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## **Gambling-Related Harms Attributable to Lotteries Products**

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## Short Communication

### Gambling-Related Harms Attributable to Lotteries Products

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**Short Communication**  
**Gambling-Related Harms Attributable to Lotteries Products**

**Abstract**

Lotteries products (lottery tickets and scratch tickets) are the most popular forms of gambling worldwide, however little research has investigated whether these products are associated with gambling-related harm. The limited available research suggests these products are linked to problematic gambling behaviors and a range of resulting negative outcomes, with certain sub-groups appearing to be more vulnerable to experiencing harms. The present study examined risk of gambling-related harm (measured by the Problem Gambling Severity Index) from lotteries products use in an Australian sample of lotteries-only gamblers (n = 540). Additionally, the study investigated whether risk varied according to a range of sociodemographic and behavioral characteristics (age, gender, household income, location (rural vs. metropolitan), employment status, alcohol consumption, smoking status, frequency of e-cigarette use, frequency of scratch ticket use, frequency of lottery ticket use, expenditure on scratch tickets, and expenditure on lottery tickets). Almost one-third of the sample was found to be at some level of gambling-related risk due to their use of lotteries products. Younger respondents, males, current smokers, e-cigarette users, and those who purchase scratch tickets more frequently were more likely to report problematic use of lotteries products. Policy makers should enact strategies to prevent and reduce harms resulting from lotteries products, especially among the identified at-risk groups.

**Key words:** Gambling; Lottery; Scratch-Tickets; Problem Gambling; Prevention; Predictive factors.

## 1.0 Introduction

Lotteries products are the most commonly used form of gambling worldwide<sup>(1)</sup>. They are often sold by state-owned institutions, generating significant amounts of revenue for governments and charities<sup>(1,2)</sup>. The two main lotteries products are lottery tickets and scratch tickets (also known as instant lotteries)<sup>(3)</sup>. The use of these products is so common in many countries that most people do not recognize them as a form of gambling (for a review see Ariyabuddhiphongs<sup>(3)</sup>). This view is perpetuated by the promotional activities of lotteries institutions that encourage the idea that using these products is a normal behavior that has additional benefits for the community in the form of funding important social infrastructure<sup>(4,5)</sup>. It has been suggested that due to their widespread use, lotteries products may result in higher levels of population-level gambling harm than is currently recognized<sup>(1)</sup>. Furthermore, people from lower socioeconomic backgrounds spend a greater proportion of their income on lotteries products, leading to criticisms that lotteries products are a form of regressive taxation<sup>(2,6)</sup>.

Gambling-related harm refers to negative outcomes that can result from gambling, including financial difficulties, psychological problems, and issues with interpersonal relationships<sup>(7)</sup>. Research investigating gambling-related harms tends to focus on alternative gambling products that are more commonly understood to be associated with acute gambling issues (e.g., sport betting, casino games, and electronic gambling machine)<sup>(8)</sup>. Little research has specifically investigated the negative outcomes associated with using lotteries products, however there is some indication that these products have the potential to be addictive and cause harm<sup>(9-11)</sup>. Costes et al.'s<sup>(1)</sup> two-country (France and Canada) study of gamblers who only use lotteries products found evidence of gambling-related harm, especially among participants who were male, younger, less educated, unemployed, of lower socio-economic status, excessive alcohol consumers, and illicit drug users. Some pathological gamblers cite their lottery and scratch ticket use as their primary reason for seeking help<sup>(12,13)</sup>.

The proportions and profiles of at-risk lotteries-only gamblers in Costes et al.'s study<sup>(1)</sup> varied between Canada and France, highlighting the need to examine how issues resulting from these products differ between countries. The context of the present study is Australia, which has the highest per capita expenditure on gambling in the world<sup>(14)</sup>. It is estimated that around 17% of Australian adults who gamble experience difficulties associated with their gambling behaviors<sup>(15)</sup>. Lotteries products are the most popular form of gambling in Australia; 30% of adults gamble on the lottery and 9% purchase scratch tickets at least

once per month<sup>(15)</sup>. After winnings are taken into account, Australians lose more than \$2billion per year on lotteries products<sup>(16)</sup>.

To contribute to the small but growing body of literature examining harms associated with lotteries products, the present study aimed to investigate (i) the relationship between lotteries use and harm in an Australian sample and (ii) whether specific population groups are more likely to experience harms associated with lotteries products. The results can inform harm-minimization strategies designed to address Australia's high levels of gambling and gambling-related harm, and may provide insights of value for other countries with similar gambling profiles.

## **2.0 Method**

### **2.1 Sample**

As part of a larger study, an online survey was administered to a nationally representative sample of Australian adults (n = 2112) by Pureprofile, an ISO-accredited web panel provider. Respondents reported their experiences of gambling-related harm in general rather than specifying the harm attributable to each form of gambling that they used. Therefore, to examine harm specifically associated with lotteries products, the focus of the present study was on the sub-set of respondents who reported gambling exclusively on lottery and/or scratch tickets (n = 540, 45% of gamblers in the sample). The study was approved by a University Human Research Ethics Committee. The demographic characteristics of the sample are shown in Table 1.

*Insert Table 1 about here*

### **2.2 Survey Instrument**

Gambling-related harm was measured using the Problem Gambling Severity Index (PGSI), which assesses whether people experience health, financial, and/or social issues resulting from their gambling<sup>(17)</sup>. Respondents were asked to report their demographic characteristics (age, gender, location (rural vs. metropolitan), household income, and employment status). Being employed was defined as being in full/part-time employment, self-employed, or studying. Included health risk factors identified in previous research were alcohol consumption and smoking status<sup>(1)</sup>.

As per the Australian Institute of Health and Welfare<sup>(18)</sup>, alcohol intake was calculated by asking “*In the last 12 months, how often did you have an alcoholic drink of any kind?*”

(response options 1 (less than once per month) to 7 (everyday)) and “*On a day that you have an alcoholic drink, how many standard drinks do you usually have?*” (response options 1 (half a drink) to 11 (20 or more drinks)). Respondents were categorized as being a current smoker if they answered yes in response to “*Do you smoke tobacco cigarettes regularly, that is - at least one cigarette a day or seven per week?*” (response options Yes/No)” (as per Australian Bureau of Statistics<sup>(19)</sup>). The frequency of using and expenditure on specific gambling products (e.g., lottery, scratch tickets, sports betting, poker machines, and casino games) was assessed by asking “*In a typical month, roughly how often do you play each of the following?*” (response options 1 (never) to 5 (more than once a week), and “*How much per month (on average)?*” (open response format)<sup>(20)</sup>. E-cigarette use was included as an additional factor due to recent evidence of an association between the use of these products and gambling-related harm<sup>(21)</sup>. The frequency of e-cigarette use was assessed on a scale ranging from 1 (never) to 9 (everyday) (as per Australian Institute of Health and Welfare<sup>(18)</sup>).

### **2.3 Analyses**

The sub-sample members were categorized according to the PGSI’s four level scoring system of ‘no risk’, ‘low risk’, ‘moderate risk’, and ‘problem gamblers’<sup>(17)</sup>. An ordinary least squares multiple regression was used to identify factors associated with gambling harm in the lotteries-only gamblers group. The criterion variable was the respondents’ PGSI scores. The predictor variables (age, gender, household income, location (rural vs. metropolitan), employment status, drinks per month, smoking status, frequency of e-cigarette use, frequency of scratch ticket use, frequency of lottery ticket use, expenditure on scratch tickets, and expenditure on lottery tickets) were entered into the model simultaneously.

### **3.0 Results**

As shown in Table 1, the proportion of gamblers in the lotteries-only sample meeting the criteria for each PGSI category were as follows: 71% no-risk gamblers, 17% low-risk gamblers, 8%, moderate-risk gamblers, and 4% problem gamblers. The results of the regression analysis (shown in Table 2) indicated that the assessed factors accounted for a significant proportion of the variance in gambling-related harm ( $F(11, 469) = 4.93, p < .001$ , adjusted  $R^2 = .083$ ). Younger respondents, males, current smokers, those who use e-cigarettes more frequently, and those who purchase scratch tickets more frequently were more likely than other respondents to have higher scores on the PGSI.

*Insert Table 2 about here*

#### 4.0 Discussion

The results of the present study suggest lotteries products can cause at least some level of harm, which is consistent with the outcomes of the limited available research in this area<sup>(1,11,22)</sup>. Almost one-third of the lotteries-only gamblers surveyed were at some level of gambling-related risk, and 4% of the sample met the problem gambling criteria (which is double the rate that has been observed in the general Australian gambling population<sup>(15)</sup>). The proportion of moderate risk and problem lotteries-only gamblers in the present sample was also higher than observed in Costes et al.'s<sup>(1)</sup> French and Canadian samples. These findings support the contention that lottery and scratch tickets are not benign forms of gambling<sup>(3,5,23)</sup>.

The regression analysis identified several factors that were significantly associated with gambling issues as indicated by PGSI scores. The frequency of using scratch tickets was more strongly associated with gambling harm than the frequency of using lottery tickets, which has also been observed in previous research<sup>(11,24)</sup>. Furthermore, younger people, males, smokers, and more frequent e-cigarette users were more likely than other respondents to report gambling-related harm due to their use of lotteries products, indicating that these population sub-groups are more vulnerable to developing problematic lottery gambling behaviors. Males and younger people have previously been shown to use lotteries products more intensely<sup>(1,25)</sup>, and all of these factors have been linked to an increased risk of experiencing gambling problems across various gambling products<sup>(21,26,27)</sup>. The latter suggests that the profiles of problematic lotteries-only gamblers are similar to the profiles of those who are prone to developing gambling issues in general, and therefore that lotteries products, particularly scratch tickets, are not substantively different to other gambling products that are more widely acknowledged as being associated with gambling-related harm.

Several explanations can account for the identified associations between the assessed factors and gambling harm. First, scratch tickets have features that make them appealing to problematic gamblers<sup>(28)</sup>; they instantly let the user know if they have won a prize and are designed to give users the impression that they were close to winning (i.e., the 'near-miss' effect), both of which can increase the desire to purchase more tickets<sup>(12,28)</sup>. Second, males, young people, smokers, and e-cigarettes users are likely to be more susceptible to developing gambling problems due to their increased propensities for risk taking relative to the general population<sup>(21,26,29,30)</sup>. Biological, psychological, and social factors combine to make members of these groups more prone to engaging in hazardous behaviors<sup>(26,30,31)</sup>. The results of this study suggest that these factors also increase the likelihood of high-risk use of lotteries products.

The present findings highlight the challenges that will be associated with reducing harm from lotteries products among members of vulnerable groups in an environment in which these products are readily available, heavily marketed, and exempt from many advertising restrictions that are placed on ‘conventional’ forms of gambling<sup>(32)</sup>. Based on the growing evidence linking scratch tickets to adverse gambling outcomes, these products should be a particular focus of harm-minimization efforts targeted at those who are most susceptible, especially young people, males, smokers, and e-cigarette users. The results also lend support to calls for regulations relating to: (i) restrictions on the timing, location, and content of advertisements for lotteries products to reduce exposure among vulnerable groups<sup>(33,34)</sup>; (ii) mandating the provision of information on the likelihood of winning a major prize to overcome a lack of understanding about odds<sup>(3)</sup>; and (iii) prohibiting scratch ticket features that encourage users to continue gambling, such as ‘near miss’ indicators<sup>(28)</sup>.

The present study had several limitations. While the sample was representative across age, gender, and socioeconomic status groups, the use of web panels introduces sampling biases on other characteristics, especially in terms of gambling prevalence<sup>(35)</sup>. The sample was also limited to adults, and therefore cannot provide information on the effect that lotteries products have on adolescents. Given that adolescents are thought to be particularly susceptible to developing gambling issues associated with lotteries products<sup>(22)</sup>, future research should include younger participants where possible. It would also be useful to explore additional factors potentially associated with problematic lotteries gambling, such as illicit drug consumption and parental gambling behaviors<sup>(24,36)</sup>. Finally, the present study did not compare gambling harm resulting from lotteries products to other gambling products. Regression analyses have typically been used to examine the harm that is attributable to different gambling products, however using this type of analysis can be problematic because the frequency of using different non-lotteries products is often highly correlated<sup>(37)</sup>. This multicollinearity can falsely inflate the strength of observed relationships<sup>(37)</sup>. Furthermore, as alternative gambling products are usually strongly associated with gambling-harm, they often mask any harm that is caused by lotteries products. Therefore, the present study focused on lotteries-only gamblers to examine harms that are associated with these products.

#### **4.1 Conclusion**

Lotteries products are typically perceived as a being innocuous, yet these results add to an increasing body of evidence showing that they are associated with harm in a substantial minority of users<sup>(1,8)</sup>. While lotteries institutions often bolster government revenue and fund



community projects<sup>(2,4)</sup>, this comes at a cost that appears to be borne disproportionately by specific population sub-groups. Policy makers need to act to minimize the harms that lotteries institutions bring to the community and ensure that their products are sold in a responsible manner.

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### **Declaration of interests**

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The remaining authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Table 1

## Sample Profile

Demographic Attribute	Total Sample (n = 2112) (%)	Lotteries-only Gamblers (n = 540) (%)
<i>Gender</i>		
Male	49	46
Female	51	54
<i>Age</i>		
M (SD)	47 (17)	52 (16)
18-34	31	19
35-54	34	34
55+	35	47
<i>Location</i>		
Metropolitan	67	65
Regional	33	35
<i>Regularly purchase</i>		
Scratch tickets	20	35
Lottery tickets	43	91
<i>Monthly expenditure on</i>		
Scratch tickets M (SD) <sup>a</sup>	22 (38)	18 (73)
Lottery tickets M (SD) <sup>a</sup>	44 (43)	42 (44)
<i>PGSI</i>		
No risk	73	71
Low risk	12	17
Moderate risk	8	8
Problem gamblers	8	4

Note: Percentages may not add to 100% due to rounding.

<sup>a</sup>Excluding respondents who do not typically spend money on this product. Extreme outliers were identified and removed from the sample by inspecting boxplot distributions.

Table 2

*PGSI scores regressed on the predictor variables (n = 540)*

Factor	B [95% CI]	$\beta$
Age	-.04 [-.06, -.02]	-.20***
Gender (male)	.74 [.14, 1.34]	.11*
Metropolitan residence	.40 [-.20, 1.00]	.06
Household income	-.03 [-.15, .09]	-.03
Active employment	.11 [-.61, .82]	.02
Drinks per week	<-.01 [-.01, .01]	-.04
Current smoker	.91 [.03, 1.79]	.10*
Frequency of e-cigarette use	.24 [.01, .47]	.10*
Frequency of scratch ticket use	.57 [.24, .90]	.15**
Frequency of lottery use	.08 [-.26, .42]	.03
Expenditure on scratch tickets	<-.01 [-.01, .01]	-.01
Expenditure on lottery	<.01 [-.01, .01]	.04

*Note: Unstandardized (B) and Standardized regression coefficients ( $\beta$ ) are provided. Standardized regression coefficients are standardized to the units of measurement.*

*\*p < .05. \*\*p < .01. \*\*\*p < .001.*