



The Longitudinal Study
of Australian Children

What is the link between video gaming and gambling?

Growing Up in Australia
Snapshot Series – Issue 7

October 2022

WHAT DO WE KNOW?

Video gaming is a popular form of entertainment in Australia. Gaming and gambling are defined as separate activities but they share similarities in appearance, interactive features and elements of skill and chance. Games that structurally resemble traditional gambling activities ('gambling-like' video games) are commonly referred to as 'simulated gambling'. Simulated gambling appears in many forms in video games but social casino games are the most common.

Previous research has found a link between video gaming and gambling. Simulated gambling products have the potential to normalise and encourage monetary gambling, especially among children and young people, yet few studies have examined this relationship. Gambling can lead to a range of negative consequences or gambling harms, including financial, relationship, social, health and emotional/psychological harms.

WHAT CAN WE LEARN?

This snapshot examines the link between playing video games during adolescence and gambling as a young adult. It explores whether young people who played video games frequently or played certain types of games in their adolescent years started real money gambling¹ when they reached the legal age for gambling in Australia (18 years). We examine three main questions: (1) What are the effects of daily video gaming on real money gambling? (2) What are the effects of playing simulated gambling games on real money gambling? (3) What are the other main risk factors associated with gambling among young people?

¹ In this snapshot, gambling refers to spending money on the following products in the past 12 months: (1) instant scratch tickets ('scratchies'); (2) bingo; (3) lotto or lottery games; (4) Keno; (5) private betting with friends or family; (6) poker; (7) casino table games; (8) poker machines ('pokies'); (9) betting on horse or dog races; and (10) betting on sports.

KEY FINDINGS

1

Young people who played video games daily during adolescence (aged 16–17 years) were not necessarily more likely to gamble as young adults (aged 18–19 years), but we found a link between playing simulated gambling games (such as Zynga Poker, Slotomania and Big Fish Casino) and real money gambling.

Young people who played simulated gambling games during adolescence (aged 16–17) had a 40 percentage points higher probability of spending real money on gambling as young adults (aged 18–19). By product, we found a higher probability of 29 percentage points for betting on horse or dog racing, of 26 percentage points for gambling on casino table games, and of 21 percentage points for betting on sports as young adults.

2

3 Parent gambling and higher levels of alcohol consumption were also found to be risk factors for young adults' gambling. Simulated gambling games appear to have more effect on young men than young women.

4 At 16–17 years (under-age), 2% of young Australians were classified as being at risk of, or already experiencing, gambling-related problems. Two years later at age 18–19 years, 9% were classified as at risk of, or already experiencing, gambling-related problems.

ABOUT GROWING UP IN AUSTRALIA

Growing Up in Australia: The Longitudinal Study of Australian Children (LSAC) is an ongoing national study that, at recruitment, was representative of all Australian children. It follows the lives of children and their families from all over Australia. In 2004, around 5,000 0–1 year olds (B cohort) and 5,000 4–5 year olds (K cohort) and their families were recruited and have been surveyed approximately every two years since. With extensive information on children's physical, socio-emotional, cognitive and behavioural development and linked biomarkers, education, health and welfare data, the study has been a unique resource providing evidence for policy makers to identify opportunities for early intervention and prevention strategies.



IN FOCUS

This snapshot follows children from when they were 12–13 years old to when they were 18–19 years old. They reported on their experiences of video gaming (using a computer or computer-like device to play games) as they aged from 12–13 years (in 2012) to 16–17 years in 2016. Their gambling experiences were captured when they were aged 16–17 years (2016) and again at 18–19 years (2018). Their parents were also asked about their own gambling activities in 2016.

VIDEO GAMING AMONG YOUNG AUSTRALIANS

Playing video games is popular among young Australians and many children play video games frequently and for long hours.

At age 12–13 years almost all participants (96% males; 90% females) reported playing video games, and 53% of males and 36% of females played almost every day. Participation in video gaming and daily video gaming declined as adolescents transitioned through their teenage years (see Figure 1).

Boys were more likely to engage in video gaming and daily video gaming during adolescence than girls (Figure 1). At age 12–13 years, 53% of boys played video games daily and engagement remained high (47%) at age 16–17. The proportion of girls who played video games daily declined substantially from 36% at age 12–13 years to 20% at age 16–17.

Figure 1: Video gaming among Australian adolescents



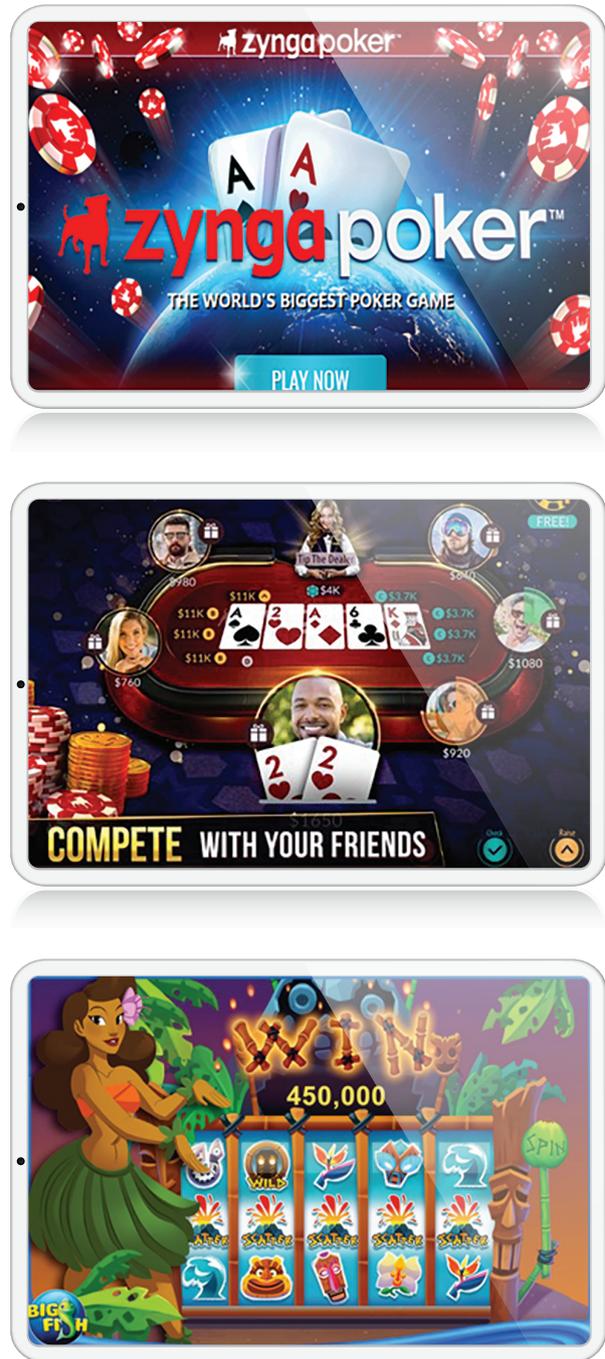
Note: LSAC K cohort, Wave 5 ($n = 3,850$), Wave 6 ($n = 3,317$) and Wave 7 ($n = 2,947$), weighted.



Some video games contain features that resemble or function like commercial gambling activities (examples are shown in Figure 2). Some resemble poker machines or 'pokies' and others resemble casino table games where the players can interact with other players via internet and social network sites (e.g. Facebook). According to LSAC, at age 16–17 years, one in five (20%) adolescents played simulated gambling games (e.g. Zynga Poker, Slotomania and Big Fish Casino). Engagement with simulated gambling games was more common among boys (24%) than girls (15%).

Video games that simulate gambling experience are often classified M (mature), but parents have called for tougher classifications (20% suggested MA15+ and 40% suggested R 18+).² A review of Australian classification regulations recommended that the classification scheme be updated.³

Figure 2: Simulated gambling



2 Department of Communication and the Arts. (2018). *2018 classification survey report: Loot boxes and simulated gambling in games*. Canberra: Commonwealth of Australia. Retrieved from www.classification.gov.au/sites/default/files/2019-10/classification-survey-report-loot-boxes-and-simulated-gambling-in-games-novemberanddecember2018.pdf

3 Browne, B. (2020). *Gambling on games: How video games expose children to gambling*. Discussion paper. Canberra: Australia Institute. Retrieved from www.infrastructure.gov.au/sites/default/files/submissions/centre-for-responsible-technology.pdf

GAMBLING PARTICIPATION AMONG YOUNG AUSTRALIANS

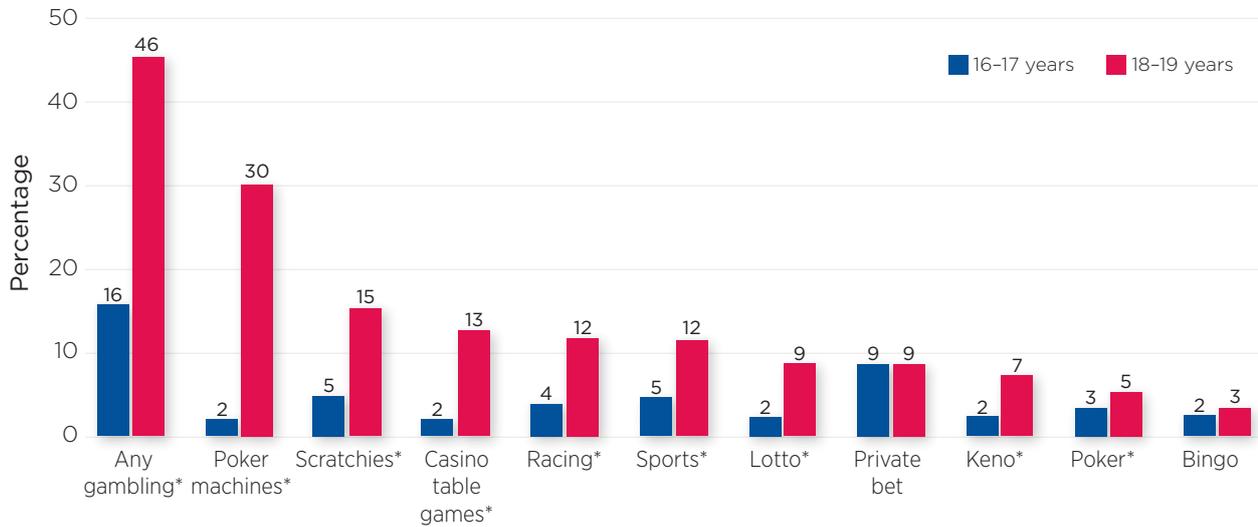
Participation in real money gambling increased significantly when young people reached the legal age to gamble (18 years; Figure 3). Approximately 16% of young people aged 16-17 participated in under-age gambling (most commonly private betting, 9%); two years later (aged 18-19), gambling increased to approximately 46%. At age 18-19 years, the five most common products to gamble on were: (1) poker machines ('pokies'; 30%); (2) instant scratch tickets ('scratchies'; 15%); (3) casino table games (13%); (4) betting on horse or dog races (12%); and (5) betting on sports (12%).

Young men (at age 18-19 years) were more likely to gamble than young women (51% compared to 40%; Figure 4); including on poker machines, sports betting, casino table games, race betting and private betting. Young women were more likely to gamble on scratchies and bingo than young men. Research suggests that gambling on casino table games, poker machines and race and sports betting are linked to higher frequency of gambling and increased risk of problem gambling.⁴



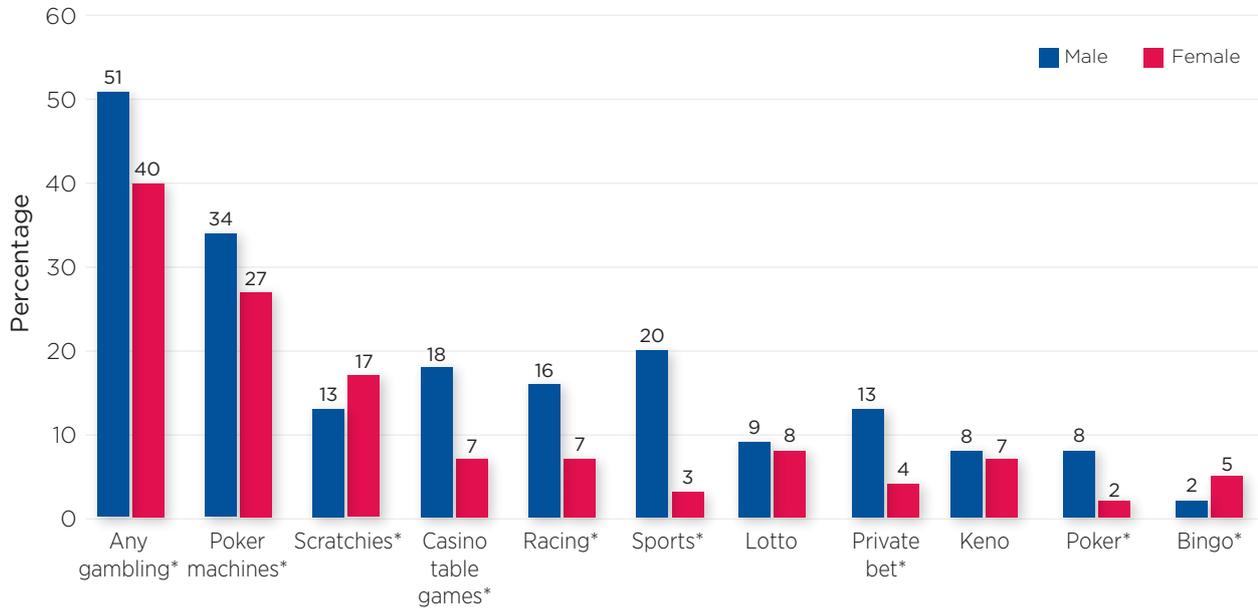
4 Productivity Commission. (2010). *Gambling* (Productivity Commission Inquiry Report no. 50). Canberra: Commonwealth of Australia. Retrieved from www.pc.gov.au/inquiries/completed/gambling-2010/report

Figure 3: Gambling participation by product and age



Notes: LSAC K cohort, Waves 7 and 8, weighted. The asterisk (*) denotes a statistically significant difference in results between the ages 16-17 and 18-19 ($p < 0.05$). The sample size ranged from $n = 2,937$ to $n = 2,466$.

Figure 4: Gambling participation by product and gender

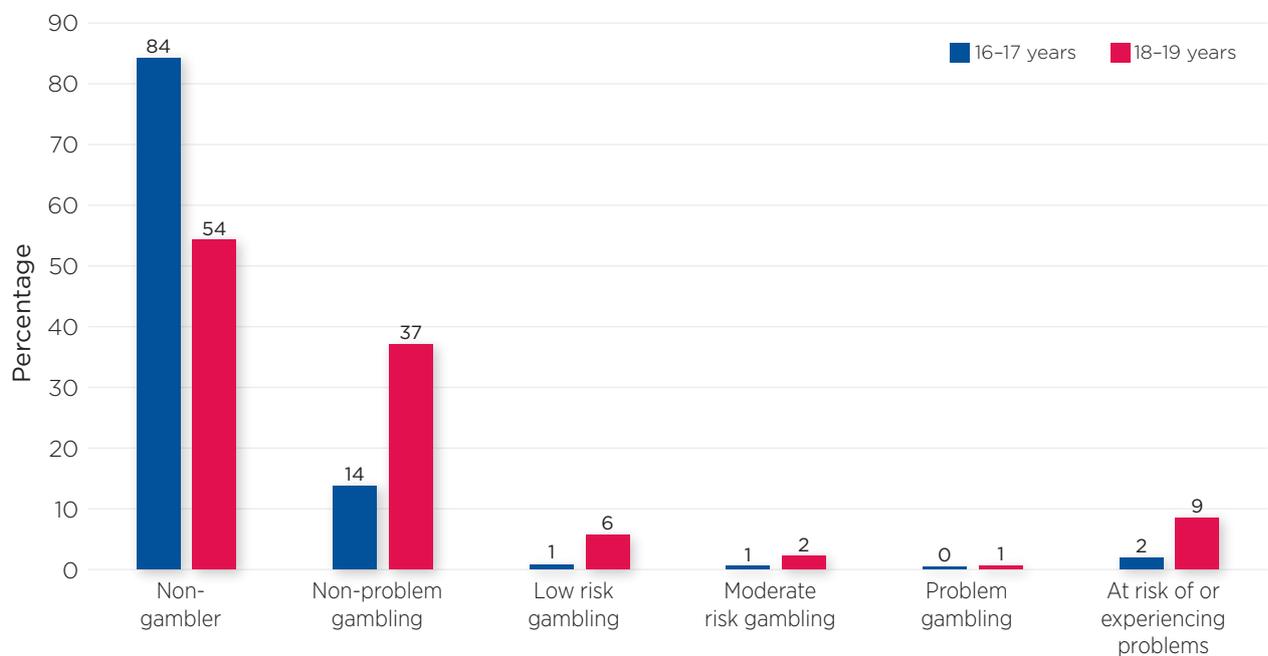


Notes: LSAC K cohort, Wave 8, weighted. The asterisk (*) denotes a statistically significant difference in results between male and female ($p < 0.05$). The sample size ranged from $n = 2,492$ to $n = 2,466$.

GAMBLING-RELATED PROBLEMS AMONG YOUNG AUSTRALIANS

The proportion of young people at risk of, or already experiencing, gambling-related problems increased more than fourfold between the ages of 16–17 and 18–19. Gambling-related problems were assessed among those who had gambled in the past year using the Problem Gambling Severity Index (PGSI).⁵ According to the PGSI score (Figure 5), 2% of 16–17 year olds were classified as being at risk of, or already experiencing, gambling-related problems (i.e. a score of 1+ on the PGSI). Two years later, about 9%, or 54,000 18–19 year olds, were classified as being at risk of, or already experiencing, gambling-related problems. At-risk gambling behaviour was more prevalent among young men (13%) than young women (4%).

Figure 5: Problem Gambling Severity Index (PGSI) by age



Notes: LSAC K cohort, Wave 7 ($n = 2,934$) and Wave 8 ($n = 2,488$), weighted. The 'at risk of or experiencing problems' category includes respondents classified as experiencing either low-risk gambling, moderate-risk gambling or problem gambling (i.e. any risk).

⁵ Ferris, J., & Wynne, H. (2001). *The Canadian problem gambling index: Final report*. Ottawa, ON: Canadian Centre on Substance Abuse. See further details in the [supplementary materials](#).

THE LINK BETWEEN VIDEO GAMING AND REAL MONEY GAMBLING

We examined the association between engaging in video gaming during adolescence and monetary gambling (top 5 gambling products by participation) in young adulthood.

Generally, we found no statistically significant association between daily video gaming (at age 16-17) and monetary gambling (at age 18-19). The exception was sports betting, which was more common among young people who played video games daily (Figure 6).

However, young people who played simulated gambling games (e.g. Zynga Poker, Slotomania and Big Fish Casino) as adolescents (aged 16-17) had statistically significant positive associations with spending money on gambling as adults (aged 18-19; see Figure 7). It is possible that this association is not causal (i.e. playing simulated gambling games does not directly cause or increase the risk of gambling); for example, it might be that there are common underlying causes (such as personality traits) for both behaviours.

To investigate this possibility, we conducted more sophisticated statistical modelling.⁶ This confirmed that there were no causal effects of daily video gaming on gambling, including sports betting. However, our causal analyses did find a statistically significant pathway between playing simulated gambling games at age 16-17 and gambling on casino table games, betting on racing and betting on sports at age 18-19 years (Table 1). It is important to note that, in this study, engagement in simulated gambling games did not involve spending money. Even without monetised gaming, we observed a causal link between playing simulated gambling games during adolescence and gambling with real money as a young adult.

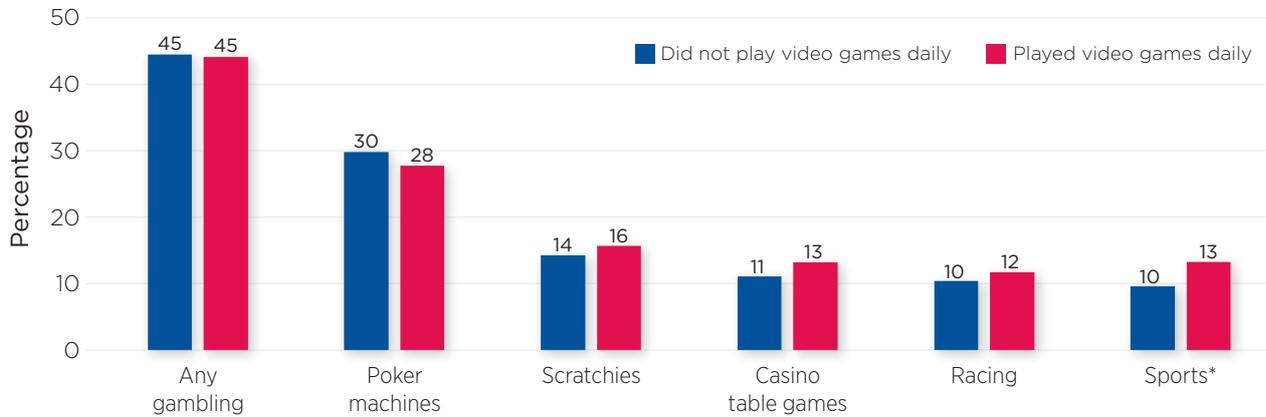
Table 1 shows that adolescents who played simulated gambling games had a 40 percentage points higher probability of gambling with money as adults, compared to adolescents who did not play simulated gambling games. By product, adolescents who played simulated gambling games had a higher probability of 26 percentage points of participating in casino table games, of 29 percentage points of betting on racing, and of 21 percentage points of betting on sports as adults.



These findings suggest that young people who played video games daily in their adolescent years (aged 16-17 years) were not necessarily more likely to gamble as adults (aged 18-19 years), but that playing simulated gambling games (such as Zynga Poker, Slotomania and Big Fish Casino) did increase the likelihood of real money gambling.

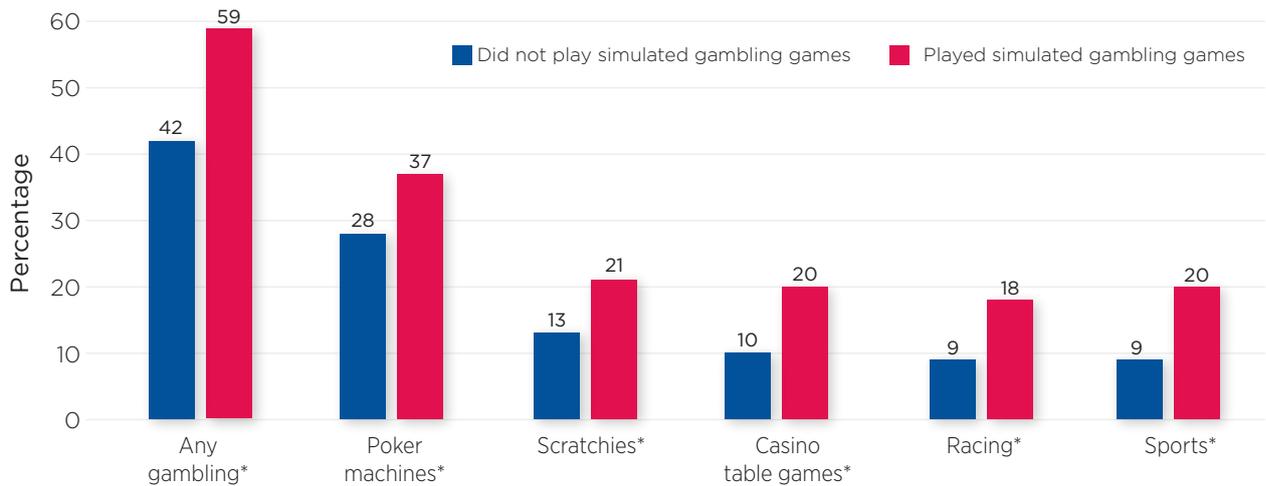
⁶ We estimated sequential bivariate probit models to deal with endogeneity (see the [supplementary materials](#) for further details).

Figure 6: Daily video gaming and gambling participation by product (top 5 products)



Notes: LSAC K cohort, Waves 7 and 8, weighted. The asterisk (*) denotes statistically significant differences between the two groups ($p < 0.05$). The sample size ranged from $n = 2,225$ to $n = 2,205$.

Figure 7: Playing simulated gambling games and gambling participation by product (top 5 products)



Notes: LSAC K cohort, Waves 7 and 8, weighted. The asterisk (*) denotes statistically significant differences between the two groups ($p < 0.05$). The sample size ranged from $n = 2,222$ to $n = 2,202$.

Table 1: Estimated effects of simulated gambling games on gambling participation

	Any	Scratchies	Casino table games	Pokies	Racing	Sports
	Marginal effects	Marginal effects	Marginal effects	Marginal effects	Marginal effects	Marginal effects
Playing simulated gambling games (aged 16-17)	0.40** [0.17]	0.28 [0.17]	0.26*** [0.08]	0.21 [0.17]	0.29*** [0.05]	0.21*** [0.07]
Observations	1,559	1,551	1,545	1,553	1,545	1,550

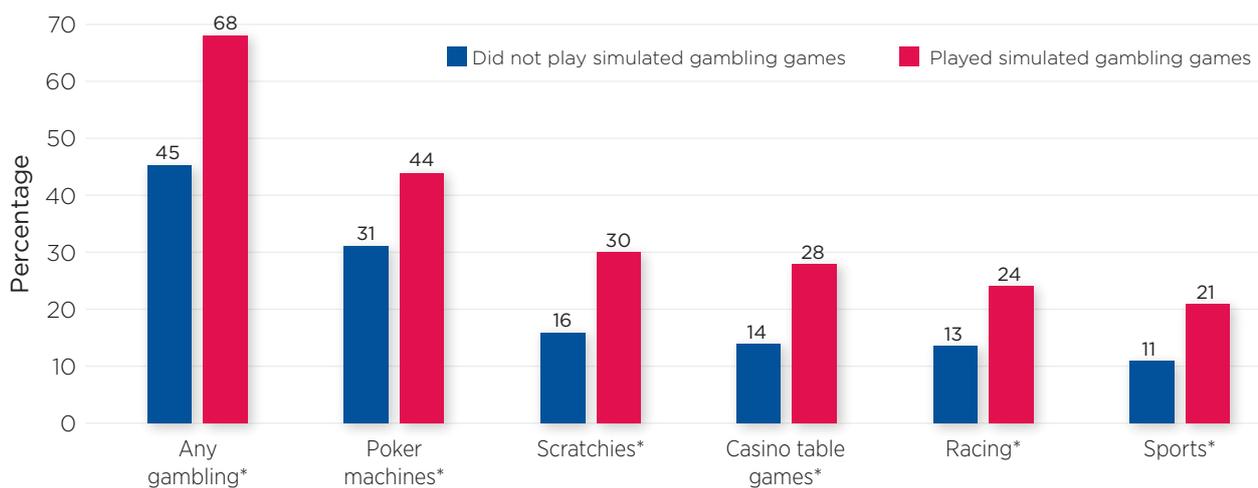
Notes: Sequential bivariate probit models were estimated. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard errors in brackets. Marginal probabilities are computed with $y = \text{Pr}(\text{Playing simulated gambling games at age 16-17} = 1, \text{Gambling at age 18-19} = 1)$. Only main variable is reported. See the [supplementary materials](#) for further details.

OTHER FACTORS ASSOCIATED WITH GAMBLING AMONG YOUNG AUSTRALIANS

Some notable factors were associated with gambling among young adults. For example, in regression analyses we found that young adults had a 10 percentage points higher probability of gambling if their parent/s also gambled. Alcohol use was also found to be a risk factor; compared to young adults who drank 10 drinks or less, young adults who drank more than 10 drinks during the last seven days had a 12 percentage points higher probability of participating in gambling.

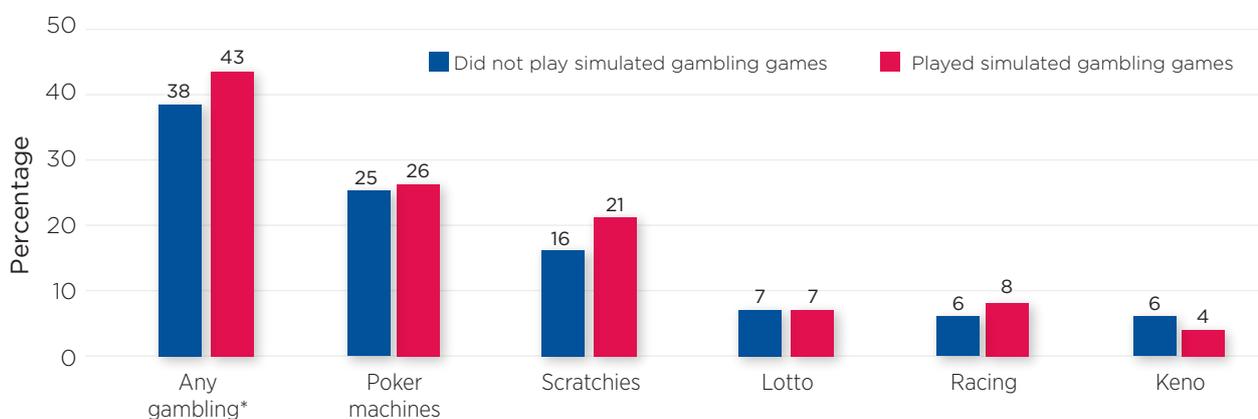
We also investigated whether there were any gender differences in the relationship between simulated video gaming and gambling (Figures 8 and 9). Young men who played simulated gambling games as adolescents had statistically significant positive associations with gambling in all of the top 5 products as adults whereas young women only showed statistical significance in any gambling. Unfortunately, we do not have enough observations to conduct more sophisticated causal analysis by gender, and further research is required to make conclusive statements about the gender effects.

Figure 8: Playing simulated gambling games and gambling participation by product (top 5 products; male)



Notes: LSAC K cohort, Waves 7 and 8, weighted. The asterisk (*) denotes statistically significant differences between the two groups ($p < 0.05$). The sample size ranged from $n = 1,100$ to $n = 1,088$.

Figure 9: Playing simulated gambling games and gambling participation by product (top 5 products; female)



Notes: LSAC K cohort, Waves 7 and 8, weighted. The asterisk (*) denotes statistically significant differences between the two groups ($p < 0.05$). The sample size ranged from $n = 1,122$ to $n = 1,113$.

IMPLICATIONS FOR POLICY AND PRACTICE

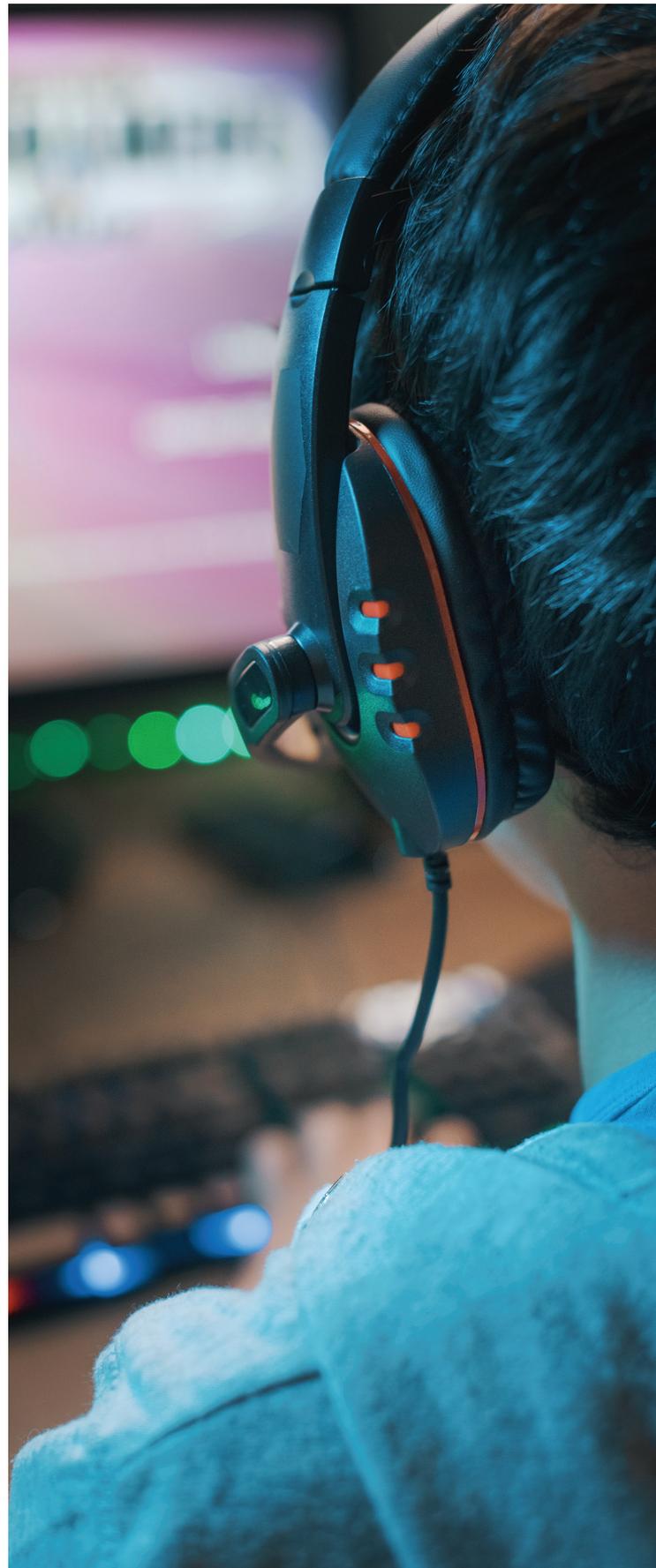
Recent estimates suggest that Australians lose approximately \$25 billion on legal forms of gambling every year, representing the largest per capita losses in the world.⁷ Gambling can result in the loss of time, money, or both, and gambling losses can lead to a range of negative consequences or gambling harms, ranging from financial, relationship or psychological issues to serious legal or health issues.

We found that playing video games daily at age 16–17 years did not lead to gambling at age 18–19 years; however, there was a causal link between playing simulated gambling games (e.g. Zynga Poker, Slotomania and Big Fish Casino) during adolescence and gambling participation as a young adult. Parent gambling and higher levels of alcohol consumption were found to be risk factors for monetary gambling as young adults. Simulated gambling games appear to have more impact on young men than young women.

The experience of gambling problems among young people were also examined and we found that the proportion of young people who would be classified as being at risk of, or already experiencing, gambling problems (PGSI score > 0) increased from 2% (at age 16–17) to 9% (at age 18–19).

Findings from this research can help to inform the classification and regulation of different types of video games in Australia, and the development of tailored and targeted health promotion messages for young people and their parents about the potential harms of gambling. The links between gaming and gambling among LSAC participants will continue to be monitored in future waves to better understand changes in participation and harm over time.

⁷ Queensland Government Statistician's Office, Queensland Treasury. (2021). *Australian gambling statistics, 36th edition, 1993–94 to 2018–19*. Brisbane: Queensland Treasury.



FURTHER DETAILS

Technical details of this research, including description of measures, detailed results and bibliography, are available to [download as a PDF](#).

About the *Growing Up in Australia* snapshot series

Growing Up in Australia snapshots are brief and accessible summaries of policy-relevant research findings from *Growing Up in Australia: The Longitudinal Study of Australian Children* (LSAC). For other *Growing Up in Australia* snapshots in this series see growingupinaustralia.gov.au/research-findings/snapshots

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