2006; Braid & Volberg, 2008; New Brunswick Department of Health & Wellness, 2001).

Among gamblers only, frequency of bingo play also varies widely across regions. Volberg and Bernhard (2006) reported that in New Mexico, among the gambling population, 4.3% of respondents had played bingo in their lifetime but not in the past year, 2.0% were past-year bingo players, 3.4% were monthly players, and 2.5% were weekly players. Within the bingo player population in the UK and New Brunswick, prevalence of weekly participation was 35% and 55%, respectively (Wardle, Sproston, Orford, Erens, Griffiths, Constantine et al., 2007; New Brunswick Department of Health & Wellness, 2001). Similar results were reported in a study of 412 UK bingo players by Griffiths and Bingham (2002), who found that 57% of respondents played once or twice per week, 17% played three times per week, and 3% played five or more times per week. Finally, in Saskatchewan, the most prevalent

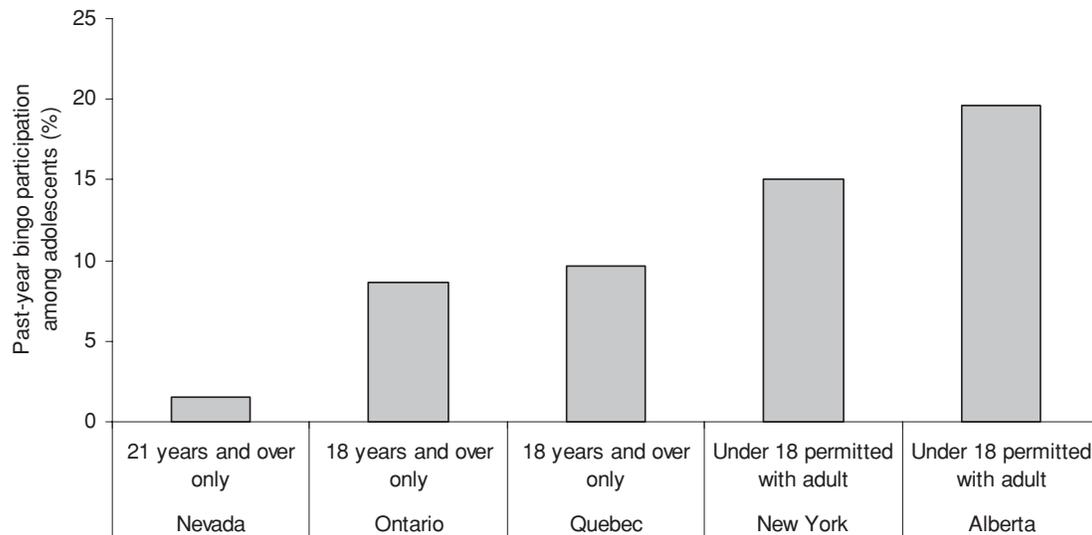
Table 1
Past year bingo participation

Region (Study)	Population	Sample description	Past-year prevalence
Quebec (Dube et al., 2006)	Adolescent	4571 students in public and private high schools; French and English	9.7%
Ontario (Adlaf et al., 2006)	Adolescent	6323 students in grades 7–12	8.6%
Alberta (Phare et al., 2007)	Adolescent	3915 students in public, Catholic, and charter schools in grades 7–12	19.8%
New York (Rainone & Gallati, 2007)	Adolescent	5800 students in public and private schools in grades 7–12	15.0%
Nevada (Volberg, 2002)	Adolescent	1004 residents aged 13–17	1.5%
Quebec (Ladouceur et al., 2005)	Adult	8842 adults; sample weighted by gender and region	9.0%
Ontario (Wiebe et al., 2006)	Adult	3604 adults aged 18 and over; stratified by gender	4.8%
Manitoba (Lemaire et al., 2008)	Adult	1848 adults aged 19 and over; stratified by gender and region	8.4%
British Columbia (Braid & Volberg, 2008)	Adult	3000 adults aged 18 and over; stratified by gender, age, and region	5.0%
New Brunswick (NB Department of Health & Wellness, 2001)	Adult	800 adults; two independent samples for gender split	11.0%
California (Volberg et al., 2006)	Adult	7121 adults aged 18 and over; stratified by age, gender, and ethnicity	2.1%
New Mexico (Volberg & Bernhard, 2006)	Adult	3007 adults aged 18 and over; stratified by gender, ethnicity, and age	5.5%
New Zealand (Ministry of Health, 2006)	Adult	12929 residents aged 15 and over; weighted to represent the adult population	1.9%
Queensland, Australia (Schofield et al., 2004)	Adult	1029 adults aged 18 and over; sample representative of Central Queensland	6.2%
United Kingdom (Wardle et al., 2007)	Adult	9003 individuals aged 16 and over; weighted by age, gender, and region	7.0%

weekly gambling activities were lottery ticket purchases (34.2%), playing bingo (23.9%), and playing Sport Select (23.5%) (Wynne, 2002).

In summary, although past-year bingo prevalence appears to be higher among adolescents, adults are likely playing more frequently. Weekly participation was found to be higher

Figure 1. Past-year bingo participation among adolescents in five North American regions, with age at which one may legally play government-sanctioned forms of bingo.



among bingo players than for most other games. This finding is consistent with previous findings that, among people who play bingo, it is their preferred gambling activity (Dixey, 1996). In other words, individuals who include bingo as one of their gambling activities are likely to spend most of their time playing bingo as opposed to any other game. For the adult population, frequency of play varies greatly between regions and may be linked to local availability, hours of operation, and accessibility. For adolescents, differences in rates of bingo participation may be linked to region-specific age restrictions. For example, the adolescent data in Table 1 suggest that higher proportions of adolescents play bingo in jurisdictions where the legal age to play bingo is lower. In Nevada, with the lowest yearly prevalence rate of 1.5%, individuals under the age of 21 are not permitted to participate in all regulated forms of gambling, including casinos, bingo, and horse race wagering (Volberg, 2002). In Ontario and Quebec, where relatively high participation rates were found (8.6% and 9.7%, respectively), individuals as young as 18 years old are permitted in bingo halls (Ontario Lottery and Gaming Corporation, 2007; Société des bingos du Québec, 2009). In New York State, where prevalence rates are higher than in Quebec and Ontario (15%), individuals under the age of 18 are permitted to play bingo if accompanied by an adult (Humphrey, 2005). In Alberta, where the highest bingo participation rate was found (19.8%) (Phare et al., 2007), small non-association bingo licensees can apply for an exemption from current policy to allow minors, accompanied by an adult, to play bingo for small cash prizes not exceeding \$50 (Alberta Gaming and Liquor Commission, 2009). This apparent inverse-relationship between age restriction and bingo participation among adolescents is depicted in Figure 1.

Clearly, there is a great deal of variability in the prevalence and frequency of bingo participation across regions. Although these differences can be partially attributed to true differences in gambling participation between regions, it is likely that a substantial portion

of this variability is due to unreliable data. Take, for instance, two separate gambling studies conducted in Ontario in 2001 and 2006 (Kelly et al., 2001; Wiebe, Mun, & Kauffman, 2006). Kelly et al. reported that 9.7% of the Ontario population played bingo whereas Wiebe, Mun, & Kauffman reported a prevalence of almost half that at 4.8%. It is possible that this difference is the result of a downward shift in the popularity of bingo between the years of 2001 and 2006 but it is more likely caused by error variance. Because most gambling studies are conducted by different sets of researchers in different regions, with varying methodological approaches, including sampling methods and wording of questionnaire items, they are bound to result in less-than-reliable results. So while the cited data is useful for gaining rough estimates of bingo participation in Western countries, comparisons across regions cannot be made with much confidence. This difficulty in integrating cross-regional data suggests the need for more uniformity in the methods used to collect large-scale gambling data.

Player Characteristics

Gender. All gambling surveys revealed that women are at least twice as likely to be involved in bingo playing than men. In a recent California gambling prevalence study, respondents who played in bingo halls (as opposed to in casinos) during the past year were significantly more likely to be female (Volberg et al., 2006). Similarly, in Nevada, among adolescents, girls were found to be twice as likely as boys to gamble on bingo (Volberg, 2002). The predominance of female bingo players is consistent with previous studies on bingo (Dixey, 1996; Griffiths & Bingham 2002; Chapple & Nofziger, 2000, King, 1990; O'Brien Cousins & Witcher, 2004, 2006; Maclure, Smith, Wood, Leblanc, & Cuffaro, 2006). In a national survey carried out amongst 7,166 bingo players in clubs throughout the UK, Dixey (1996) reported that the clientele of commercial bingo was overwhelmingly female (85%). Griffiths and Bingham (2002) found that 86% of respondents in a convenience sample were women while a telephone survey of regular senior bingo players by O'Brien Cousins and Witcher (2007) revealed that female players in Alberta outnumbered male players approximately four to one.

Age. Differences in bingo participation rates across age group vary greatly between regions. In the UK, bingo participation was found to be approximately 7% across all age groups among adults (16 to 74 years old) (Wardle et al., 2007). In Canada, age differences in participation vary considerably across provinces. In a 2001 Ontario study, 18- to 24-year-olds were found to be more than twice as likely to play bingo in the past year compared to adults over the age of 65 (13.6% vs. 6.5%) (Kelly, Skinner, Wiebe, Turner, Noonan, & Falkowski-Ham, 2001). In 2005, despite overall bingo participation decreasing, participation remained highest among the 18- to 24-year-olds (7.6%) (Wiebe, Mun, & Kauffman, 2006). Similar to Ontario, a higher prevalence of past-year bingo playing was found among 18- to 24-year-old Manitobans (Lemaire, MacKay, & Patton, 2008). In Manitoba, however, older adults were more likely to spend more money monthly on bingo than their younger counterparts (Lemaire et al., 2008). Popularity of bingo amongst youth is also reported in a New Zealand study of 1,200 individuals (15 to 24 years old) which revealed that on a monthly basis, bingo, casino gambling, and lottery playing were the activities on which gamblers spent the most money compared to other forms of gambling, with bingo being the primary activity (Clarke & Rossen, 2000). In California, bingo players

tended to be older than the general population, with over half (56%) exceeding the age of 40 (Volberg et al., 2006). A study of Iowa residents indicated that after lottery play, bingo was the most popular gambling activity among older adults (65 years and older) (Mok & Hraba, 1991). In addition, within each type of gambling, individuals between 65 and 74 years old were the least likely to participate with the exception of bingo. Bingo participation was second highest among 65- to 74-year-olds and highest among 18- to 24-year olds. These data suggest two things: first, there appears to be a shift as individuals reach old age away from most forms of gambling and toward a preference for bingo; and second, despite a general preference among older adults for bingo, past-year participation in bingo is found to be highest among younger adults (18 to 24 years old) which is likely due to their higher overall participation rates in gambling.

Ethnicity. Prevalence rates of gambling and problem gambling differ between ethno-cultural groups (Ellenbogen, Gupta, & Derevensky, 2007; National Research Council, 1999; Raylu & Oei, 2004; Sallaz, 2008). Very few regional surveys have examined cultural differences among bingo players. However, in New Mexico, Native Americans were found to be significantly more likely to have gambled in the past year at a casino and to have played bingo outside a casino, while non-Native Americans were more likely to have gambled in the past year on horse races, sports, and private games (Rainone & Gallati, 2007). Similarly, a regional analysis revealed that compared to Winnipeg and Western Canada, more gamblers in Northern Manitoba—a region where First Nations people comprise 62% of the population (Hallett, Thornton, Stevens, & Stewart, 2006)—reported playing bingo at least once during the past year (Lemaire, MacKay, & Patton, 2008). Although data is scarce regarding ethnicity, it appears that bingo participation is particularly high among First Nations/ Native Americans.

Socioeconomic status. Socioeconomic factors such as employment, education, and income have been shown to significantly impact gambling patterns and gambling expenditures (Layton & Worthington, 1999). In Dixey's UK studies (1987, 1996), bingo was found to be especially popular among working class women. In fact, according to the work of Downes et al. (1976), bingo in the UK was a game played exclusively among the working class rather than a game played exclusively among females. However, this trend appears to have changed since bingo has expanded in popularity in Western countries. In fact, Griffiths and Bingham (2002) found that 30% of the younger age group (18 to 45 years old), and 15% of the older group (over 46 years old), were in "white collar" occupations. With respect to education, a positive relationship was found between level of education and bingo playing in the UK, where more educated individuals tended to be more likely to participate in bingo compared to those with lower levels of education (Wardle et al., 2007). However, in Canada, with respect to educational attainment and bingo playing, both the Ontario and British Columbian studies reported an inverse relationship, such that bingo participation decreased among individuals with higher education (Braid & Volberg, 2008; Wiebe et al., 2006). These contrasting findings between the UK and Canada are difficult to interpret at the moment considering the limited available data.

Four surveys conducted in Ontario, New Brunswick, British Columbia, and the UK have looked at participation rates in bingo and income (Braid & Volberg, 2008; Wardle

et al., 2007; New Brunswick Department of Health & Wellness, 2001; Wiebe et al., 2006). Each Canadian study reports that bingo participation is significantly higher among lower annual income residents (\$20,000-\$30,000) compared to individuals having higher income (\$50,000 – \$100,000). Similarly, in the UK, past-year participation in bingo was significantly higher among the lowest income households (9%) than the highest income households (4%).

Health status. In the UK, bingo prevalence was highest among individuals who reported fair health (11%) and lowest among those who reported good or very good health (7%) and those with bad or very bad health (8%). Survey respondents with a longstanding illness did not engage in any one particular activity more often than respondents with no longstanding illnesses, with the exception of bingo (Wardle et al., 2007). This relationship may be confounded by age, as older individuals tend to be less healthy. However, O'Brien Cousins and Witcher (2007) found that among individuals aged over 65, more bingo players reported physical health limitations that would prevent them from participating in physical activities compared to non-players. Additionally, sedentary living was the only significant predictive lifestyle pattern for seniors engaged in bingo.

In summary, bingo players are predominantly female and the game remains one that is primarily popular among individuals living in households with low relative incomes. In regards to age, it seems that adolescents and young adults have the highest participation rates. At the same time, bingo appears to be a favoured gambling activity among elderly people. The relation between bingo playing and ethnicity merits further attention. High rates of bingo playing in First Nations communities may be due to the greater abundance of bingo halls and gambling facilities, as well as their widespread social acceptance in these communities. However, the relationship between ethnicity and bingo play is perhaps better explained in terms of the socio-economic conditions affecting certain cultures and communities, since bingo players tend to have less income than non-bingo players. Finally, having a physical health limitation seems to be associated with bingo playing. Based on these data, it seems that bingo players are more likely to be female, living in a working class or lower-income household, and either a senior or young adult.

Bingo Play and Problem Gambling

Problem gambling is characterized by continued gambling despite harmful negative consequences such as disrupted interpersonal relationships, emotional distress, and financial problems (American Psychiatric Association, 2000). A recent estimate of past-year gambling problems in the UK indicated that 0.6% of the adult population fit the clinical definition of a problem gambler (Wardle et al., 2007).

The association between bingo play and problem gambling has received little attention from researchers. In early studies, there were few accounts of researchers being concerned about excessive gambling or other potential negative consequences attached to bingo play. For example, according to Dixey (1996), “there is no reason to suggest that there are any more ‘problem’ bingo players than there are problem horse race bettors or problem drinkers” (p.149). In contrast, King (1990) identified several statements made by bingo players in which they expressed fears of showing self-interest in the game, losing self-control,

becoming addicted, and committing the “sins” of gambling. In their study of the social construction of bingo players and bingo playing, Chapple and Nofziger (2000) reported that the occasional drinking, chain smoking, and participation in other gambling activities by bingo players may be considered “acts of deviance.” As well, they observed that some players reported feeling distress with their bingo playing as it takes time away from family and home responsibilities. In their study of bingo playing in the UK, Griffiths and Bingham (2002) noted that some bingo players spent an inordinately large amount of money on bingo (9% of players spending £30 or more per session). However, as they explained, money spent is not, by itself, an indication of excessive gambling. In their ethnographic study of seniors playing bingo, O’Brien Cousins and Witcher (2004) reported that although none of the eight players they interviewed qualified for pathological gambling according to DSM-IV-TR criteria (American Psychiatric Association, 2000), one woman was possibly gambling “on the edge” and concerned about her debts as a result of excessive bingo play. In their ethnographic study of women’s involvement in bingo, Maclure et al. (2006) considered imprudent the actions of some players who overspent or admitted to jeopardizing their relations with close family members. Additionally, women with family responsibilities and those in a low-income situation reported feelings of stress and guilt over the amount of time and money devoted to bingo. Examination of previous studies suggests that although bingo is a harmless pastime for the majority of individuals, there is evidence of signs of at-risk gambling among some regular bingo players. However, little is known about the prevalence of problem gambling among regular bingo players or about the specific risk factors associated with bingo play.

Data from regional surveys on gambling and problem gambling suggest that problem gambling among bingo players may be more prevalent than previously thought. In British Columbia, it is estimated that 16.1% of past year bingo gamblers are moderate problem or severe problem gamblers. This proportion is significantly higher than the estimated problem gambling rate among all British Columbians (4.6%) and among all past year gamblers (6.3%) (Braid & Volberg, 2008). In Manitoba, in a sample of 5,096 individuals, 10.4% of non-problem gamblers, 22.5% of low-risk gamblers, 23.8% of moderate-risk gamblers, and 30.8% of problem gamblers had played bingo in the past year. In Saskatchewan, the greatest difference in past-year participation rates between problem and non-problem gamblers was found for VLTs (78.3% and 14.8%, respectively), instant win tickets (78.3% vs. 27.7%), bingo (47.8% vs. 7.5%), and slots (47.8% vs. 19.5%). Also, problem gamblers were found to be more likely than non-problem gamblers to spend more each month on bingo (median monthly expenditures of \$160 and \$15.50, respectively). Similarly, moderate-risk gamblers spent twice as much money on bingo compared to non-problem gamblers (\$32.50 vs. \$15.50); however, the expenditure differences between low-risk and non-problem gamblers were less pronounced (\$20.00 vs. \$15.50) (Wynne, 2002). In New Brunswick, over the past year, regular gamblers were significantly more likely than casual gamblers to have played bingo (18% vs. 8%) (New Brunswick Department of Health & Wellness, 2001). In Ontario, severe problem gamblers reportedly spent 10.2 hours per month on bingo, whereas the mean for all gamblers playing bingo was 2.5 hours (Wiebe et al., 2006).

In California, the lifetime prevalence rate of pathological gambling was found to be 200% higher among bingo gamblers than among gamblers of the general population (Volberg

et al., 2006), while in New Mexico, problem gamblers were more likely to have played bingo in the last year (23.3%) when compared with at-risk gamblers (7.1%), and non-problem gamblers (6.0%) (Volberg & Bernhard, 2006). In the UK, while 3.1% of past-year gamblers playing bingo qualified as problem gamblers, 5.0% of those who had played in the past week were identified as problem gamblers (Wardle et al., 2007). Finally, in a comparative study of older and younger adults in New Zealand, preferences for electronic gaming machines (EGMs) and bingo were related to problem gambling scores for both age groups (Clarke, 2008). Judging from the available data there remains little doubt that problem gamblers tend to gamble more often on most forms of gambling, with bingo being no exception. Not surprisingly, problem gamblers seem to wager more money and spend more time per bingo session than non-problem gamblers.

Further understanding of the association between bingo playing and problem gambling can be gained from descriptions by gamblers of the activities they judge to be problematic. In a study of gamblers in Ontario, over half of the respondents (51.5%) indicated that there were specific games related to their difficulties, with almost one-third (30.4%) identifying bingo as a particularly problematic gambling activity (Wiebe et al., 2006). In New Brunswick, for adults who live with or know of someone with a gambling problem, bingo is seen as playing a greater role in problem gambling compared to lottery or casino games (New Brunswick Department of Health & Wellness, 2001). In Queensland, Australia, the main source of gambling problems were reported as EGMs (67%), horse racing (18%), and a combination of horse racing, bingo, EGM, and scratch tickets (15 %) (Schofield, Mummery, Wang, & Dickson, 2004). These findings suggest that from problem gamblers' perspectives as well as their family and friends, bingo plays a significant role in gambling problems.

Our examination of the link between bingo and problem gambling suggests that, for adults, bingo playing is more common among at-risk and problem gamblers than non-problem gamblers. It is unclear, however, if bingo plays a role in the initial development of gambling problems or if it only contributes to the maintenance of these problems. It may be that involvement in bingo may put someone at increased risk of developing a gambling problem or that individuals with existing gambling problems are more likely to seek out bingo compared to non-problem gamblers.

One aspect of bingo that might contribute to increased problems is the scheduling of bingo events. These events normally occur in regular intervals (e.g., weekly or daily) which encourage regular involvement. Unlike lottery draws, bingo events feature multiple games in succession, requiring gambling for longer periods of time, and players must be physically present as each game unfolds, thus increasing player involvement in the activity. As well, the availability of food and opportunities to socialize facilitate player attachment to bingo. Nevertheless, interpretations of the association between bingo play and problem gambling should be made with caution given that problem gamblers are normally involved in multiple gambling activities. In fact, in some jurisdictions bingo halls offer other gambling opportunities apart from bingo. Between or before bingo games, it is common for individuals to play cards, purchase instant-win lottery tickets, or play EGMs (Chapple & Nofziger). One study showed that a greater percentage of heavy gamblers

(spending £30 or more per session) played both the parti-bingo (an instant play game where players insert a coin in a slot and can win money or sweets) and the fruit machines (i.e., electronic gaming machines) between the bingo games (Griffiths & Bingham, 2005).

Discussion

Our examination of the literature on bingo suggests that gambling research on bingo, particularly empirical data, is relatively scarce. Most of the published studies have taken a sociological or ethnographical approach and have used participant observation and interviews to investigate the experience of bingo from the players' perspectives. A few studies have examined the question of whether or not there are risks associated with regular bingo participation. Our review of published studies and of data contained in general gambling prevalence surveys supports the idea put forward that bingo, like other gambling activities, has the potential to either be a harmless form of entertainment or a risky behaviour with addictive properties and damaging consequences (Chapple & Nofziger, 2000; Maclure et al., 2006). However, the specific risk factors associated with bingo play, the elements of bingo that make it particularly addictive for some, as well as the characteristics of players who experience problems with bingo remain to be investigated in detail.

One of the important findings in our review is the relatively high rate of past-year participation in bingo among adolescents. Perhaps this finding is not too surprising given the public perception of bingo. Compared to other gambling activities, bingo is generally viewed as a "soft" form of gambling as evidenced by its pervasiveness in schools, community centres, and churches as both a fun activity and fundraising venture. These same organizations, meanwhile, tend to adopt harsher stances regarding other types of gambling such as VLTs. Because bingo is, by many, perceived as an innocuous form of gambling, adolescents are likely to have increased exposure to it and adopt a more accepting attitude toward bingo. Such attitudes among adolescents are reinforced further by parents who play bingo regularly and approve of their children's participation. Past research has shown that parents who give lottery tickets as gifts to their teenaged children may send them mixed messages about gambling (Felsher, Derevensky, & Gupta, 2004). This may be the case to an even greater extent with bingo, which already constitutes a socially acceptable pastime with little perceived harm. Clearly, future studies should be directed at understanding the gambling behaviour of adolescents as it relates to bingo. Finally, as for other forms of gambling, information about the risks associated with bingo play should be included in youth gambling prevention activities.

For the adult population, our examination of the demographic characteristics of bingo players suggests that regular players are more likely to be female, in poor health, and belong to at least one of three groups: low-income individuals, seniors, and young adults. For low-income individuals, Dixey (1996) provides a clear description of the social and cultural context in which working-class women were engaged in playing bingo in the 1980s. For regular female bingo players, bingo was "an invaluable source of companionship, a refuge which offers excitement, and an opportunity to celebrate 'traditional'

working-class values such as neighbourliness, non-intimate companionship, the right to entertainment and so on” (p.149). Similarly, for low-income individuals (including the working class women mentioned in Dixey’s work), playing bingo seems to be a way to affirm one’s social identity and gain empowerment (Maclure et al. 2006). This intriguing conceptualization holds potential for future research examining motives for bingo participation. Empirical studies should test the impact of bingo play on self-concept and related variables.

Bingo participation among seniors is another cause for concern. While researchers have proposed that the entertainment and socialization opportunities may have a therapeutic value for seniors who are lonely or bored in their everyday lives, problems may arise. As O’Brien Cousins and Witcher (2004) explained, seniors are at a point of their life where “widowhood, inadequate pension income, isolation from family, and living in close proximity to other older people who they do not want to spend time with, lead both single and married older people to want to get out and meet people by participation in an affordable form of entertainment” (p.144). Factors including reduced mobility, health problems, fear of being alone, and boredom may explain why spending time in the bingo halls is important to them. For seniors, the game is simple and fun, food is often available, and they can meet people and have a feeling of belonging.

Low-income individuals and seniors share common ground in terms of their social position which might contribute to their mutual attraction to bingo. Low-income individuals and seniors are groups that are more susceptible to feeling excluded from society. Individuals of lower socio-economic status are limited by their incomes, which restricts their choices for leisure. Seniors, meanwhile, can often be marginalized by their retirement status, limited income, or impaired health, all factors which may reduce their possibilities for entertainment. Consequently, to socially-excluded individuals, bingo may be the ultimate refuge for entertainment. The popularity of bingo among seniors and low-income individuals speaks of the overall organization, structure, and values of society. Geertz (1973) contended that gambling contexts can be viewed as microcosms that mirror the structure and values of society. The fact that studies have consistently reported that bingo halls have a communal atmosphere and regular players become attached to their role as bingo players may indicate how poorly surrounded and supported these same individuals are outside the bingo halls. It follows that the bingo hall may be viewed as a microcosm of society, where bingo players represent individuals who are circumstantially limited based on their age, gender, or income, and regular bingo play is the remedy against social exclusion. Accordingly, variability in social structures across countries might also be reflected in regional differences in the experiences of bingo players.

Involvement in bingo may have a therapeutic value for individuals who are in need of meeting people or adding excitement to a lonely and boring day. However, research has yet to show whether bingo can have a beneficial effect for regular bingo players and to what extent their participation impacts the lives of their relatives and friends. Interpersonal problems may arise if regular attendance at bingo keeps one away from family or loved ones and if household and work responsibilities are neglected. A downward spiral can

develop if individuals are using bingo as an escape to avoid responsibilities or to forget about personal problems. Clearly, individuals who engage in gambling in order to escape personal problems are at a greater risk of developing a gambling problem. For low-income individuals, regular bingo participation may lead to even greater financial problems which may be particularly problematic for seniors who more often live on fixed incomes. Finally, bingo is a sedentary form of leisure. For individuals who regularly play bingo, especially seniors, this may lead to a more rapid physical decline, health issues, and a lower quality of life (O'Brien Cousins & Witcher, 2007). Both the positive and negative effects of bingo participation on seniors and low-income individuals have yet to be studied extensively.

Similarly, bingo play among young adults is not well understood by gambling researchers. The popularity of bingo among young adults may be linked to the modernization of the bingo industry. These changes first came in the UK with the creation of a national game with larger prizes in the attempt of attracting a younger, more affluent clientele (Dixey, 1996). With its technological advancements, electronic bingo on the internet may have gained popularity among a younger group of gamblers. Similar to adolescents, young adults may have been introduced to bingo by family or friends and accompanied their parents to bingo as part of family activities (Chapple & Nofziger, 2000; Dixey, 1996). In one study, a young adult bingo player was described as a young mother who was introduced to bingo by her mother-in law (Chapple & Nofziger, 2000). For this woman, bingo represented the opportunity to stop daily chores, leave the house, and socialize with other people. Young adults who are regular bingo players may share with older bingo players the same difficulties and worries of life associated with household and personal responsibilities. The notion of bingo as a form of escape, particularly among young adults experiencing inordinately high amounts of stress, warrants more rigorous investigation by gambling researchers.

Our review clearly suggests the need for additional research on bingo, particularly a closer analysis of bingo players who are involved in the game on a regular basis. Research should focus on understanding the motivations and frequency of play of young adults, as well as the potential consequences playing bingo has on their daily lives. Furthermore, the relation between regular bingo play and social exclusion should be investigated. Attention should also be given to the time and involvement spent by players at bingo and its impact on their interpersonal relationships.

These factors could be investigated by examining the behaviour of online bingo players. In an online study of poker players (Griffiths, Parke, Wood, & Rigbye, 2009), it was suggested that "online poker may be producing a new type of problem gambler where the main negative consequence is loss of precious time (rather than loss of money)" (p.88). Loss of time may be more problematic for individuals who have household responsibilities, and less problematic for seniors who in fact may be trying to fill their time. Nevertheless, the traditional view that bingo is uniquely a game of socialization should be reconsidered in light of this research.

References

- Adlaf, E. M., Paglia-Boak, A., Beitchman, J. H., & Wolfe, D. (2006). *The Mental Health and Well-Being of Ontario Students, 1991–2005: Detailed OSDUS Findings*. Toronto: Centre for Addiction and Mental Health.
- Alberta Gaming and Liquor Commission. (2009). Frequently Asked Questions. Retrieved December 15, 2008, from <http://www.aglc.gov.ab.ca/gaming/faq.asp#LegalAge>
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders, Fourth edition-Text revision*. Washington, DC: Author.
- Braid, K., & Volberg, R. (2008). *British Columbia Problem Gambling Prevalence Study*. Submitted to Gaming Policy and Enforcement Branch and Ministry of Public Safety and Solicitor General. Vancouver: Ipsos Reid Public Affairs and Gemini Research. Retrieved March 14, 2009, from <http://www.bcreponsiblegambling.ca/responsible/docs/rpt-rg-prevalence-study-2008.pdf>
- Burger, J. M. (1991). The effects of desire for control in situations with chance determined outcomes: Gambling behavior in lotto and bingo players. *Journal of Research in Personality*, 25, 196–204.
- Chapple, C., & Nofziger, S. (2000). Bingo! Hints of deviance in the accounts of sociability and profit of bingo players. *Deviant Behaviour*, 21, 489–517.
- Clarke, D. (2008). Older Adults' Gambling Motivation and Problem Gambling: A Comparative Study. *Journal of Gambling Studies*, 24, 175–192.
- Clarke, D., & Rossen, F. (2000). Adolescent gambling and problem gambling: A New Zealand study. *New Zealand Journal of Psychology*, 29, 10–16.
- Derevensky, J. L., & Gupta, R. (2007). Internet gambling amongst adolescents: A growing concern. *International Journal of Mental Health and Addiction*, 5, 93–101.
- Derevensky, J. L., Gupta, R., Messerlian, C., & Gillespie, M. (2004). Youth gambling problems: A need for responsible social policy. In J. Derevensky & R. Gupta (Eds.), *Gambling problems in youth. Theoretical and applied perspectives*. (pp. 231–252). New York: Kluwer Academic.
- Dixey, R. (1987). It's a great feeling when you win: Women and bingo. *Leisure studies*, 6, 199–214.
- Dixey, R. (1996). Bingo in Britain. An analysis of gender and class. In J. McMillen (Ed.), *Gambling cultures*. (pp. 136–151). London: Routledge.

- Dixey, R., & Talbot, M. (1982). *Women, leisure and bingo*. Leeds, UK: Trinity and All Saints College.
- Downes, D. M., Davies, B. P., David, M. E., & Stone, P. (1976). *Gambling, work, and leisure: A study across three areas*. London: Routledge & Kegan Paul.
- Dubé, G., Tremblay, R., Traore, I., & Martin, I. (2007). *Enquête québécoise sur le tabac, l'alcool, la drogue et le jeu chez les élèves du secondaire, 2006*. Québec: Institut de la statistique du Québec.
- Ellenbogen, S., Gupta, R., & Derevensky, J. (2007). A cross-cultural study of gambling behavior among adolescents. *Journal of Gambling Studies*, 23, 25–39.
- Felsher, J., Derevensky, J., & Gupta, R. (2004). Lottery participation by youth with gambling problems: Are lottery tickets a gateway to other gambling venues? *International Gambling Studies*, 4, 109–126.
- Geertz, C. (1973). Deep play: Notes on the Balinese cockfight. In C. Geertz (Ed.), *The interpretation of cultures*. (pp. 412–453). New York: Basic Books.
- Griffiths, M., & Bingham, C. (2002). Bingo playing in the UK: The influence of demographics factors on play. *International Gambling Studies*, 2, 51–60.
- Griffiths, M., & Bingham, C. (2005). A study of superstitious beliefs among bingo players. *Journal of Gambling Issues*, 13. Retrieved March 17, 2009, from <http://www.camh.net/egambling/archive/pdf/JGI-Issue13/JGI-Issue13-griffiths.pdf>
- Griffiths, M., Parke, J., Wood, R., and Rigbye, J. (2009). Online poker gambling in university students: Further findings from an online survey. *International Journal of Health Addiction*. Retrieved March 17, 2009, from <http://www.springerlink.com/content/881357422np12870/>
- Hallett, B., Thornton, N., Stevens, H., and Stewart, D. (2006). *Aboriginal people in Manitoba*. Winnipeg: Manitoba Aboriginal Affairs Secretariat. Retrieved on March 2, 2009, from <http://www1.servicecanada.gc.ca/eng/mb/aboriginal-profile/aboriginals.pdf>
- Humphrey, C. (2005). New York bingo licensing law. Retrieved March 3, 2009, from <http://www.gambling-law-us.com/Charitable-Gaming/New-York/Local-Bingo.htm>
- Joukhador, J., Maccallum, F., & Blaszczyński, A. (2003). Differences in cognitive distortions between problem and social gamblers. *Psychological Reports*, 92, 1203–1214.

- Kelly, J., Skinner, W., Wiebe, J., Turner, N., Noonan, G., & Falkowski-Ham, A. (2001). *Project Weathervane: Measuring gambling behaviours knowledge and attitudes in Ontario*. Ontario: Responsible Gambling Council of Ontario and Centre for Addiction and Mental Health. Retrieved February 21, 2009, from http://www.responsiblegambling.org/articles/weathervane_report.pdf
- King, K. M. (1985a). *Gambling for God: Charity and the self-interest in the bingo parlor*. Unpublished doctoral dissertation. Chapel Hill: University of North Carolina.
- King, K. M. (1985b). Gambling: Three forms and three explanations. *Sociological focus*, 18, 235–248.
- King, K. M. (1987). Normative contingencies: Charity and moderation. *Current Perspectives in Social Theory*, 8, 215–237.
- King, K. M. (1990). Neutralizing marginally deviant behavior: Bingo players and superstition. *Journal of Gambling Studies*, 6, 43–61.
- Korn, D. A., & Shaffer, H. J. (1999). Gambling and the health of the public: Adopting a public health perspective. *Journal of Gambling Studies*, 15, 289–365.
- Lamacraft, T. (1999, February 4). Clickety clique: They're young, successful and they can't get enough of bingo. *The Mirror* (London, UK), pp. 30–31.
- Ladouceur, R., Jacques, C., Chevalier, S., Sévigny, S., & Hamel, D. (2005). Prevalence of pathological gambling in Quebec in 2002. *Canadian Journal of Psychiatry*, 50, 451–456.
- Layton, A., & Worthington, A. (1999). The impact of socio-economic factors on gambling expenditure. *International Journal of Social Economics*, 26, 430–440.
- Lemaire, J., MacKay, T-L., & Patton, D. (2008). *Manitoba Gambling and Problem Gambling 2006*. Manitoba: Addictions Foundation of Manitoba. Retrieved January 25, 2009 from <http://www.afm.mb.ca/documents/ManitobaGamblingandProblemGambling2006.pdf>
- Maclure, R., Smith, J. D., Wood, S. L., Leblanc, R., Li, J., & Cuffaro, M. (2006). Entertainment or imprudence? An ethnography of female bingo players. In J. F. Cosgrave (Ed.), *The sociology of risk and gambling reader*. (pp. 163–184). New York: Routledge.
- Ministry of Health. (2006). *Problem Gambling in New Zealand: Analysis of the 2002/03 New Zealand Health Survey*. Wellington: author.
- Mok, W. P., & Hraba, J. (1991). Age and gambling behavior: A declining and shifting pattern of participation. *Journal of Gambling Studies*, 7, 313–333

National Research Council. (1999). *Pathological gambling: A critical review*. Washington, D.C.: National Academy Press.

New Brunswick Department of Health & Wellness. (2001). *Survey of Gambling and Problem Gambling in New Brunswick*. Retrieved January 14, 2009, from <http://www.gnb.ca/0378/pdf/GamblingPrevalenceReport2001ENG.pdf>

O'Brien Cousins, S., & Witcher, C. S. (2004). Older women living the bingo stereotype: "Well, so what? I play bingo. I'm not out drinkin'. I'm not out boozing." *International Gambling Studies*, 4, 127–146.

O'Brien Cousins, S., & Witcher, C. S. (2007). Who plays bingo in later life? The sedentary lifestyles of 'little old ladies'. *Journal of Gambling Studies*, 23, 95–112.

Ontario Lottery and Gaming Corporation. (2009). *Frequently Asked Questions*. Retrieved March 4, 2009, from <http://www.olg.ca/bingo/faq.jsp>

Phare, S., Lane, J., & Elliott-Erickson, S. (2007). *Gambling among Alberta youth: The Alberta youth experience survey 2005*. Edmonton, Alberta, Canada: Alberta Alcohol and Drug Abuse Commission.

Rainone, G., & Gallati, R. J. (2007). *Gambling Behaviors and Problem Gambling Among Adolescents in New York State: Initial Findings from the 2006 OASAS School Survey*. New York: New York State Office of Alcoholism and Substance Abuse Services.

Raylu, N., & Oei, T. P. (2004). Role of culture in gambling and problem gambling. *Clinical Psychology Review*, 23, 1087–1114.

Reith, G. (1999). *The age of chance, gambling in the western culture*. New York: Routledge.

Reitz, L. M. (2004). It's more than gambling: Finding stress relief and socialization through bingo. Unpublished doctoral dissertation, Pennsylvania: Marywood University.

Sallaz, J. J. (2008). Deep plays: a comparative ethnography of gambling contests in two post-colonies. *Ethnography* 9, 5–32.

Schwartz, D. G. (2006). *Roll the bones: The history of gambling*. New York: Gotham Books.

Schofield, G., Mummery, K., Wang, W., & Dickson, G. (2004). Epidemiological study of gambling in the non-metropolitan region of central Queensland. *Australian Journal of Rural Health*, 12, 6–10.

Société des bingos du Québec (2009). *Frequently Asked Questions*. Retrieved March 3, 2009, from <http://www.bingo-quebec.com/web/jsp/MainPage.jsp?Params=Y.US.70703.0>

Volberg, R. A. (2002). *Gambling and problem gambling among adolescents in Nevada*. Report to the Nevada Department of Human Resources. Retrieved on January 10, 2009, from http://dhhs.nv.gov/PDFs/GamblingAmongAdolescents_Nevada.pdf

Volberg, R. A., Bernhard, B. (2006). *The 2006 Study of gambling and problem gambling in New Mexico*. New Mexico: Report to the Responsible Gaming Association of New Mexico. Retrieved January 16, 2009, from dSPACE.ucalgary.ca/bitstream/1880/44211/1/New_Mexico_Report_2006.pdf

Volberg, R. A., Nysse-Carris, K. L., & Gerstein, D.R. (2006). *California Problem Gambling Prevalence Survey*. California: California Department of Alcohol and Drug Programs Office of Problem and Pathological Gambling. Retrieved January 10, 2009, from www.adp.cahwnet.gov/OPG/pdf/CA_Problem_Gambling_Prevalence_Survey-Final_Report.pdf

Wardle, H., Sproston, K., Orford, J., Erens, B., Griffiths, M., Constantine, R., et al. (2007). *The British Gambling Prevalence Survey 2007*. London: The UK Gambling Commission.

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

Wynne, H. J. (2002). *Gambling and problem gambling in Saskatchewan*. Ottawa: Canadian Centre on Substance Abuse.

Manuscript history: submitted August 4, 2009; accepted February 4, 2010. This article was peer-reviewed. All URLs were available at the time of submission.

For correspondence: Jean-Claude Moubarac, M.Sc., International Centre for Youth Gambling Problems and High-Risk Behaviors; Email: jean-claude.moubarac@douglas.mcgill.ca

Contributors: Jean-Claude Moubarac conducted the literature review and wrote the initial draft of the paper. Will Shead assisted with the revised draft, making significant changes to the paper. Jeffrey Derevensky contributed with final comments and additional revisions to the paper.

Competing interests: None declared

Funding: This research was funded by the International Centre for Youth Gambling Problems and High-Risk Behaviors.

Ethics approval: Not required.

Jean-Claude Moubarac is a PhD candidate in the Department of Public Health at the Université de Montréal where he is studying the contextual factors associated with sugar

consumption. He completed an MSc in Anthropology at the Université de Montréal. His research interests include socio-cultural studies in public health related to gambling, sugar consumption, and the concept of ethnicity. He is currently employed as the coordinator of the *Reseau québécois de recherché sur le suicide* and continues to collaborate on projects with the International Centre for Youth Gambling Problems and High Risk Behaviors at McGill University in Montreal where he worked for two years.

Dr. N. Will Shead is a post-doctoral fellow at the International Centre for Youth Gambling Problems and High-Risk Behaviors at McGill University in Montreal, QC. He completed a PhD in Clinical Psychology at the University of Calgary. His work has been published in a variety of gambling and psychology-based academic journals. His research interests include cognitive mechanisms underlying problem gambling, affect-regulation expectancies and motives related to gambling, internet gambling, sports betting, and poker playing.

Dr Jeffrey L. Derevensky is Professor and Director of Clinical Training, School/Applied Child Psychology, Department of Educational and Counselling Psychology, and Professor, Department of Psychiatry at McGill University. He is a clinical consultant to numerous hospitals, school boards, government agencies, and corporations. Dr. Derevensky has published widely in the field of youth gambling, is associate editor of the *Journal of Gambling Studies*, and is on the editorial board of several journals. He is co-director of McGill University's International Centre for Youth Gambling Problems and High-Risk Behaviors.