

## Lottery ticket and instant win ticket gambling: exploring the distinctions

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### Abstract

Lottery gambling is the most common form of gambling in Canada, and lottery tickets and instant win tickets are the most frequently played games. Differences between lottery ticket gambling and instant win ticket gambling were examined by using a large-scale Canadian data set ( $N = 25,780$ ). Lottery ticket gambling was associated with being older, male, and married, whereas instant win ticket gambling was associated with lower levels of education. Frequency of instant win ticket gambling predicted greater problem gambling severity and participating in more gambling activities independent of demographic variables and lottery ticket gambling. In comparison, frequency of lottery ticket gambling did not predict problem gambling severity or the number of gambling activities independent of demographic variables and instant win ticket gambling. Neither lottery game was related to mental health disorders or substance use. These findings provide converging evidence suggesting that different lottery games may attract distinct types of Canadian gamblers.

### Résumé

Les jeux de loterie sont les jeux de hasard les plus courants au Canada et les loteries conventionnelles et instantanées, les plus populaires. Nous avons étudié les différences entre ces deux types de loteries sur la base d'un ensemble de données à grande échelle recueillies au Canada ( $n = 25\ 780$ ). Nous avons relevé un lien entre les loteries conventionnelles et les hommes mariés d'âge avancé, alors que les loteries instantanées sont associées à un faible degré d'éducation. La fréquence de participation aux loteries instantanées est un facteur de prédiction de la gravité des problèmes de jeu et du nombre d'activités de jeu, indépendamment des variables démographiques et de la participation aux loteries conventionnelles. À l'inverse, la fréquence de participation aux loteries conventionnelles ne permet pas de prédire la gravité des problèmes de jeu ou le nombre d'activités de jeu, indépendamment des variables démographiques ou de la participation aux loteries instantanées. Ni l'un ni

l'autre type de loterie n'est associé à des problèmes de santé mentale ou de toxicomanie. Ces conclusions fournissent des preuves convergentes indiquant que différents jeux de loterie pourraient attirer différents types de joueurs au Canada.

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## Introduction

Lottery gambling is usually recognized as the most common type of gambling activity (Ariyabuddhiphongs, 2011; LaPlante, Gray, Bosworth, & Shaffer, 2010). In the United States, past-year prevalence rates for lottery gambling range from 49% to 66% in adults (Barnes, Welte, Tidwell, & Hoffman, 2011; Welte, Barnes, Wiczorek, Tidwell, & Parker, 2002). Similar rates have been reported for Canadians (Marshall & Wynne, 2003). Lottery gambling is usually viewed as a “socially acceptable” form of gambling (when it is even viewed as gambling) and is also often considered to be a harmless or low-risk form of gambling with respect to the emergence of problem gambling (Rogers, 1998). The relative popularity of lottery gambling is intriguing when one considers that lotteries offer very low odds of winning and the lowest pay-out ratios of any form of gambling (Ariyabuddhiphongs, 2011; Rogers, 1998). The most common types of lotteries distributed throughout Canada include lottery tickets (e.g., Lotto MAX, Lotto 6/49), instant win tickets (e.g., Instant BINGO, Cash O Rama), and sports games (e.g., Pro-Line, Pro-Picks), with lottery tickets and instant win tickets being the most frequently played. Prior studies have examined demographic and psychosocial variables associated with lottery gambling to help clarify the profiles of frequent lottery gamblers. However, most research to date has not examined possible differences between these types of lottery games.

Various demographic and psychosocial variables are associated with lottery gambling in general. The typical lottery gambler profile is commonly perceived to be that of a white, middle-aged, middle-class man (Lorenz, 1990); in recent years, however, it appears that both men and women, most of whom are married and in lower income and less educated populations, frequently play lotteries (Giacopassi, Nichols, & Stitt, 2006; Haisley, Mostafa, & Loewenstein, 2008; Lang & Omri, 2009; Welte et al., 2002). Recent evidence indicates that the frequency of lottery gambling increases with age until the thirties, levels off until the sixties, and then begins to decrease in the seventies (Barnes et al., 2011). Those with gambling problems are more likely to play the lottery, and to play more often, than are gamblers who do not have gambling problems (Felsher, Derevensky, & Gupta, 2004; Hraba, Mok, & Huff, 1990). Lottery gamblers endorse behaviours associated with problem gambling, such as chasing losses and betting more than they can afford (Felsher et al., 2004; Papoff & Norris, 2009). Additionally, lottery gambling is associated with other forms of gambling, including, but not limited to, slots or video lottery terminals at casinos and horseracing at track or off-track (Papoff & Norris, 2009). Studies also indicate associations between lottery gambling and mental health issues such as mood, anxiety,

and substance use disorders (Frost, Meagher, & Riskind, 2001; Hendriks, Meerkerk, Van Oers, & Garretsen, 1997; O'Dwyer & Sheppard, 1993).

Both lottery tickets and instant win tickets have relatively low expected returns compared with other types of gambling (Ariyabuddhiphongs, 2011). However, there are some differences between these games, which might contribute to distinctions between lottery ticket and instant win ticket gamblers. The main difference between these games is the timing of the payout, or how soon one knows whether the ticket is a winner. Lottery tickets have delayed feedback, with the winning numbers announced during a draw at a later date. Instant win tickets are not contingent on a later event, as gamblers immediately tear open or scratch the ticket to reveal if they have won (Papoff & Norris, 2009). The second major difference between these games is that lottery tickets typically offer a first prize that is in the multi-million dollar range, an amount that could be “life-changing” for most people. In contrast, instant wins generally offer smaller first prizes. To date, one study has reported differences between lottery ticket and instant win ticket gambling. el-Guebaly et al. (2006) reported that men purchase more lottery tickets, whereas women purchase more instant win tickets, in Canada. This research suggests that there may be some differences between lottery ticket and instant win ticket gambling. Examining these differences could provide insight into the associated risk factors and the differential attraction of these two types of lottery games.

### **The Current Study**

The aim of the current study was to explore possible distinctions between lottery ticket and instant win ticket gambling among Canadian gamblers, using a large national database, namely, the *Canadian Community Health Survey: Mental Health and Well-Being, Cycle 1.2* (CCHS 1.2; Gravel & Beland, 2005). Although some literature suggests differences between lottery ticket and instant win ticket gambling, to our knowledge, no study has compared differences in demographics, problem gambling severity, the number of gambling activities one plays, and related mental health and substance use issues. Given the lack of existing research, we examined these variables in relation to lottery ticket gambling and instant win ticket gambling on an exploratory basis. However, on the basis of the one previous study documented in the literature, we hypothesized that lottery ticket gambling would be associated with being male, whereas instant win ticket gambling would be associated with being female. Additionally, we hypothesized that both lottery ticket gambling and instant win ticket gambling would be associated with higher levels of mental health and substance use problems.

## **Method**

### **Participants**

The appropriate Institutional Review Board reviewed and approved this investigation. Participants included Canadians who participated in the CCHS 1.2. This

national study was conducted by Statistics Canada from May 2002 to late December 2002. Approximately 48,000 dwellings were selected and contacted, with one person per household interviewed. A multi-stage stratified cluster design was used to generate the sample and it was weighted to correspond to the adult population of Canada at the time (approximately 24 million). Individuals 15 years of age and older were invited to participate. With an overall response rate of 77%, a total of 38,492 participants from all 10 Canadian provinces completed the study. To our knowledge, this is the largest database that includes the most recent national data on lottery gambling. Gravel and Beland (2005) provide more information on the CCHS 1.2.

The current study focuses on lottery gambling among Canadian gamblers; therefore, only participants who had gambled at least once in the past year were included in our analyses ( $N = 25,780$ ). That is, participants who did not spend any money on gambling activities in the past year were excluded. Participants who did not spend money on lottery tickets or instant win tickets, but did spend money on another gambling activity (e.g., bingo or casino gambling) were included.

## Measures

**Demographic information.** Participants' reported their age and sex. Marital status was also reported and recoded to differentiate between never married/single (termed single hereafter) and married/common law/divorced/separated/widowed (termed married hereafter). The highest level of education achieved and the total household income were reported. Participants also reported whether there were no children or at least one child less than 12 years of age residing in their home.

**Modified Canadian Problem Gambling Index (CPGI; Ferris & Wynne, 2001).** The original CPGI is a 41-item questionnaire that includes four sections: (1) Gambling Involvement; (2) Problem Gambling Severity Index (PGSI); (3) Problem Gambling Correlates; and (4) Demographics. Ferris and Wynne (2001) found good internal consistency, criterion-related validity, and good test-retest reliability for the CPGI. Nine of the 12 items in the PGSI are scored to generate a problem gambling severity score from 0 to 27. Only sections 1 and 2 were used in the CCHS 1.2.

For the present study, the frequencies of spending money on weekly lottery tickets and on fundraiser tickets were combined into a single item, and the frequencies of spending money on instant win or on daily lottery tickets were combined into a single item. Statistics Canada modified the original CPGI items in this fashion. For example, the Statistics Canada lottery ticket gambling item asks: "In the past 12 months, how often have you bet or spent money on lottery tickets such as 6/49 and Super 7, raffles or fund-raising tickets?" The instant win ticket gambling item asks: "In the past 12 months, how often have you bet or spent money on instant win/scratch tickets or daily lottery tickets (Keno, Pick 3, Encore, Banco, Extra)?" Additionally, these activities were combined because weekly lottery tickets and

fundraiser tickets generally have a longer delay between purchase and determination of win or loss, whereas instant win tickets and daily lottery tickets generally have a short delay between the purchase and determination of win or loss. For simplicity, and to emphasize what would generally be considered the main contributor (i.e., more popular activity) to each item, these two items are referred to as lottery ticket gambling and instant win ticket gambling, respectively. Participants reported whether they spent money on the gambling activity daily, two to five times a week, once a week, two to three times a month, once a month, six to 11 times a year, one to five times a year, or never in the past year. The number of gambling activities that each participant spent money on at least once in the past year was also measured, and scores on this variable ranged from 0 to 13.

**Modified World Mental Health Composite International Diagnostic Interview (WMH-CIDI; Kessler & Üstün, 2004).** The WMH-CIDI assesses 12-month and lifetime criteria for mental disorders and can be scored according to the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV;* American Psychiatric Association, 1994). In the CCHS 1.2 database, criteria for a manic episode (bipolar disorder), major depressive disorder, panic disorder, agoraphobia without history of panic disorder, and social phobia were applied following the *DSM-IV* diagnostic rules. The present analyses used the 12-month criteria for these disorders, as these data are more relevant to an individual's current psychiatric functioning and may be less vulnerable to self-report recall bias.

In addition to assessing mood and anxiety disorders, the modified WMH-CIDI was also used to assess alcohol and illicit substance dependence. Alcohol dependence was measured by using the short-form Alcohol Dependence Scale from the WHM-CIDI, and participants had to report at least three symptoms of alcohol dependence from the revised third edition of the *DSM* (American Psychiatric Association, 1987) in the past 12 months. Illicit substance dependence was defined by meeting *DSM-IV* criteria for drug dependence in the past 12 months for any illicit substance or combination of substances.

### **Statistical Analysis**

The relationships between the demographic variables, lottery ticket gambling, and instant win ticket gambling were examined by using bivariate correlational analyses. Two hierarchical linear regression equations were used to examine lottery ticket gambling and instant win ticket gambling as independent predictors of problem gambling severity. In both equations, the demographic variables were included at the first step to ensure that the lottery games were associated with problem gambling, independent of the demographic predictors. In the first regression equation, frequency of lottery ticket gambling was entered alone at the second step and frequency of instant win ticket gambling was entered alone at the third step. In the second regression equation, frequency of instant win ticket gambling was

entered alone at the second step and frequency of lottery ticket gambling was entered alone at the third step. Next, two hierarchical linear regression equations were used to examine lottery ticket gambling and instant win ticket gambling as independent predictors of the number of gambling activities played in the past year. The demographic variables, frequency of lottery ticket gambling, and frequency of instant win ticket gambling were entered into the two regression equations following the same procedure as described above. Finally, bivariate correlational analyses were used to examine the relationships of the mental disorder and substance dependence variables to frequency of lottery ticket gambling, frequency of instant win ticket gambling, and problem gambling severity.

Statistical weights, as supplied by Statistics Canada, were applied in generating all estimated sample sizes and percentages. This weighting remains appropriate even when some participants are excluded (i.e., exclusion of non-gamblers). In addition, guidelines from Statistics Canada were used to generate 95% confidence intervals (95% CIs) for the estimates, and the rules provided by Statistics Canada for the release of estimates were followed when using the CCHS 1.2 data. To avoid violating the assumption of independence, we rescaled the weighting variable so that the average weight was equal to 1 for all statistical analyses, as suggested by Statistics Canada. Given the large sample size, all test statistics were evaluated at the .001 alpha level; we focus on effect sizes of “small” or greater magnitude in our discussion of the results, on the basis of Cohen’s (1992) guidelines (i.e.,  $r \geq .10$ ).

## Results

### Frequency of Lottery Ticket and Instant Win Ticket Gambling

Most participants spent money on lottery tickets at least once in the past year. Applying the statistical weights, more than 30% of Canadians who spent money on at least one gambling activity purchased lottery tickets at least once a week or more, and more than 45% of Canadians who spent money on at least one gambling activity purchased lottery tickets once a month or more. Only 15.7%, 95% CI [15.0, 16.4], of Canadians who spent money on at least one gambling activity did not purchase lottery tickets in the past year.

The proportion of participants who spent money on instant win tickets was considerably lower than the proportion who spent money on lottery tickets. Specifically, less than 15% of Canadians who spent money on at least one gambling activity purchased instant win tickets at least once a week or more, whereas 52.2%, 95% CI [51.8, 52.6], of Canadians who spent money on at least one gambling activity had not purchased instant win tickets in the past year. Despite differences in the popularity of these gambling activities, the frequency of spending money on these forms of gambling was positively correlated ( $r = .27$ ,  $p < .001$ ).

### Demographic Variables

The relationships between the demographic variables and the frequency of spending money on lottery tickets and instant win tickets are displayed in Table 1. Bivariate correlations indicated that lottery ticket gambling was correlated with being older, being male, and being married. However, instant win ticket gambling was correlated only with lower levels of education.

### Problem Gambling Severity

Bivariate correlational analyses indicated that a higher frequency of lottery ticket gambling and a higher frequency of instant win ticket gambling were correlated with greater problem gambling severity (see Table 2). The first hierarchical regression indicated that frequency of instant win ticket gambling independently predicted 4% of the variance in problem gambling severity beyond that accounted for by the demographic variables and frequency of lottery ticket gambling (Step 3a). The second regression equation indicated that lottery ticket gambling did not independently predict variance in problem gambling severity beyond that accounted for by the demographic variables and frequency of instant win ticket gambling (Step 3b).

### Number of Gambling Activities

A higher frequency of lottery ticket gambling and a higher frequency of instant win ticket gambling were related to a greater number of gambling activities played in the past year (see Table 3). The first hierarchical regression indicated that frequency of instant win ticket gambling independently predicted 13% of the variance in the number of gambling activities played beyond that accounted for by the demographic variables and frequency of lottery ticket gambling (Step 3a). The second regression equation indicated that lottery ticket gambling did not independently predict variance in the number of gambling activities played beyond that accounted for by the demographic variables and frequency of instant win ticket gambling (Step 3b).

Table 1  
*Bivariate Correlations Between the Demographic Variables, Frequency of Lottery Ticket Play, and Frequency of Instant Win Ticket Play*

Variable	Lottery tickets	Instant win tickets
Age	.27*	-.01
Sex (being male)	.10*	-.04*
Marital status (being married)	.23*	.01
Education	-.07*	-.11*
Household income	-.01	-.05*
Presence of children in home	-.04*	-.01

\* $p < .001$ .

Table 2  
*Summary of Regression Analyses Predicting Problem Gambling Severity*

Variable	<i>R</i>	Adjusted <i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change	<i>t</i>	<i>r</i>	<i>pr</i>
Step 1	.09	.01	.01*			
Age				-5.12*	-.04*	-.04*
Sex (being male)				-7.84*	.06*	.06*
Marital status (being married)				.36	-.04	.00
Education				-3.34	-.03	-.03
Household income				-3.68*	-.03*	-.03*
Presence of children in home				-3.29	-.02	-.03
Step 2a	.13	.02	.01*			
Lottery ticket play				12.52*	.10*	.10*
Step 3a	.23	.06	.04*			
Instant win ticket play				25.11*	.22*	.19*
Step 2b	.23	.06	.05*			
Instant win ticket play				28.10*	.22*	.22*
Step 3b	.23	.06	.00			
Lottery ticket play				1.89	.09	.02

*Note.* *r* = zero-order correlation; *pr* = partial correlation.  
 \**p* < .001.

Problem gambling severity was also positively correlated with participating in more

Table 3  
*Summary of Regression Analyses Predicting Number of Gambling Activities*

Variable	<i>R</i>	Adjusted <i>R</i> <sup>2</sup>	<i>R</i> <sup>2</sup> change	<i>t</i>	<i>r</i>	<i>pr</i>
Step 1	.24	.06	.06*			
Age				-21.32*	-.19*	-.14*
Sex (being male)				-10.84*	-.08*	-.07*
Marital status (being married)				-5.98*	-.15*	-.04*
Education				-6.91*	-.00*	-.05*
Household income				14.00*	.10*	.09*
Presence of children in home				-10.15*	-.04*	-.07*
Step 2a	.28	.08	.02*			
Lottery ticket play				22.51*	.09*	.15*
Step 3a	.45	.20	.13*			
Instant win ticket play				60.71*	.38*	.37*
Step 2b	.45	.20	.14*			
Instant win ticket play				64.96*	.38*	.39*
Step 3b	.45	.20	.00			
Lottery ticket play				6.62*	.09*	.04*

*Note.* *r* = zero-order correlation; *pr* = partial correlation.  
 \**p* < .001

gambling activities in the past year ( $r = .26, p < .001$ ). Partial correlation analysis was conducted to examine whether problem gambling severity accounts for the relationship between higher frequency of instant win ticket gambling and more gambling activities played in the past year. However, controlling for problem gambling severity had no appreciable effect on this relationship ( $pr = .39, p < .001$ ).

### **Mental Disorders and Substance Dependence**

Contrary to our hypothesis, frequency of lottery ticket gambling and frequency of instant win ticket gambling revealed no meaningful correlations with any of the mental health and substance dependence variables. Problem gambling severity did have a notable positive correlation with alcohol dependence ( $r = .12, p < .001$ ).

### **Discussion**

The purpose of this study was to explore possible distinctions between lottery ticket gambling and instant win ticket gambling among Canadian gamblers. A large proportion of gamblers played lottery games at least occasionally (i.e., more than 45% played once a month or more), and lottery tickets were more frequently played than instant win tickets (i.e., more than 30% vs. less than 15% played at least once a week or more). Some evidence from the gambling literature supports these rates, and previous estimates of general lottery gambling (i.e., including both lottery tickets and instant win tickets) have ranged from 49% to 66% in Canada and the United States (Barnes et al., 2011; Marshall & Wynne, 2003; Welte et al., 2002). Although both lottery tickets and instant win tickets have relatively low expected returns, it is possible that gamblers play lottery tickets more frequently than they do instant win tickets because of the higher potential reward associated with lottery tickets.

Some differences were noted between the profiles of those who buy lottery tickets versus those who buy instant win tickets. More specifically, lottery tickets were more frequently played by gamblers who were older, male, and married, and instant win tickets were more frequently played by gamblers who were less educated. These results further support the notion that the previous profile of the white, middle-aged, middle-class male lottery gambler (Lorenz, 1990) has expanded across many demographic variables. Furthermore, the present results partially support the findings of el-Guebaly et al. (2006) and our hypothesis that males are more attracted to lottery tickets and females are more attracted to instant win tickets. Our results indicate no significant difference between the frequencies that males and females play instant win tickets. However, instant win tickets were played more by gamblers with lower levels of education, which is consistent with previous findings suggesting that lottery gambling is related to lower levels of education and to a misunderstanding of lottery probability (Croups, Haddock, & Webley, 1998). Overall, these demographic differences suggest some distinctions between lottery ticket gambling and instant win ticket gambling among Canadian gamblers, in

which lottery tickets are played more frequently by a more specific demographic profile (i.e., older, married, and male).

The existing literature reports that individuals with gambling problems are more likely to participate in the lottery than are those without gambling problems (Felsher et al., 2004; Hraba et al., 1990). This study examined the extent to which both lottery ticket gambling and instant win ticket gambling predict problem gambling severity. Frequency of instant win ticket gambling independently predicted variance in problem gambling severity beyond that accounted for by the demographic variables and lottery ticket gambling; however, frequency of lottery ticket gambling did not independently predict problem gambling severity. It is possible that problem gamblers are more attracted to instant win tickets than lottery tickets because instant win tickets provide immediate feedback. Some authors have even described instant win tickets as “paper slot machines” (Griffiths, 2002). Therefore, instant win tickets might be considered a more exciting form of lottery gambling, which may help explain why it attracts a different type of gambler than lottery tickets do. Research indicates that immediate rewards are especially enticing to frequent gamblers, as these types of gamblers tend to have high levels of impulsivity and are more likely to choose smaller amounts of money that are available immediately over delayed larger payouts (Michalczuk, Bowden-Jones, Verdejo-Garcia, & Clark, 2011). However, this discussion goes beyond our data and may be a relevant question for future research.

Frequency of instant win tickets independently predicted variance in the number of gambling activities played in the past year beyond that accounted for by the demographic variables and lottery ticket gambling. Similar to the findings found with problem gambling severity, frequency of lottery ticket gambling did not independently predict the number of gambling activities played. Problem gambling severity was related to participating in more gambling activities, which is consistent with prior research suggesting that those with gambling problems gamble at a wide variety of games and are known to “bet on anything” (Gray, 2011). Furthermore, the current findings suggest that instant win gamblers engage in more gambling activities, beyond what is predicted by the level of problem gambling severity. In contrast, lottery ticket gambling is not associated with the number of other forms of gambling in which an individual participates.

Our results indicate that lottery gambling and problem gambling severity are not significantly associated with mental disorders or substance dependence among Canadian gamblers, with the exception of a relationship between alcohol dependence and problem gambling severity. Although these findings are inconsistent with previous research examining lottery gamblers, similar results were found in general problem gamblers. Rush, Bassani, Urbanoski, and Castel (2008) found that the presence of a mood or anxiety disorder did not predict higher rates of problem gambling; however, the presence of a substance use disorder did predict higher rates of problem gambling. Given the addictive nature of gambling and

substance use disorders, this connection is not surprising. It is also possible that our findings differ from other studies that find a relationship between lottery gambling and mood and anxiety disorders (e.g., Hendriks et al., 1997) because of methodological differences. The use of validated clinical interviews, such as those in the present study and in the study by Rush et al. (2008), rather than self-report measures as used by Hendriks et al. (1997), might in part explain these apparent inconsistencies. Additional research in this area could be useful to further clarify any relationships that might exist between lottery gambling and mental disorders.

The current findings provide converging evidence suggesting that notable distinctions exist between lottery ticket gambling and instant win ticket gambling among Canadian gamblers. These findings suggest that although lottery ticket gambling is not independently associated with problem gambling or participating in more gambling activities, instant win tickets should not be considered a harmless or low-risk form of gambling, as the latter is independently associated with these outcomes. Treatment providers might find it useful to become aware of the differences between the types of lottery gambling to inform assessment and treatment of problem lottery gambling. This study builds on and contributes new information to the current lottery literature. To our knowledge, this is the first study to examine the relationships between these forms of lottery gambling and problem gambling variables, independent of other lottery activity. Additionally, the current findings make novel contributions to the lottery gambling area by examining the demographic profiles that these forms of lottery gambling may attract, as well as the number of other gambling activities that these individuals participate in.

### **Limitations and Future Research**

The major limitations of this study include the use of secondary data and the age of the data set. However, the CCHS 1.2 provides some of the most recent Canadian national data on lottery gambling, particularly lottery tickets versus instant win tickets. The present findings are relevant to the current literature, considering this is the first study (to our knowledge) to explore the demographic, problem gambling severity, number of gambling activities, and mental health distinctions between lottery ticket gambling and instant win ticket gambling among Canadian gamblers. Although lottery gambling in Canada has likely changed since 2005 (e.g., the introduction of more lottery games), this study may help lay the landscape for examining changes in lottery gambling over time. Thus, the current results will be particularly helpful for comparison data when Statistics Canada releases the next cycle of the Canadian Community Health Survey. In view of the increasing use of the Internet for gambling (Wood & Williams, 2009), it might be relevant to examine lottery ticket and instant win ticket gambling in relation to online gambling. An updated national data set, which includes information on Internet gambling, may be helpful for future research. Additional research might also examine whether the lure of an immediate reward associated with instant win tickets is a risk marker for developing problem gambling issues. Finally, the relationships between instant win

tickets, problem gambling, and the number of gambling activities played in the past year raises questions about whether instant win ticket gambling leads to the onset of problem gambling, or whether it leads to increases in frequency only after the gambling problem has already developed.

## Conclusions

Overall, there are some notable distinctions between lottery ticket gambling and instant win ticket gambling among Canadian gamblers. Lottery ticket gambling appears to attract a more specific demographic profile (i.e., older, married, and male) than does instant win ticket gambling. Instant win tickets appear to be played by a diverse group of Canadian gamblers, but tend to be played more by individuals with lower education levels. Frequency of instant win ticket gambling independently predicts problem gambling severity and participating in more gambling activities; however, frequency of lottery ticket gambling does not appear to have a meaningful independent contribution to either of these outcomes. Future researchers should consider avoiding the grouping of lottery ticket gambling and instant win ticket gambling into a general “lottery gambling” category, as these types of lottery games appear to attract different types of gamblers.

## References

- American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., revised). Washington, DC: Author.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Ariyabuddhiphongs, V. (2011). Lottery gambling: A review. *Journal of Gambling Studies*, 27, 15–33. doi:10.1007/s10899-010-9194-0
- Barnes, G., Welte, J., Tidwell, M.-C., & Hoffman, J. (2011). Gambling on the lottery: Sociodemographic correlates across the lifespan. *Journal of Gambling Studies*, 27, 575–586. doi:10.1007/s10899-010-9228-7
- Cohen, J. (1992). A power-primer. *Psychological Bulletin*, 112, 155–159. doi:10.1037/0033-2909.112.1.155
- Croups, E., Haddock, G., & Webley, P. (1998). Correlates and predictors of lottery play in the United Kingdom. *Journal of Gambling Studies*, 14, 285–303. doi:10.1023/A:1022009726406
- el-Guebaly, N., Patten, S. B., Currie, S., Williams, J. V. A., Beck, C. A., Maxwell, C. J., & Wang, J. L. (2006). Epidemiological associations between gambling

behavior, substance use & mood and anxiety disorders. *Journal of Gambling Studies*, 22, 275–287. doi:10.1007/s10899-006-9016-6

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, 109–125. doi:10.1080/14459790412331296956

Ferris, J., & Wynne, W. (2001). *The Canadian Problem Gambling Index: Final report*. Ottawa, ON: Canadian Centre on Substance Abuse. Retrieved from <http://www.ccsa.ca/2003%20and%20earlier%20ccsa%20documents/ccsa-008805-2001.pdf>

Frost, R. O., Meagher, B. M., & Riskind, J. H. (2001). Obsessive-compulsive features in pathological lottery and scratch-ticket gamblers. *Journal of Gambling Studies*, 17, 5–19. doi:10.1023/A:1016636214258

Giacopassi, D., Nichols, M. W., & Stitt, B. G. (2006). Voting for a lottery. *Public Finance Review*, 34, 80–100. doi:10.1177/1091142105282598

Gravel, R., & Beland, Y. (2005). The Canadian community health survey: Mental health and well-being. *Canadian Journal of Psychiatry*, 50, 573–579. Retrieved from <http://publications.cpa-apc.org/browse/sections/0>

Gray, R. (2011). *New Zealanders' participation in gambling: Results from the 2010 health and lifestyles survey*. Wellington, New Zealand: Health Sponsorship Council. Retrieved from: [www.hsc.org.nz/sites/default/.../Gambling\\_Participation\\_final-web.pdf](http://www.hsc.org.nz/sites/default/.../Gambling_Participation_final-web.pdf)

Griffiths, M. (2002). Are lottery scratchcards a “hard” form of gambling? *Journal of Gambling Issues*, 7. doi:10.4309/jgi.2002.7.8

Haisley, E., Mostafa, R., & Loewenstein, G. (2008). Subjective relative income and lottery ticket purchases. *Journal of Behavioral Decision Making*, 21, 283–295. doi:10.1002/bdm.588

Hendriks, V. M., Meerkerk, G.-J., Van Oers, H. A. M., & Garretsen, H. F. L. (1997). The Dutch instant lottery: Prevalence and correlates of at-risk playing. *Addiction*, 92, 335–346. doi:10.1046/j.1360-0443.1997.9233359.x

Hraba, J., Mok, W., & Huff, D. (1990). Lottery play and problem gambling. *Journal of Gambling Studies*, 6, 355–377. doi:10.1007/BF01014590

Kessler, R. C., & Üstün, T. B. (2004). The World Mental Health (WMH) Survey Initiative Version of the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI). *International Journal of Methods in Psychiatric Research*, 13, 93–121. doi:10.1002/mpr.168

- Lang, K., & Omori, M. (2009). Can demographic variables predict lottery and pari-mutuel losses? An empirical investigation. *Journal of Gambling Studies*, *25*, 171–183. doi:10.1007/s10899-009-9122-3
- LaPlante, D. A., Gray, H. M., Bosworth, L., & Shaffer, H. J. (2010). Thirty years of lottery public health research: Methodological strategies and trends. *Journal of Gambling Studies*, *26*, 301–329. doi:10.1007/s10899-010-9185-1
- Lorenz, V. C. (1990). State lotteries and compulsive gambling. *Journal of Gambling Studies*, *6*, 383–396. doi:10.1007/BF01014592
- Marshall, K., & Wynne, H. (2003). Fighting the odds. *Perspectives on Labour and Income*, *4*, 5–13. Retrieved from <http://www.statcan.gc.ca/pub/75-001-x/index-eng.htm>
- Michalczuk, R., Bowden-Jones, H., Verdejo-Garcia, A., & Clark, L. (2011). Impulsivity and cognitive distortions in pathological gamblers attending the UK National Problem Gambling Clinic: A preliminary report. *Psychological Medicine*, *29*, 2625–2635. doi:10.1017/S003329171100095X
- O'Dwyer, A.-M., & Sheppard, N. P. (1993). Major depressive illness with secondary pathological gambling: Case report and literature review. *Irish Journal of Psychological Medicine*, *10*, 36–37. Retrieved from <http://journals.cambridge.org/action/displayJournal?jid=IPM>
- Papoff, K. M., & Norris, J. E. (2009). Instant ticketing purchasing by Ontario baby boomers: Increasing risk for problem gamblers. *Journal of Gambling Studies*, *25*, 185–199. doi:10.1007/s10899-009-9117-0
- Rogers, P. (1998). The cognitive psychology of lottery gambling: A theoretical review. *Journal of Gambling Studies*, *14*, 111–134. doi:10.1023/A:1023042708217
- Rush, B. R., Bassani, D. G., Urbanoski, K. A., & Castel, S. (2008). Influence of co-occurring mental and substance use disorders on the prevalence of problem gambling in Canada. *Addiction*, *103*, 1847–1856. doi: 10.1111/j.1360-0443.2008.02338.x
- Welte, J., Barnes, G., Wieczorek, W., Tidwell, M.-C., & Parker, J. (2002). Gambling participation in the U.S.: Results from a National Survey. *Journal of Gambling Studies*, *18*, 313–337. doi:10.1023/A:1021019915591
- Wood, R. T., & Williams, R. J. (2009). *Internet gambling: Prevalence, patterns, problems, and policy options*. Final report prepared for the Ontario Problem Gambling Research Centre, Guelph, Ontario. Retrieved from: [www.abc.net.au/mediawatch/transcripts/0909\\_originalreport.pdf](http://www.abc.net.au/mediawatch/transcripts/0909_originalreport.pdf)

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