Gambling report –

Results from the 2016 Health and Lifestyles Survey

February 2018

hpa health promotion agency

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GLOSSARY OF ABBREVIATIONS AND TERMS

General abbreviations	
CAPI	Computer Assisted Personal Interview
CBG	CBG Research Ltd
GBAS	Gaming and Betting Activities Survey
HSC	Health Sponsorship Council
HLS	Health and Lifestyles Survey
HPA	Health Promotion Agency
NZDep	New Zealand Index of Socioeconomic Deprivation
PGSI	Problem Gambling Severity Index
TAB	Totalisator Agency Board

Statistical notations	
ANOVA	Analysis Of Variance
CI	Confidence Interval
p	Probability of rejection value (*p*-value)
n	Sample size

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EXECUTIVE SUMMARY

BACKGROUND

Gambling is common: 7 in 10 New Zealand adults engage in some sort of gambling or betting activity at least once a year. Although for most people gambling can be a leisure activity that causes no ill effects, gambling-related harm is a continuing issue in New Zealand, with significant health, social, and economic implications. Harmful gambling can have lifelong consequences for an individual and can also seriously impact their wider group of family and friends. It is clear that harm can also accrue from gambling behaviour that does not reach clinical criteria for 'problem gambling', that is, gambling considered 'low risk' or 'moderate risk' may involve experience of harm. A public health approach requires that harms from gambling are looked at as more than individual problems, but as issues that also affect families and communities.

The Health and Lifestyles Survey (HLS) is conducted every two years and is a nationally representative, face-to-face, in-home survey that facilitates the monitoring of health behaviours and attitudes of New Zealanders aged 15 years and over. The HLS is managed by the Health Promotion Agency (HPA)[1] and collects information to inform HPA's main programme areas, including minimising gambling harm.

In 2016, the gambling questions in the HLS were designed to be comparable to the 2006/07 Gaming and Betting Activities Survey (GBAS), a benchmark survey carried out to inform the development of a national health promotion programme aimed at reducing gambling harm. The majority of the 2016 gambling section questions were also comparable with those in the 2008, 2010, 2012 and 2014 surveys. It is recommended that the findings from this report be read in conjunction with a series of specialised gambling reports from the National Gambling Study (eg, Abbott et al, 2014), which can be found here: https://niphmhr.aut.ac.nz/research-centres/gambling-and-addictions-research-centre/nz-national-gambling-study.

This report uses data from the 2016 HLS to assess experience, knowledge and opinions about gambling and gambling-related harm among New Zealand adults, both overall and among different social and population groups. Where relevant, results are compared with those from earlier surveys.

[1] HPA is a New Zealand Crown entity formed in 2012 by the merger of the Health Sponsorship Council (HSC) and the Alcohol Advisory Council (ALAC).

GAMBLING PARTICIPATION

Participation

- In 2016, approximately 2.7 million New Zealanders aged 15 years and older (70% of respondents) participated in some form of gambling in the past 12 months. The overall past-year gambling rate has decreased from 2006/07 but has remained unchanged since 2012.

- There was a reduction in gambling participation between 2006/07 and 2016 across all age groups, with 15 to 17 year olds exhibiting the greatest reduction in gambling participation and people aged 45 years and over showing the least reduction. There were also decreasing time trends in the gambling participation rates for Māori and Pacific peoples.

- The regions with the highest prevalence of gambling participation were Wellington (77%) and the North Island (excluding Wellington and Auckland; 77%).The lowest prevalence was observed in Auckland (60%).

- A typical adult who participated in at least one gambling activity in the past year was likely to: 1) be aged 45 years old or older, 2) be born in New Zealand, 3) drink alcohol, 4) work full-time or part-time, 5) play games on mobile devices, not for money, 6) smoke, and 7) not live in the Auckland region.

Common gambling activities

- The most commonly reported form of gambling was buying Lotto tickets: just over one-half (55%) of adults had purchased a lottery ticket at least once in the past year. Other common forms of gambling were betting on horse/dog races (10%) and using gaming machines at pubs or clubs (10%).

- The most common gambling activities that people participated in at least once a week were: buying lottery tickets, Keno, Bullseye or Play 3, housie or bingo, sports betting, and horse or dog-race betting.

- Participation in the following gambling activities has been significantly reduced since 2006/07:

    - purchasing New Zealand Lotteries Commission products (eg, purchasing Lotto tickets or Instant Kiwi/scratch tickets).

    - informal gambling activities (eg, casino fundraising events, sweepstakes and monetary bets with friends or family).

    - playing gaming machines at pubs or clubs.

    - betting on sports events or horse or dog races.

- Between 2010 and 2016 there has been no statistically significant rise, overall, in the proportion of respondents who gambled online on an overseas website. Overseas online gambling activities included betting on a horse/dog race through an overseas TAB or betting agency, internet bingo and online poker. There has, however, been a significant rise in the proportion of respondents who gambled on an overseas TAB or betting agency on either horse/dog racing or sports events between 2010 and 2016, from 0.5% to 2.1%.

- Those who lived in the main centres of Auckland, Wellington and Canterbury were less likely to purchase Instant Kiwi/scratch tickets or participate in informal gambling activities than those who live in the rest of New Zealand.

- A typical person who is likely to have gambled online in the past year is identified as being male, aged between 24 and 44 years old and lives in the Wellington region.

Number of activities

- Previous research has shown (Devlin, 2011) that participation in multiple gambling activities increases an individual's risk of experiencing gambling harm. In the current study, respondents reported participating in an average of under two activities in the past 12 months; 1 in 7 (14%) reported participating in four or more.

- In line with previous research (Abbott et al, 2014), those individuals identified as at-risk gamblers (as defined by the Problem Gambling Severity Index (PGSI)) participated in proportionately more activities in the past year than non-problem gamblers. 'Non-problem gamblers' are defined as people who are gambling recreationally, and are experiencing no self-reported harms. 'Low-risk gamblers' may be experiencing some degree of harm or negative consequences from their gambling. 'Moderate-risk gamblers' are likely to be experiencing some harm leading to negative consequences. 'Problem gamblers' will be gambling with negative consequences and possible loss of control.

- 18% of 'non-problem gamblers', 38% of 'low-risk gamblers', and 70% of 'moderate-risk/problem gamblers' had participated in four or more different types of gambling in the past 12 months.

- The proportion of New Zealand adults who had participated in only one gambling activity has increased from 28% in 2006/07 to 33% in 2016. However, these increases are balanced by decreasing time trends for the proportion of individuals taking part in two, three or four or more activities. The biggest decrease was the proportion of those who take part in two activities. The proportion for this group dropped from 30% in 2006/07 to 22% in 2016.

GAMBLING HARM

Individual gambling harm

- Around 5% (~186,000 New Zealand adults) of respondents reported experiencing at least some level of individual gambling harm as measured by the PGSI:
    - 3.3% (around 125,000 people) met the PGSI criteria for 'low-risk gambling' ('low-risk gamblers' may be experiencing some degree of harm or negative consequences from their gambling).
    - 1.5% (around 55,000 people) met the PGSI criteria for 'moderate-risk gambling' ('moderate-risk gamblers' are likely to be experiencing some harm leading to negative consequences).
    - 0.1% (around 6,000 people) met the PGSI criteria for 'problem gambling' ('Problem gamblers' will be gambling with negative consequences and possible loss of control).
- There has been a decrease in the proportion of non-problem and low-risk gamblers and an increase in the proportion of non-gamblers since 2010. For Māori and Pacific, there is an overall decreasing trend of moderate-risk/problem gambling since 2010.
- Half (49%) of those who played gaming machines in pubs or clubs at least monthly experienced some harm from their gambling. Over one quarter (26%) of those who bet on sports or racing events at least monthly also experienced some harm.
- Low risk gambling was predicted by being either Māori or Pacific, and by being a current smoker. Moderate-risk gambling was predicted by being Māori or Asian, and by being a current smoker. Gambling with any level of risk was predicted by being Māori, Pacific or Asian, and being a current smoker.
- In 2016, 3.1% of New Zealand adults 18 years and over had experienced an occasion when they had gambled more than intended, but this proportion has been dropping steadily since 2006/07 when it was 11%.

Second-hand gambling harm

- 1 in 5 New Zealand adults (22%) have been affected at some time in their lives by their own gambling or the gambling of others.
- 6% (~214,000 New Zealand adults) of respondents reported experiencing at least one form of household-level gambling harm (including having an argument about time or money spent on gambling, or going without or bills not being paid because too much money was spent on gambling by another person). The prevalence of household-level harms has been

decreasing since 2006/07. Māori respondents were most likely to be affected by household gambling harms but the prevalence of household arguments about gambling has been dropping at a faster rate for Māori than for non-Māori.

- The most commonly reported form of gambling associated with household harm was gaming machines at pubs or clubs.
- Experience of a friend or family member gambling more than intended has been steadily dropping since 2006/07, from 36% to 12% in 2016. Māori and Pacific people and those who gamble themselves were most likely to be close to someone with problems with their gambling.
- Māori and those who live in high deprivation areas are most impacted by the gambling of others.

Gambling harm knowledge

Potentially harmful gambling activities

- In 2016, 8 in 10 respondents (78%) thought that some forms of gambling were potentially more harmful than others. This is significantly lower than the proportion in 2010 (87%). Māori, people of Other/European ethnicity, and those who participate in several gambling activities were are more likely to believe some forms of gambling are more harmful.
- Gaming machines in pubs or clubs were believed to be the most harmful activity, followed by Lotto tickets (including Keno, Strike, Powerball and Instant Kiwi/scratch tickets) and gaming machines at casinos.

Early signs of harmful gambling

- Over 9 in 10 respondents recognised each of the three signs of risky gambling (chasing losses; gambling causing stress; don't want anyone else to know they are gambling). Females and people of Pacific and Asian ethnicity were less likely to correctly identify the early signs of gambling harm. As expected, knowledge of the early signs of gambling harm tended to increase as the education level increased. The more gambling activities that respondents had participated in, the better they could identify the signs of gambling harm.

Knowledge of how to get help for a friend or family member

- Over half (56%) of respondents reported that they knew what they could do to help for a friend or family member who gambled too much. The more gambling activities that respondents had participated in, the more likely they were to know where to find help.

There was a significant decreasing time trend in knowing how to get help for a friend or family member from 2006/07 (71%) to 2016 (56%). This suggests that a further focus on raising the profile of service providers (including self-help tools) is warranted.

Knowledge of support services for gambling harm

- 4 in 5 respondents (83%) had heard of at least one service to help people who gamble too much. Awareness of gambling help services has slightly decreased since 2006/07 (85%).

Views on gambling

Social undesirability of gambling activities

- Just over half (55%) of respondents believed some forms of gambling were socially undesirable. The more gambling activities that respondents had participated in, the less likely they were to believe some forms of gambling were socially undesirable.
- The form of gambling most commonly reported to be socially undesirable was gaming machines at a pub or club. The next most socially undesirable activities were gaming machines at a casino and mobile phone games for money.

Whether fundraising from gambling does more harm than good

- In 2016, nearly half (46%) of respondents believed that raising money through gambling did more harm than good in the community. However, this belief is becoming less common over time. In addition, the proportion of respondents who believe it does *more good than harm* is also decreasing with time, at the same rate. This contrast can be explained by an increasing time trend of respondents who think it does *equal good and harm* or who *don't know*, from 20% in 2006/07 to 30% in 2016. This suggests there is decreasing awareness of the role of raising money through gambling in the community.

Concern with the level of gambling in the community

- 4 in 10 respondents (43%) reported that they had some degrees of concern with the level of gambling in the community. Respondents who had some form of university degree, Māori and Pacific peoples, and those in high deprivation areas were most likely to be concerned about gambling level in their community. Since 2014, there has been a decrease in those respondents who were somewhat or very concerned.

Responses to harmful gambling

Strategies to avoid gambling too much

- Of those who had gambled in the past year, 7% reported that they had used at least one service or strategy to avoid gambling too much, for example, getting help from a gambling venue. The most commonly used strategy was setting a monetary limit before beginning (4%). Nearly 3% reported using self-control, or knowing when to stop gambling. The proportion of past-year gamblers who used at least one strategy to avoid gambling too much has decreased from 2012.

'Checking in' about your gambling

- Around 4% of past-year gamblers reported that they had 'checked in' about their gambling in the past 12 months (thought about whether your gambling was still just for fun).

- At-risk gamblers are more likely to check in about their gambling than non-problem gamblers: 19% of low-risk gamblers and 71% of moderate-risk/problem gamblers reported that they had 'checked in' about their gambling. People with involvement in many gambling activities were also more likely to 'check in' about their gambling.

Actions taken if concerned about own gambling

- Only 11% of past-year gamblers said that they would do *nothing* if they were concerned about their own gambling. Three in 10 (29%) would choose to *talk to their family/friends,* 17% would *call an 0800 helpline*, while, 15% would *stop gambling* completely. Eleven % of gamblers said they *don't know* what they would do.

Contact made with support services

- A low proportion of New Zealand adults (3%) had accessed at least one gambling support service for themselves or someone else. The top two services which were accessed by the participants were an *0800 helpline* (1.3%) and *free counselling/treatment service* (1.2%).

- People aged 45 years and over, Māori, those in high deprivation areas, those with a high level of education and those who gamble with some level of risk are most likely to contact a gambling support service.

Advertising

Awareness of advertising about addressing gambling harm

- 1 in 2 respondents (50%) reported that they had seen advertising about addressing gambling harm in the past three months. These respondents mainly reported seeing such advertising on television (87%), followed by hearing it on the radio (20%).

- People of Pacific and Other/European ethnicity were more likely to have seen advertisements than Māori and Asian. Compared with those aged 45 years and over, people aged between 25 and 44 years were more likely to have seen or heard advertising. Those who had participated in multiple gambling activities were also more likely to have seen advertisements.

Advertising of gambling activities

- Just over half (55%) of respondents reported that they had seen advertising or a promotion for gambling activities in the last 12 months. The most commonly seen advertising or promotion was around internet games (27%). This followed by betting on horse or dog races (24%) and betting on sports events (24%). Awareness of advertising of internet games has steadily increased since 2010, from 17% to 27% in 2016.

Response to Lotto advertising

- Of the 2,343 respondents who had bought New Zealand Lotteries products, 46% said that they had bought more as a result of seeing Lotto advertising or promotion for a big jackpot or prize draw.

- Compared with those aged 45 years and over, people aged between 25 and 44 years were more likely to buy more Lotto tickets as a result of advertising. Infrequent gamblers were more likely to be influenced by Lotto advertising than frequent gamblers. Those who participated in several gambling activities were also more likely to be influenced by Lotto advertising.

Gambling more on other activities as a result of advertising for Lotto products

- 1 in 10 (11%) past-year gamblers reported that advertising or promotion for Lotto products had led them to gamble, or gamble more often, on activities *other than* Lotto as a result of seeing or hearing any advertising or promotion for Lotto products. In particular, Māori people were significantly more likely to increase other forms of gambling as a result of advertising for Lotto products.

CLASS 4 VENUES AND ELECTRONIC GAMING MACHINES ('POKIES')

Participation in pokies

- 1 in 10 New Zealand adults (around 374,000; 10%) had played a gaming machine at a pub or club in the past year.
- Participation in pokies in pubs or clubs has been decreasing steadily since 2006/07, when it was 19%.
- Auckland has a lower rate of participation of pokies in pubs or clubs (6%) than other regions of New Zealand.
- The mean age of people who play pokies in pubs or clubs at least monthly was 47 years. Those who play less often than monthly were a little younger at 38 years.
- In relation to personal expenditure on gaming machines or pokies, the most commonly reported (38%) average spend was $11 to $25 per session.

Attitudes towards pokies

- Nearly half of New Zealand adults (46%) believed that pokies in pubs or clubs were harmful and over one third (35%) believed they are socially undesirable. The opinions that pokies are potentially harmful and socially undesirable have become less prevalent since 2010.

Pokies and alcohol

- The majority (59%) of New Zealand adults do not believe that 'pokie machines make a pub or bar more enjoyable to spend time at.' Respondents who agreed that pokie machines make a pub or club more enjoyable tended to be: Asian or Pacific peoples, those who live in medium and high deprivation areas, and those who engaged in a high number of gambling activities.
- 2 in 5 (42%) prefer to drink in pubs or bars that do not have pokie machines, and only 14% preferred to drink in pubs or bars that have pokie machines. Those who did not play gambling machines or pokies themselves were more likely to prefer to drink in pubs and bars that do not have pokie machines.
- Out of those who play pokies (either at pub or club and casino), around 1 in 3 (29%) reported that they spend more on pokies when they drink alcohol. Moderate-risk and problem gamblers and those involved in several gambling activities were more likely to spend more when they drink.

Pokie venues and staff interaction

- Pokie players mostly reported no interaction with staff at gambling venues (49%). There were very few cases where staff had spoken to the pokie player with a concern about their gambling (0.3%) or given them a leaflet on gambling support services (0%).

Help services advertised at pokie venues

- Most (66%) of those who had played pokies in the previous 12 months said that they had noticed advertising about help for gambling problems at a venue. Just over half said they ignored the information because it was not relevant to them (53%), or they read it and did not think it was relevant to them (27%). Few (2%) said that they read the information and thought about changing their behaviour, and 16% reported that they read it and thought that it would be useful for others.

Knowledge of host responsibility requirements

- 3 in 4 respondents (76%) said that venues with pokie machines should do something to prevent their customers' gambling from becoming harmful. This was an increase from 2014 (72%).
- Over a third of respondents (35%) knew that venues with pokie machines are required, by law, to prevent their customers' gambling from becoming harmful.

CONCLUSION

While participation in gambling activities has decreased since 2006, gambling-related harm continues to be an issue in New Zealand, with significant health, social, and economic implications.

The 2016 HLS data collection was designed to allow comparison with the 2006/07 GBAS which informed the national health promotion programme to minimise gambling harm. The majority of questions are also comparable to those included in the 2008, 2010, 2012 and 2014 surveys.

In 2016, 70% of the respondents (2.7 million New Zealanders aged 15 years and older) participated in some form of gambling in the previous 12 months. While the overall past-year gambling rate has decreased from 2006/07 it has remained unchanged since 2012. The greatest reduction in gambling participation was with 15 to 17 year olds. There were also decreasing time trends in gambling participation rates for Māori and Pacific peoples. There has been a decrease in the proportion of non-problem and low-risk gamblers and an increase in the proportion of non-gamblers since 2010.

Overall the 2016 HLS also showed a decrease in the reported experience of household gambling harms compared with previous years. For Māori and Pacific, there is an overall decreasing trend of moderate-risk/problem gambling. Māori are most likely to be affected by household gambling harms. However, the prevalence of household arguments about gambling have been declining at a faster rate for Māori than non-Māori.

The most commonly reported form of gambling associated with household harm was with electronic gaming machines in pubs and clubs. Gaming machines at pubs and clubs were also the most commonly reported gambling activity to be considered socially undesirable. That said, people with moderate or high-risk gambling are significantly more likely to play multiple gambling modes. Māori and those who live in areas with high deprivation are most impacted by the gambling of others. It is worth noting that the bulk of the population burden of gambling harm sits with those who are 'low-risk' gamblers (Browne et al 2017), due to being a much larger group.

Knowledge of at least one service to help people who gamble too much slightly decreased from 2006/07 (85%) to 2016 (83%). The more gambling activities respondents had participated in the less likely they were to perceive gambling as socially undesirable. The highest level of concern about the community levels of gambling were among Māori and Pacific peoples, those in high deprivation areas and those with some form of university degree.

Consistent with previous years, ethnic inequalities in household experience of gambling harm persist, and pokies are the form of gambling most linked to harms and most recognised as causing problems. While online gambling, which is a potential emerging concern, does not feature as a prominent mode of gambling in the current data, it is an issue that should be monitored as the online landscape is changing rapidly.

It is clear from the present study that gambling-related harm reaches far beyond the individual who gambles: 12% of respondents reported that they had experience of a friend or family member who had gambled more than they meant to in the past 12 months. While the prevalence of risky gambling is relatively low at a population level, it should be noted that the prevalence of gambling harm is high amongst those who gamble regularly. Almost half (49%) of people who gamble on gaming machines/pokies in pubs or clubs at least monthly were found to be at risk. Also at risk are 1 in 4 people (26%) who bet on sports or racing events at least monthly.

These findings support the current focus of the HPA's awareness and behaviour change programme. The programme encourages communities at particular risk of gambling harms (at-risk gamblers and concerned others) to check whether their gambling is okay. It seeks to increase the monitoring/reviewing of gambling behaviours as well as early self-help/help-seeking behaviours by individuals and concerned others. In addition, the programme works to increase the implementation of harm minimisation practices in gambling venues throughout New Zealand.

1. INTRODUCTION

1.1 THE HEALTH AND LIFESTYLES SURVEY

The Health and Lifestyles Survey (HLS) is a monitor of the health behaviour and attitudes of New Zealand adults aged 15 years and over (referred to as 'New Zealand adults' in the report). The HLS is managed by the Health Promotion Agency (HPA) and collects information relating to the programme areas HPA works in, including minimising harm caused by gambling. The HLS has been in-field every two years since 2008. In 2016, the gambling section of the HLS was designed specifically to be comparable to the 2006/07 Gaming and Betting Activities Survey (GBAS), a benchmark survey carried out to inform the development of a national health promotion programme aimed at reducing gambling harm.

The section relating to minimising gambling harm was the biggest section of the survey, and provided comparable measures with previous surveys of New Zealand adults' opinions, knowledge, and behaviour relating to gambling harm: specifically, the 2006/07 GBAS and the four previous HLSs (2008, 2010, 2012 and 2014). In addition to questions related to the minimising gambling harm program, the 2016 HLS also contained a range of questions relating to other HPA programs. This included questions relating to tobacco control, healthy eating, physical activity, alcohol, sun safety, immunisation, and mental health.

This report presents results from the 2016 HLS on participation in gambling activities as well as participants' experiences, knowledge and opinions about gambling harm, both overall and among different social and population groups. The population groups of interest were gender, ethnicity, neighbourhood deprivation level, risk of gambling harm, type of gambling participation, and number of gambling activities participated in over the past 12 months. Where relevant, results are compared to those from earlier surveys. Data from the GBAS and the previous HLSs are included where the measures are comparable. It is recommended that the findings from this report should be read along with the series of specialised gambling reports from the National Gambling Study (Abbott et al, 2015). Details of the procedures followed to ensure these surveys produced high-quality and robust data can be found in the related methodology reports.[2]

1.2 BACKGROUND

HPA sought to develop a nationally representative survey which aims to provide robust quantitative data on key areas of New Zealander's lifestyles. Before the introduction of the HLS in 2008, the Health Sponsorship Council (HSC) undertook a number of different monitors to benchmark and monitor changes in New Zealanders' knowledge, attitudes and behaviour in response to its social marketing and health promotion programmes and community-level activities in the health sector. These included:

[2] Methodology reports for the 2006/07 GBAS and the 2008-2014 HLS are available online: http://www.hpa.org.nz/research-library/research-publications.

- Smokefree/Auahi Kore Monitor, which had been running since the early 1990s and had been run annually since 2003
- 2006/07 Gaming and Betting Activities Survey, which provided benchmark measures for the minimising gambling harm programme
- New Zealand Children's Food and Drinks Survey, undertaken in 2007 to provide benchmark measures for the nutrition and physical activity programme
- Sun Protection Triennial Survey, which monitored responses to the sun safety programme and had been undertaken since 1994.

These monitors focused on adults, although the Gaming and Betting Activities Survey, the Children's Food and Drink Survey and the Sun Protection Triennial Survey also interviewed young people in the target age group for that particular programme. In 2007, HSC reviewed the adult surveys and combined the majority of these into a single survey - the HLS.

1.3 USES OF THE HLS

The Health and Lifestyles Survey enables us to build a profile of gamblers

Building a profile of gamblers in New Zealand is one of the primary tasks of the HLS. This information about the profile of who, what types, where and how builds a picture of gambling within New Zealand, and presents a view of the distribution of gambling-related harm across the population.

The HLS feeds into resource and campaign development

By understanding the profile of gamblers from the HLS findings, HPA can effectively target those at risk of gambling harm through gambling environments, via marketing campaigns, websites, social media and public health resources. The HLS contributes to HPA's work on the 'Gamble Host' project, which focuses on "Class 4" venues (Class 4 venues are pubs and clubs, as set out in the Gambling Act, 2003). Information from the 2012 and 2014 HLS (in conjunction with a large qualitative study that explored and tested venue resources), resulted in the development of resources to increase gambling host responsibility in gambling venues. This project was a partnership between HPA, the Ministry of Health, and Department of Internal Affairs.

The 2014 HLS identified that respondents considered pokies and Lotto to be the most harmful form of gambling activities. Pokies were also identified as being the most socially undesirable activity. These results helped to shape the development of the Choice Not Chance website (ChoiceNotChance.org.nz). Website content encourages people to check their own or someone else's gambling. Based on their responses, site users are offered customised results and are presented with a range of self-help or professional support options.

The website provides information about the early signs of harm. In addition, it helps gamblers to better understand pokies, casinos, online gambling and Lotto; how they work, and how to prevent harm from occurring.

The Choice Not Chance advertising takes a preventative approach. It targets at-risk gamblers aged 18 to34 years and aims to (1) motivate more people who are at risk to check whether their gambling is okay before harm escalates in severity, and (2) motivate more people who are at risk to get help earlier (or change their behaviour through self-help).

The campaign specifically targets low-risk and moderate-risk gamblers, as informed by the HLS-derived profile. The campaign concentrates on the theme “Is your gambling still just for fun?” and encourages people to check by taking an easy quiz at ChoiceNotChance.org.nz. The campaign was qualitatively tested to ensure relevance to low, moderate and high-risk individuals.

HPA uses HLS information to inform the national theme for Gambling Harm Awareness Week (focusing on Māori and Pacific and low socio-economic 18 to 34 year old people). Finally, insights from the HLS are used to inform the public health literature, and the development of brochures and other materials that are distributed to people at events. For example, specific Choice Not Chance brochures were created for Māori, Pacific and Chinese audiences.

Campaign development and evaluation is informed by the HLS

The HLS has informed the development of a campaign-specific evaluation, which lifted questions directly from the HLS, to allow comparisons. Due to the long-term nature of the HLS, time-series analysis can be conducted on the behavioural and attitudinal changes in relation to various groups who experience gambling harm. The information garnered from the survey allows HPA to plan future campaigns, as it enables HPA to understand what segments of the population are most greatly affected or at greater risk.

The HLS provides information for help seeking

The HLS allows HPA to understand what sources of help people will access if they have concerns about their gambling. This allows HPA to plan marketing campaigns and focus on driving people to appropriate assistance should they need it.

1.4 REPORT OBJECTIVES

This report presents findings about New Zealanders’ experiences with gambling participation, harm, knowledge and awareness of gambling harm and solutions, and awareness of and responses to advertising about gambling. These are in order to provide an evidence base to support the HPA’s minimising gambling harm program and to feed into the Ministry of Health nine-year (2016/17 to 2024/25) strategic plan to prevent and minimise gambling harm (see Table 1-1).

The specific objectives fall into two areas: gambling participation and gambling harm.

Gambling participation objectives are to:

- Determine the prevalence of past-year gambling participation and frequency of gambling participation among New Zealand adults, both overall and among different social and population groups (as defined by gender, age, ethnicity, level of gambling harm, and deprivation level)
- Investigate the prevalence of different patterns of gambling behaviour among New Zealand adults
- Examine the changes in gambling participation and frequency from 2006/07 to 2016.

Gambling harm objectives are to:

- Ascertain the prevalence of experience, knowledge and opinions about gambling harm among New Zealand adults, both overall and among different social and population groups (as defined by gender, age, ethnicity, type of gambling participation, risk of gambling harm, and deprivation level)
- Examine changes from 2006/07 to 2016
- Demonstrate New Zealanders' current knowledge and perceptions about gambling harm topics that HPA campaigns address
- Identify predictors for gambling behaviours and gambling-related harm variables.

Table 1-1: Objectives from the Ministry of Health's nine-year strategic plan (2016/17 to 2024/25) to prevent and minimise gambling harm

Ministry of Health objective	Section addressed in this report
1. There is a reduction in gambling-harm related inequities	5.1: Individual gambling harm 5.2: Second-hand gambling harm
2. Māori have healthier future, through the prevention and minimisation of gambling harm	All sections. In particular: 4.1: Gambling activities in the previous 12 months 5.1: Individual gambling harm 5.2: Second-hand gambling harm
3. People participate in decision-making about activities that prevent and minimise gambling harm in their communities	5.4: Views on gambling 6.2: Pokies and alcohol
4. Healthy policy at the national, regional and local level prevents and minimises gambling harm	4.1.3: Gambling participation across region 4.1.4: Profile of past-year gamblers 4.2.3: Participation in each gambling activity by geographic region 4.2.5: Profile of online gamblers 5.1.5: Gambling harm, by geographic region
5. Government, the gambling sector, communities, family/whānau and individual understand and acknowledge the range of gambling harms that affect individuals families/whānau and communities	5.1: Individual gambling harm 5.2: Second-hand gambling harm 5.4: Views on gambling
6. A skilled workforce is developed to deliver effective services to prevent and minimise gambling harm	6.3: Pokie venues and staff interaction 6.4: Help services advertised at pokie venues

	6.5: Knowledge of host responsibility requirements
7. People have the life skills and the resilience to make healthy choices that prevent and minimise gambling harm	5.3: Gambling harm related knowledge 5.5: Responses to harmful gambling
8. Gambling environments are designed to prevent and minimise gambling harm	6: Class 4 venues and Electronic gaming machines (‘pokies’)
9. Services to prevent and minimise gambling harm effectively raise awareness about the range of gambling harms that affect individuals, family/whānau and communities	5.3: Gambling harm related knowledge 5.6.1: Awareness of advertising about addressing gambling harm 6.4: Help services advertised at pokie venues
10. Accessible, responsive and effective intervention are developed and maintained	5.3.4: Knowledge of support services for gambling harm 152: Contact made with support services 5.6.1: Awareness of advertising about addressing gambling harm 6.4: Help services advertised at pokie venues 6.5: Knowledge of host responsibility requirements
11. A programme of research and evaluation establishes and evidence base that underpins all activities to prevent and minimise gambling harm.	The HLS provides a nationally representative monitor of gambling attitudes and behaviours in New Zealand.

2. GAMBLING: CONTEXT AND BACKGROUND

2.1 GAMBLING AS AN INTERNATIONAL ISSUE

The Australian Productivity Commission (2010) define gambling as:

> "an entertainment based on staking money on uncertain events driven by chance, with the potential to win more than staked, but with the ultimate certainty that gamblers as a group will lose over time" (p 1.3)

Gambling has a very long history across both time and cultures, and in a variety of forms. Currently in most countries, gambling occurs openly and with high rates of public participation (Productivity Commission 1999; 2010).

In the latter part of the 20th century there has been a very rapid expansion of high-intensity legalised commercial gambling throughout the world (Blaszczynski, Laouceur & Scaffer, 2004). This modern approach to gambling has an emphasis on new technologically-driven gambling products that are very different from the activities of the past. While "traditional" gambling forms continue (eg, horse racing, card games, bingo), newer forms and means of participation have emerged. Electronic Gaming Machines (EGMs), telephone betting, instant scratch tickets, and various forms of online gambling have all emerged over the past 30 years (Adams et al, 2009).

Hodgins and colleagues (2016) estimate that gambling disorders affect 0.2% to 5.3% of adults worldwide, although they note that the estimates should be treated with caution due to the varying screening instruments and methods used, and availability and accessibility of gambling opportunities. Schull (2014) points out that many find it misleading to measure the problem within the *general* population, given the percentage of people experiencing harm amongst the *gambling* population is a good deal higher, and higher still among regular or repeat gamblers. Whichever measure is used, the absolute numbers of people involved are large and the harms are significant.

2.2 GAMBLING AND GAMBLING RISK/HARM IN NEW ZEALAND

In New Zealand, gambling is regulated by the Gambling Act 2003 which is informed by a public health model of gambling, as first fully explicated by Korn & Shaffer (1994). This model recognises the medical (or mental health) approach to recognising and acknowledging individual gambling harm but goes further to incorporate a wider view of gambling harm. This recognises not just harm focused on the individual, but also on families, communities, and wider society.

The development of a public health approach to gambling and related problems in New Zealand has been described by Adams & Rossen (2012), and emphasises the shift from a focus on individual harms to a broader focus, and the contextual, policy, regulation, and social marketing implications of this shift. Abbott (2017) provides a detailed account of the development and evolution of gambling, and gambling policy, in New Zealand over the past 30 years.

New Zealanders spend around $2 billion every year on gambling (Department of Internal Affairs, 2017). Gambling can be a recreational activity, enjoyed at a moderate level and without harm. There is, however, a significant minority of New Zealanders who are identified as ‘moderate risk’ or ‘problem gamblers’, and the harm they experience can have a significant negative impact on their own lives and the lives of a wider group of family and friends, and other associates. The risk of experiencing gambling-related harm is associated particularly with regular involvement in continuous forms of gambling (ie, forms of gambling where any winnings can immediately be “reinvested” in further gambling, such as pokies and casino table games).

In relation to individual risk and harm, 2014 HLS results show that among all New Zealand adults, 2.7% (around 86,400 people) met the PGSI criteria for ‘low-risk gambling’, 1.2% (around 36,700 people) for ‘moderate-risk gambling’, and 0.7% (22,800 people) for ‘problem gambling’. In total, 4.6% of New Zealand adults (around 145,900 people) had experienced at least some level of individual gambling harm (Holland et al, 2017). These figures are in broad agreement with those reported in the 2012 National Gambling Study (Abbott et al, 2014).

Apart from those who are being harmed by their own gambling, 5.5% of New Zealand adults (approximately 175,400 people) reported that in the previous 12 months, they had experienced at least one household harm due to gambling.

Recently a new approach to estimating the burden of gambling harm in New Zealand has employed methods of epidemiology and health economics to produce Quality Adjusted Life Year (QALY) estimates of the population burden of gambling-related harm (Browne et al, 2017). These estimation methods are well established in other fields of health-related research, and are employed by the World Health Organisation’s Global Burden of Disease project. The authors conclude that, annually, gambling issues produce significantly more ongoing harm than some other key health conditions, such as osteoarthritis, diabetes, and drug use disorders. Clearly this is an important issue that requires monitoring and ongoing research, particularly as new modes of gambling emerge and evolve.

3. METHODOLOGY

This section provides a brief description of the methodology used for the 2016 HLS. A full methodology report and specific analyses of all 2016 HLS publications such as short fact sheets are on HPA's website at: http://www.hpa.org.nz/research-library/research-publications.

3.1 SAMPLING FRAME

The HLS is a nationwide face-to-face survey of New Zealand adults aged 15 years and over. Note that 15 to 17-year-olds cannot legally participate in the gambling activities assessed in this report, but it is nevertheless important to understand gambling participation in this age group.

Participants were recruited into the survey using an area-based frame made up of New Zealand Census 2013 meshblocks as a sampling frame. Meshblocks are the smallest geographical unit for which statistical data is reported by Stats NZ. The selection process was stratified. A sample of meshblocks was selected first, followed by a sample of dwellings within each selected meshblock. One eligible adult from each selected dwelling. Respondents could only be interviewed at their own usual residence; that is, if they were visiting a household that was selected for inclusion in the HLS they could not be interviewed as part of that household. This process ensured that people were not counted twice.

Based up on the 2013 census data, population projection counts were estimated. These were produced by Stats NZ according to assumption specified by the Ministry of Health. The populations were calculated by updating the census usually resident population count at 5 March 2013 for factors such as non-response to the census ethnicity question and net census undercount. The size of the target estimated population was 3,772,995 individuals.

3.2 DATA COLLECTION

The survey was conducted between May 5 and December 7, 2016. The interviews were face-to-face in respondents' homes, using a Computer Assisted Personal Interview (CAPI) method. A 'visit' refers to one visit on one day during a particular time period. Up to 10 visits to each sampled dwelling were made at different times of the day and on different days of the week, before accepting that a dwelling was non-contactable. Figure 3-1 shows interviews lasted from one minute to one hour depending on the answering speed of the participants and the extent on their involvement with gambling. The median duration for the gambling questions was 9.5 minutes.

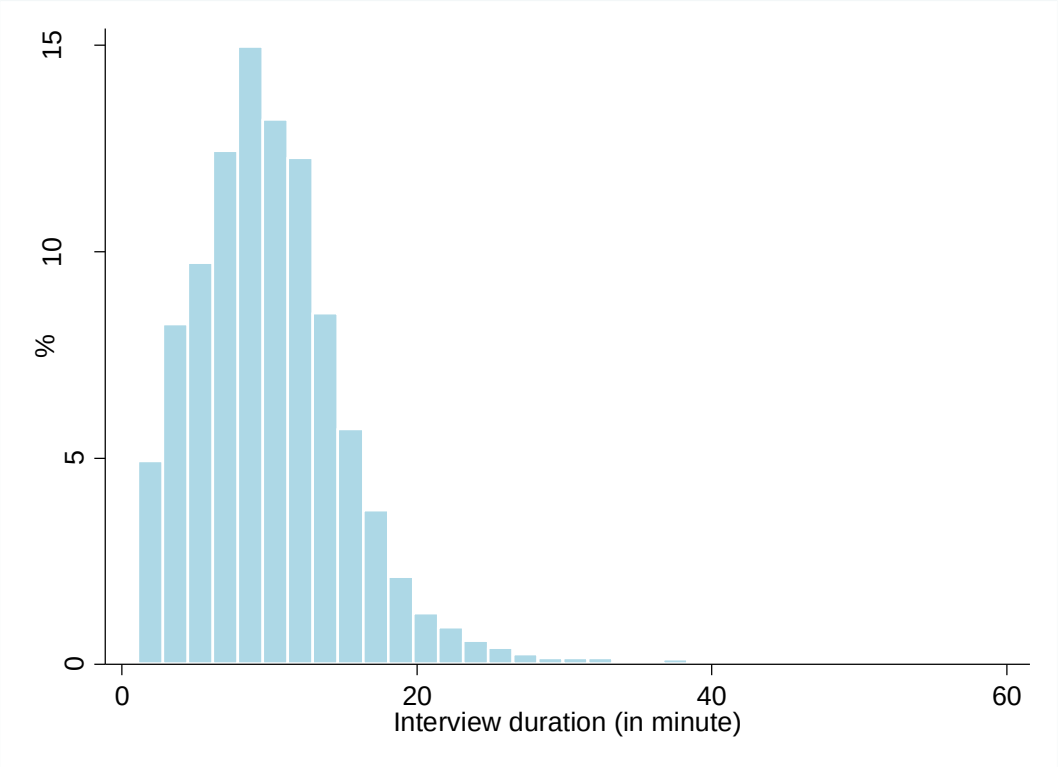


Figure 3-1: Interview duration for 2016 HLS: gambling section

The un-weighted response rate was 75% (and the weighted response rate was 66%). Response rate is a measure of how many of the people selected to take part in the survey actually participated.

3.3 RESPONDENTS

The total of 3,854 respondents were interviewed across all 16 regions of New Zealand. This included prioritised ethnicity groups of 930 Māori, 615 Pacific people, 325 Asian people, and 1,984 people of European/Other ethnicity (the prioritised ethnicity system is addressed in Section 3.8.1). Table 3-1 below summarises the key socio-demographic characteristics of the participants.

Table 3-1: 2016 HLS socio-demographic characteristics

	Sample size	Weighted proportion
Gender		
Male	1,575	48.7
Female	2,279	51.2
Age		
15-17	83	4.0
18-24	336	13.8
25-44	1,338	32.4
45+	2,097	49.8
Prioritised Ethnicity		
Māori	930	13.2
Pacific	615	5.6
Asian	325	13.9
European/Other	1,984	67.3
Deprivation		
Low	878	30.9
Mid	1,347	43.4
High	1,629	25.7
PGSI		
Non-problem gambler	2,449	65.5
Low-risk gambler	148	3.3
Moderate-risk gambler	70	1.5
Problem gambler	19	0.1
Gambling type		
Infrequent gambler	1,855	60.0
Non-continuous gambler	685	15.6
Continuous gambler	146	2.8
Number of gambling activities participated in		
None	1,168	29.6
1	1,050	26.9
2	665	17.2
3	457	12.1
4 or more	514	14.2
Total respondents	**3,854**	**100.0**

3.4 QUESTIONNAIRE CONTENT

The 2016 HLS questionnaire contained 59 questions on gambling. This was the largest section of the questionnaire.[3] To facilitate comparisons with previous surveys, the majority of these questions were sourced from the 2006/07 GBAS, previous years of the HLS, and the 2005 Gambling Participation and Attitudes Survey, which was led by the Department of Internal Affairs. The HLS questionnaire was reviewed each survey year and modified, if necessary, to reflect changes in the gambling environment and priorities for health promotion programmes relating to gambling harm. The questionnaire was also piloted to assess its length, and to ensure that questionnaire items were easy to understand and answer.

3.5 WEIGHTING

Weighting adjustment procedures were applied to the 2016 HLS dataset. This is to ensure that findings from the survey are representative of the New Zealand population. The weight can be thought of as the number of people in the population represented by each of the 3,854 survey participants from the 2016 HLS. Five variables were included in the weighting procedures, these are presented in Table 3-2.

Table 3-2: Weighting variables

Variable	Description
Sampling unit	2013 meshblock
Strata	Pacific-dense meshblock or other meshblock
Sampling weight	Inverse probability that a participant will be selected into the survey adjusted for non-response
Post-strata	Benchmark groups of age (15-24, 25-34, 45-54 and 55+), gender (male, female), and prioritised ethnicity (Māori, Pacific, Asian and Other)
Post-stratum weight	2016 estimated resident population of New Zealand population in each of the post-strata groups

3.6 SAMPLING ERRORS

Sampling error is the type of error that arises when collecting information from a subset (sample) of the population, rather than the whole population. The extent of the sampling error depends on the sample size, variability of the characteristic of interest and the complexity of the sampling design. A complex design like that used in the 2016 HLS is less precise than a simple random sample with the same sample size, but is much more precise than could be achieved by a simple random

[3] The questionnaire is available online: https://www.hpa.org.nz/research-library/research-publications/2016-health-and-lifestyles-survey-questionnaire

sample with the same budget. The sampling errors (confidence intervals) for survey estimates in the 2016 HLS were calculated using the delete-a-group jackknife method (Kott, 1998).

3.7 95 PERCENT CONFIDENCE INTERVALS

In this report, we use 95% confidence intervals (CI) to represent the sampling errors for estimates. When the sample size is small (other things being equal), the confidence interval is generally wider (ie, the point estimate is less precise),

The Korn and Graubard (1998) method has been used when the proportion estimates were very small or large (eg, when the conventional confidence interval included values outside the range from 0 to 100%), or when groups had small sample sizes (less than 30).

3.8 DERIVED VARIABLES AND MEASURES

The survey questionnaire was designed to ensure that the data collected was reliable and valid. It collected demographic information such as employment status, age, gender and ethnicity. It also contained several internationally validated measures designed to monitor gambling harm and gambling activities. The measures and derived variables used in this report are listed below.

3.8.1 Ethnicity

In the HLS, respondents had the opportunity to select as many ethnic groups as they felt they identify with. Both total-response and prioritised ethnicity has been used in this report.

Total-response ethnicity refers to whether or not a respondent identified with an ethnic group. A single respondent may fit into more than one ethnicity group. Because of this, total response ethnicity groups should not be compared. For example, a respondent who identifies as both Chinese and Māori will appear in both the Māori group and the Asian group. Consequently, the Māori and Asian groups should not be directly compared; Māori can only be compared with the non-Māori group and Asian can only be compared with non-Asian.

Prioritised ethnicity refers to where each respondent is allocated to a single ethnic group, in the prioritised order of Māori, Pacific, Asian, Other/European. For example, if someone identified as being both Chinese and Māori, their prioritised ethnicity is Māori for the purpose of analysis. The prioritised ethnicity group European/Other effectively refers to non-Māori, non-Pacific, and non-Asian people. Prioritisation is a method outlined in the Ethnicity Data Protocols for the Health and Disability Sector as a useful method for grouping people into independent ethnic groups for analysis (Ministry of Health, 2004).

3.8.2 New Zealand Index of Socioeconomic Deprivation 2013

The New Zealand small-area Index of relative Socioeconomic Deprivation 2013 (NZDep2013) measures neighbourhood socio-economic deprivation. It has been linked to the 2016 HLS data as

a measure of neighbourhood socio-economic deprivation and as a proxy for individual socio-economic position. The NZDep2013 was created using nine variables from the 2013 Census of Population and Dwellings with a decile value calculated for each meshblock (Atkinson, Salmond, & Crampton, 2014). These variables are: receiving a means-tested benefit, low household income, not owning the home you live in, single-parent family, unemployment, no school qualifications, household overcrowding, no access to internet at home, and no access to a car.

For the analyses reported here, these deciles have been grouped into low (deciles 1 to 3), medium (deciles 4 to 7), and high (deciles 8 to 10) deprivation groups.

3.8.3 Region

In this report, analysis was done by splitting New Zealand into five geographic regions: (some analyses use three regions due to sample size limitations).

1. Auckland (*n*=1,516)
2. Wellington (*n*=510)
3. The North Island, excluding Auckland and Wellington (*n*=1,090)
4. Canterbury (*n*=399)
5. The South Island excluding Canterbury (*n*=339)

3.8.4 Past-year gambler

A past-year gambler is defined as a respondent who was involved in at least one gambling activity in the past 12 months. There were 24 activities asked about in the 2016 HLS. Examples of gambling activities in the questionnaire are: “Placed a bet on a horse or dog race with the New Zealand TAB” and “Played gambling machines or pokies, at a pub or club”. Participants who answered “yes” to any of the activities were classified as a “gambler”, while, those who answered “no” to all of these questions were classified into the “non-gambler” group.

3.8.5 Overseas online gambler

An overseas online gambler defined as a person who had participated in at least one gambling activity on an overseas website in the past 12 months. The question was asked: “In the last 12 months, have you bet any money, bought any tickets or paid to do any of the listed activities online through a website or mobile phone for money or prizes?” Betting through a NZ TAB account or buying a ticket through a NZ MyLotto account were not included (these are the only online gambling activities available through New Zealand websites). Overseas online gambling activities included betting on a horse/dog race through an overseas TAB, internet bingo and online poker. In 2016, there were 11 activities listed. This set of questions was introduced in the 2010 HLS.

3.8.6 Online gambler

An “online gambler” is a participant who played at least one gambling activity on the internet to win money (including overseas based online gambling activities) in the last 12 months. As well as the 11 overseas online gambling activities, an online gambler could have “played an internet game to

win money" or gambled online through an overseas TAB, bookie or betting exchange. (Online NZ Lotto and online NZ TAB are excluded.) In total there were 13 possible activities. Participants who answered "yes" to any of the 13 online activities are classified as an "online gambler", while those who answered "no" to all of these questions are categorised into the "non-online gambler" group.

3.8.7 Gambling type

Gambling types are often classified into two categories: those where winnings can be immediately 'reinvested' (eg, gaming machines) and those where they cannot (eg, lottery tickets). The former is commonly referred to as 'continuous' and the latter as 'non-continuous' gambling (Abbott & Volberg, 1996). For the analysis, respondents' participation in these gambling activities in the previous 12 months was combined with their frequency of participation to create four gambling types. This derived variable was created in the same way as for the 2006/07 GBAS (National Research Bureau, 2007). Definitions of the four gambling types are as below:

- **Non-gamblers**: did not participate in any gambling activities in the previous 12 months.
- **Infrequent gamblers**: participated in some forms of gambling activities less than once a week in the previous 12 months.
- **Frequent, non-continuous gamblers**: participated weekly or more often in non-continuous forms of gambling in the previous 12 months. Non-continuous forms of gambling include lottery games, going to casino evenings/buying raffle tickets for fundraising, participating in sweepstakes, making bets with family/friends, and other gambling activities.
- **Frequent, continuous gamblers**: participated weekly or more often in continuous forms of gambling in the previous 12 months. Continuous forms of gambling include playing electronic gaming (pokie) machines, betting on horse or dog races, or sports events, table games at casinos, housie and bingo, mobile phone games for money, online activities for money or prizes through an overseas website.

3.8.8 Problem Gambling Severity Index (PGSI)

Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001) is a 9-item scale used to assess people's experiences of gambling-related harm in the last 12 months. An example item is: "Thinking about the last 12 months, how often have you bet more than you could really afford to lose?" Participants rated themselves on a 4-point scale from 0 (never) to 3 (almost always).

Response values from each participant were added to calculate the total score and 'refused' or 'don't know' was coded as 'never' (0). Possible scores range from 0 to 27 with higher scores being indicative of greater problem of gambling. This 9-item scale had a high internal consistency (a Cronbach's alpha of 0.89).

For comparison purposes, the PGSI scores were then differentiated into four gambler subtypes in line with an international study of gambling (el-Guebaly et al, 2015). These subtypes are presented in Table 3-5. Because the number of respondents who were classified as 'problem gamblers'

(*n* = 19) was too small to be analysed separately, 'moderate-risk' and 'problem gamblers' were combined into one group, referred to in this report as 'moderate-risk/problem gamblers'.

Table 3-3: Levels of PGSI

PGSI score	Five groups	Four groups	Three groups
NA*	Non-gamblers	Non-gamblers	Non-gamblers
0	Non-problem gamblers	Non-problem gamblers	Non-problem gamblers
1-2	Low-risk gamblers	Low-risk gamblers	Experienced some level of gambling harm
3-7	Moderate-risk gamblers	Moderate-risk/problem gamblers	
8-27	Problem gamblers		

** NA = not applicable*

In addition to assessing the gambling behaviour of respondents in each of the risk groups, gambling behaviour was also assessed by respondents who experienced at least some level of gambling harm. For these analyses, 'low-risk', 'moderate-risk', and 'problem gamblers' were combined into one group, referred to in this report as people who 'experienced at least some level of gambling harm'.

3.8.9 Number of gambling activities

The number of gambling activities is an important indicator due to the direct correlation to gambling harm. However, there is no standardised way of measuring number of gambling activities, and previous New Zealand studies (eg, New Zealand Health Survey, Participation and Attitudes Survey and the National Gambling Study) have used different survey questions and response options. For this reason, it is important to exercise caution when comparing findings reported here against other national studies. In the 2016 HLS, participants could report up to 24 gambling activities that they had participated in over the past 12 months.

Number of gambling activities for comparison over time

The survey questions included in the GBAS and HLS that assess number of gambling activities have also changed from year to year. In some years, an activity may have been asked about in multiple questions. For example, between 2006/07 and 2010, "Made a TAB bet on horse or dog races, or sports events" was asked about in a single question but from 2012, horse/dog races and sports betting were asked about in two separate questions. To allow for comparisons over time, some activities have been grouped, as described in the following list. Participation in each category is counted as one gambling activity and there are eight possible activities in total.

1. Made a TAB bet on horse or dog races, or sports events.
2. Bought a Lotto, Keno, Strike, Powerball, Big Wednesday, Bullseye, Play3, Instant Kiwi or scratch ticket.
3. Played gaming machines, or pokies, at a pub or club.

4. Played gaming machines, or pokies, at one of the six casinos.
5. Played table games, such as card games or dice, at one of the six casinos.
6. Played Housie or Bingo for money.
7. Played an Internet game to win money or any other overseas online gambling activity.
8. Informal gambling, including raffle tickets, casino fundraising evenings, sweepstakes with friends or colleagues, or bets with family or friends on card games or the like.

3.8.10 Early signs of risky gambling

This scale was used to assess participants' knowledge/awareness of activities that could indicate that a gambler's behaviour was becoming risky. Respondents were read out a list of five things that can happen when people gamble, and asked whether they thought each was an early sign that a person's gambling was becoming risky. The list included three items that are signs of risky gambling and are described in the Choice Not Chance health promotion campaign:

1. They don't want anyone else to know that they are gambling.
2. Their gambling sometimes causes them stress.
3. They go back to the pub to try to win back last night's loss.

As well as two items that are *not* signs of risky gambling:

1. They set aside a certain amount of money a month to spend on gambling.
2. They go to a casino with their friends for a birthday celebration.

To evaluate how well respondents could identify the early signs of risky gambling, they were each given a score out of five. They scored one point for each of the three early signs of risky gambling that they identified. For the two items that were not early signs of risky gambling, respondents were given one point if they identified that they were *not* early signs of risky gambling. Possible scores range from zero to five with higher scores being indicative of greater knowledge of the early signs of risky gambling.

3.9 DATA ANALYSIS

3.9.1 Differences between subgroups in 2016

To understand patterns of gambling behaviour and gambling harm in New Zealand, it is important to compare gambling participation among different population and social groups. Response patterns by subgroups were first compared using 95% confidence intervals. The differences identified using non-overlapping confidence intervals are noted in the report as 'more likely/less likely'.

In other cases, where the differences between subgroups could not be determined solely using confidence intervals, appropriate statistical significance tests including *t*-tests, ANOVA and logistic regression models were computed. Terms such as 'significantly higher/significantly lower' are included to indicate that the difference has been tested using a statistical significance test. When the number of respondents in a subgroup was fewer than 30, any differences between that group and others are not commented on in the report, because the small sample size means that the results are subject to a very wide margin of error.

3.9.2 Times series analysis

Where the data are comparable with the 2006/07 GBAS and the four previous HLSs, responses collected between 2006/07 and 2016 are presented in the report. Table 3-7 presents the sample size for each HLS by ethnicity group.

Table 3-4: Sample size of the HLS over time, by total response ethnicity

Year	Māori	Pacific	Asian	Total
2006/07	514	267	346	1,973
2008	416	324	82	1,608
2010	460	326	124	1,740
2012	621	484	220	2,672
2014	564	421	225	2,594
2016	930	706	373	3,854

The benchmarking of the HLS datasets 2006/07 to 2014 have been revised to updated estimates of the resident population of New Zealand. Because of this improvement in the benchmarking data, the values in the historical data in this report may differ from those previously quoted in reports based on HLS data. The revised values are more accurate because they better reflect the New Zealand population, but they are generally within the confidence intervals of the previously reported values.

Logistic regression was used to test for linear time trends where enough data points allow it (see section 3.9.4 for a description of logistic regression modelling). The trends have been illustrated in the graphs as solid lines. In some graphs, the data from each survey is displayed as a dotted line.

Significant differences between 2016 and 2014, and differences between 2016 and 2006/07 have been tested using logistic regression, and where differences exist, they are noted in the tables.

3.9.3 How to read the tables of percentages

The percentages presented in tables and graphs in this report may not add up to 100% due to rounding. There are also a number of questions where respondents could provide multiple responses, for example, participation in different types of gambling. Furthermore, when a space in the table is marked with "-", this means that respondents in that year were not asked that particular option, or did not provide any response to it.

The numbers in the tables about participation should be read as the proportion of the people of a certain demographic group (shown in the top row) who have participated in a certain gambling activity (shown in the leftmost column). The sample size for each demographic subgroup (ie, the number of respondents in that group) is shown at the bottom of each table.

As an example, the interpretation of Table 3-5 'Participation in gambling activities during the previous 12 months, by demographics, 2016' is presented below.

Table 3-5: Participation in gambling activities during the previous 12 months, by demographics, 2016 [Compressed excerpt as an example]

Gambling activity	Gender		Age group				Total
	Male	Female	15 - 17	18 - 24	25 - 44	45+	
	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)	% (CI)
Lotto	56 (52–59)	54 (51–57)	6 (0–13)	29 (21–36)	55 (51–60)	66 (63–68)	55 (53–57)
Did not participate in any activities	28 (24–31)	36 (29–34)	61 (46–76)	42 (34–50)	30 (26–34)	23 (21–26)	30 (27–32)
Sample size (n)	1,575	2,279	83	336	1,338	2,097	3,854

Base = all respondents (n = 3,854)

Interpretation:

- Of the 1,575 males interviewed (shown in the "sample size *n* =" line under "Male" demographic), 56% had bought a lottery ticket in the previous 12 months. The 95% confidence interval puts the estimate between 52% and 59%. Overall, 55% (95% CI = 53–57%) of New Zealand adults had bought a lottery ticket, where among those aged 45 years or over, 66% (63–68%) had done so. The table also shows that 61% (46–76%) of New Zealanders aged 15 to17-years-old had not participated in any gambling activities. Overall, only 30% (27–32%) of New Zealand adults had not participated in any gambling activities.

To make a statement about the results in the table, we would first look at the group of interest in the top row (eg, "of those aged 45+ years") then look down the page from this line to the percentage shown "66 (63 – 68)" on the horizontal line corresponding to the activity of interest ("Lotto") and finally the title of the table, for further context ("in the previous 12 months").

Base

The “base” has been noted under most graphs and tables in this report. The base is who was included in the analysis. In the above example (Table 3-5), the base is all respondents, so the proportions in the ‘Total’ column represent all New Zealand adults.

3.9.4 Regression modelling

Regression models were used throughout this report to predict various outcomes relating to gambling participation and gambling harm and to build profiles. The following sections explain regression modelling in general, as well as how regression has been used in this report.

Regression

Regression is a statistical technique for describing data. It is used to explain the relationship between one dependent variable (outcome) and one or more independent (predictor) variables. When multiple predictor variables are included, the results give the relationship between each predictor variable and the outcome variable, holding all other variables in the model constant. Both linear and logistic regression have been used in this report to build profiles of respondents who experience various outcomes, depending on the type of outcome. Linear regression was used for continuous outcome variables and logistic regression was used for dichotomous outcomes. Logistic regression was most frequently used in this report and more details of this technique are below.

Logistic regression

Logistic regression is widely used in the fields of epidemiology and public health, in particular for examining the predictors of being at risk for certain health outcomes, for example gambling harm (see for examples: Marchica, Zhao, Derevensky, & Ivoska, 2016; Parodi, Dosi, Zambon, Ferrari, & Muselli, 2017; Whiting et al, 2016). Multiple predictors can be included in a logistic regression model and they can be a mixture of categorical (eg, gender and ethnicity groups) and continuous (eg, PGSI score and number of gambling activities).

The results of logistic regression presented in this report are ‘odds ratios’. These are the ratio of the odds of the outcome for one level of the predictor, compared with another level. If the odds ratio is greater than one, then the outcome is more likely, and if it is less than one then the outcome in less likely. To demonstrate the variability around the point estimate, and its precision, 95% confidence intervals (95% CI) are provided. If the 95% confidence intervals of two estimates do not overlap, the difference can be deemed statistically significant.

Model building

Multivariate regression models were performed to identify predictors for each of the outcome variable of interest (such as the predictors for past-year gambling participation). Several demographic variables such as age, gender, ethnicity and area deprivation status, as well as gambling behaviour variables, such as PGSI score, were considered as predictors. A full list of predictors can be viewed in the Appendix 11.1 (Table 11-1).

These factors were selected on the basis that they are associated with the relevant outcome variables in previous gambling reports (eg, Health Sponsorship Council, 2010).

To produce the simplest and most accurate regression models, the model fitting procedure began by including all demographic and gambling behaviour predictors. Backward selection was used to sequentially remove non-significant factors from the model. Only factors that significantly predicted the outcome variable (p<0.05) were included in the final models.

Interpretation of the profiles

An example of a profile using logistic regression is given in Table 3-6. In this model, the outcome variable is "someone had to go without something they needed or bills weren't paid because too much was spent on gambling by another person". This model had two significant predictors; ethnicity (as a categorical variable) and 'Number of gambling activities participated in' (as a continuous variable).

Table 3-6: Predictors of going without because of someone's gambling in the household

	Value	95% CI of Value		Odds ratio	95% CI of Odds ratio	
		Lower	Upper		Lower	Upper
Overall	7.7%	6.5%	8.9%			
Ethnicity						
Māori	19%	15%	23%	**3.48*** **	2.41	5.01
Pacific	7.6%	3.3%	12%	1.33	0.65	2.73
Asian	3.5%	0%	7.23%	0.63	0.14	2.84
European/Other	6.4%	5.0%	7.8%	Reference		
Number of gambling activities participated in (mean out of possible 12)						
	2.30	1.98	2.62	**1.21*** **	1.09	1.34

Base = all respondents (excluding don't know/refused; n = 3,808)

**** p < 0.001*

Outcome variable: someone had to go without something they needed or bills weren't paid because too much was spent on gambling by another person (1 = yes, 0 = no)

Categorical variables

The 'value' column of Table 3-6 for ethnicity gives the proportion of each ethnicity group who experienced 'going without'. For example, 19% (95% CI; 15-23%) of Māori experienced 'going without'. This proportion is not adjusted for other variables in the model.

The odds ratios in this profile can be used to determine whether people of different ethnicities have different likelihoods of 'going without'. European/Other was used as the reference group, and the odds of 'going without' for other ethnicities were compared with this group. The odds ratio for Māori is in bold and has three asterisks, indicating that the relationship between being Māori and 'going without' is statistically significant (at the p < 0.001 level), when 'Number of gambling activities' is controlled for.

The value of 3.48 is interpreted as: the odds of a Māori individual 'going without' are 3.48 times the odds of a European/Other individual. More generally speaking, the odds ratio is statistically

significant and greater than one which is interpreted as: The likelihood of a Māori individual 'going without' is higher than the likelihood of someone of European/Other ethnicity.

The odds ratios of Pacific and Asian ethnicities are not statistically significant, being Pacific or Asian are not significant predictors of 'going without', compared with the European/Other group.

Continuous variables

'Number of gambling activities participated in' is a continuous variable, with possible range of 0 to 24. Continuous variables do not have an explicit reference category. The odds ratio (OR) of this predictor (OR=1.21; 95% CI = 1.09-1.34) is interpreted as: For each additional gambling activity participated in, the odds of 'going without' increase by 21%. In more general terms, the odds ratio is significant and greater than one (because even the low end of the 95% confidence interval, 1.09, is above one), so: as the number of gambling activities increases, the likelihood of 'going without' also increases.

The 'value' column of Table 3-6 for 'Number of gambling activities participated in' gives the mean number of gambling activities for those who experienced 'going without'. In this case, those who have experienced 'going without' participated in an average of 2.3 gambling activities in the past year.

4. GAMBLING PARTICIPATION

Gambling activities in New Zealand are classified by the Gambling Act 2003 according to the amount of money spent and the risk of harmful gambling associated with each activity, ranging from Classes 1 to 4. Class 1 represents low-stake, low-risk gambling while Class 4 represents the highest-risk forms of gambling and is subject to strict licensing criteria. Casino operations and New Zealand Lotteries Commission lotteries are treated as separate classes (Department of Internal Affairs, 2015).

The New Zealand Racing Board and the New Zealand Lotteries Commission are the only organisations able to conduct remote interactive gambling, such as gambling over the internet. While it is illegal to advertise overseas gambling in New Zealand, it is not illegal to participate in gambling on an overseas-based website, or to gamble on overseas competitions and games. More information about gambling regulation in New Zealand is available from the Department of Internal Affairs.

According to the Department of Internal Affairs (2017; see Table 4-1), it is estimated that in recent years, New Zealanders have spent around $2 billion on gambling every year, with the overall expenditure in 2015/16 ($2209 million) being 5.6% ($118 million) more than the previous year. Following adjustment for the effects of inflation and changes to New Zealand's population, it is estimated that gambling expenditure increased by 2.6%.

Table 4-1: Gambling expenditure in the four main sectors between 2009/10 and 2014/15

Gambling Sectors	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
	$m	$m	$m	$m	$m	$m	$m
NZ Racing Board (TAB)	278	273	283	294	310	325	342
NZ Lotteries Commission	347	404	419	432	463	420	437
Non-casino gaming machines	849	856	854	827	806	818	843
Casinos	440	448	483	490	486	527	586
Total	**1,914**	**1,982**	**2,038**	**2,042**	**2,065**	**2,091**	**2,209**

Note: The figures are actual dollars (non-inflation adjusted) for gambling operators' financial year-end.
Source: Gambling Expenditure Statistics, Department of Internal Affairs (2017)

The following section presents information about the percentage of New Zealand adults who reported engaging in gambling in the last 12 months, as well as the types of gambling activities they engaged in.

4.1 GAMBLING ACTIVITIES IN THE PREVIOUS 12 MONTHS

This section examines the profile of New Zealand adults who had gambled in the previous 12 months. It reports on general participation in gambling, as well as participation in specific gambling activities.

4.1.1 Past-year gambling participation

All respondents were asked whether they had engaged in specific gambling activities in the last 12 months. In 2016, 7 in 10 New Zealand adults (70%) had taken part in at least one gambling activity in the previous 12 months; this translates to approximately 2.7 million people (see Table 4-2).

Key findings on subgroup differences were that:

- younger adults aged 15 to 17 years were less likely than those aged 25 years and over to have gambled in the past year. People aged 25 to 44-years-old were less likely to be past-year gamblers than people aged 45 years and over
- Pacific and Asian people were less likely than Māori and people of European/Other ethnicity to have gambled in the past year. Past-year gambling participation rates for Māori and people of European/Other ethnicity did not differ
- past-year gambling participation did not differ by deprivation status.

Table 4-2: Past-year gambling participation among New Zealand adults (weighted %, estimated number of people in the 2016 New Zealand population)

	Prevalence % (95% CI)	Estimated number of people in NZ
Total population	70 (68-73)	2,652,000 (2,566,000-2,739,000)
Gender		
Male	72 (69-75)	1,327,000 (1,268,000-1,387,000)
Female	68 (66-71)	1,325,000 (1,268,000-1,381,000)
Age groups		
15 - 17 years	38 (24-55)	57,000 (35,000-82,000)
18 - 24 years	58 (50-66)	303,000 (261,000-344,400)
25 - 44	70 (65-74)	851,000 (798,000-904,000)
45+ years	77 (74-79)	1,442,000 (1,398,000-1,485,000)
Ethnicity		
Māori	73 (68-78)	363,000 (339,000-387,000)
Pacific	61 (55-68)	130,000 (116,000-144,000)
Asian	52 (45-59)	270,000 (233,000-307,000)
European/Other	74 (72-77)	1,889,000 (1,820,000-1,958,000)
Deprivation status		
Low (1 - 3)	73 (68-77)	849,000 (797,000-901,000)
Mid (4 -7)	70 (67-74)	1,141,000 (1,082,000-1,200,000)
High (8 - 10)	67 (63-71)	645,000 (602,000-688,000)

Base = all respondents (n = 3,854)

4.1.2 Past-year gambling participation: comparison with previous years

There is a significant overall decreasing time trend of participation in gambling activities from 2006/07 to 2016. Participation has plateaued at 70% since 2012 (see Figure 4-1).

The prevalence of past-year gambling participation in 2016 did not differ from that in 2014, but was significantly lower than in 2006/07, 2008 and 2010 (see Table 4-3).

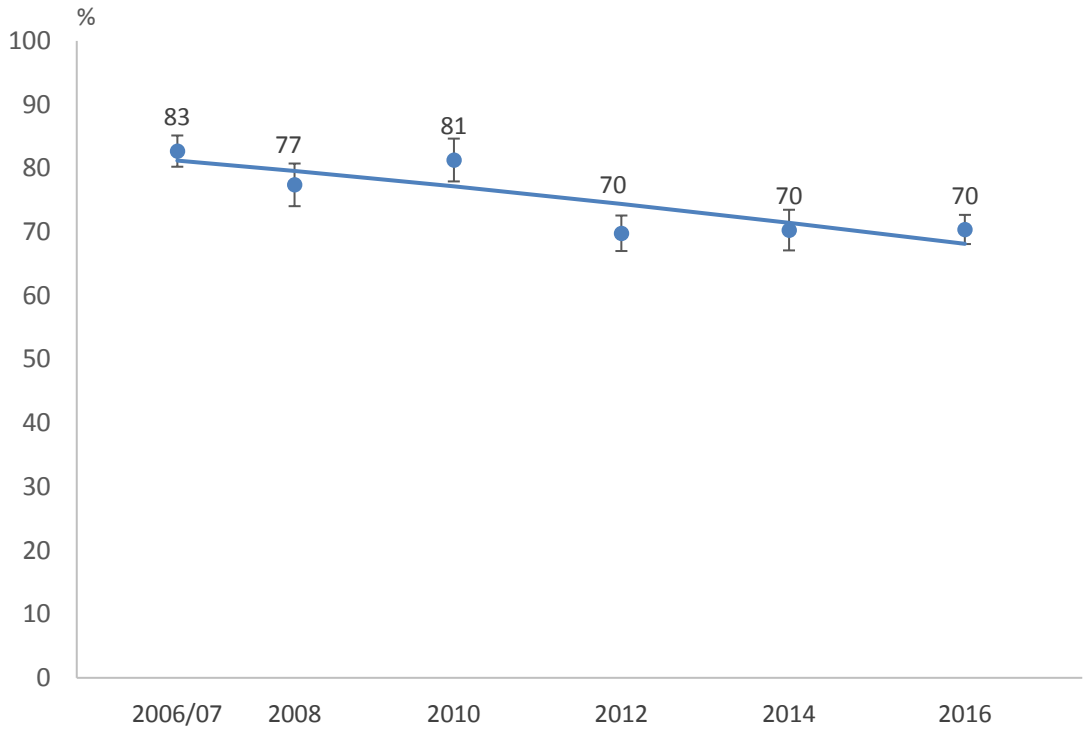


Figure 4-1: Past-year participation in gambling, 2006/07 to 2016

Base = all respondents

Past-year gambling participation is decreasing significantly over time for Māori and Pacific people and for all age groups. Although the prevalence of past-year gambling decreased significantly for Asian people between 2006/07 and 2016, there is no significant overall time trend for this group (and hence no solid line for Asian people in Figure 4-2). Māori and Pacific are decreasing their gambling participation at around the same rate (see Figure 4-2). People of all ages are participating less in gambling over time, with the fastest decrease for people aged 15 to 17 years and the slowest decrease for people aged 45 years and over (Figure 4-3).

People of Māori and Asian ethnicity and all of the age groups experienced a significant reduction in prevalence of gambling compared with 2006/07. Although Pacific people have an overall decrease in their gambling participation rate, there is no significant difference between the rate in 2006/07 and 2016. The biggest drop in participation between 2006/07 and 2016 occurred among Māori people and people under 45 (see Table 4-3). The prevalence for Māori dropped from 88% to 73%, and the prevalence for people aged between 15 and 17 dropped from 61% to 38%.

None of the subgroups experienced a significant change between 2014 and 2016, except for an increase in the prevalence of gambling by young people aged 15 to 17.

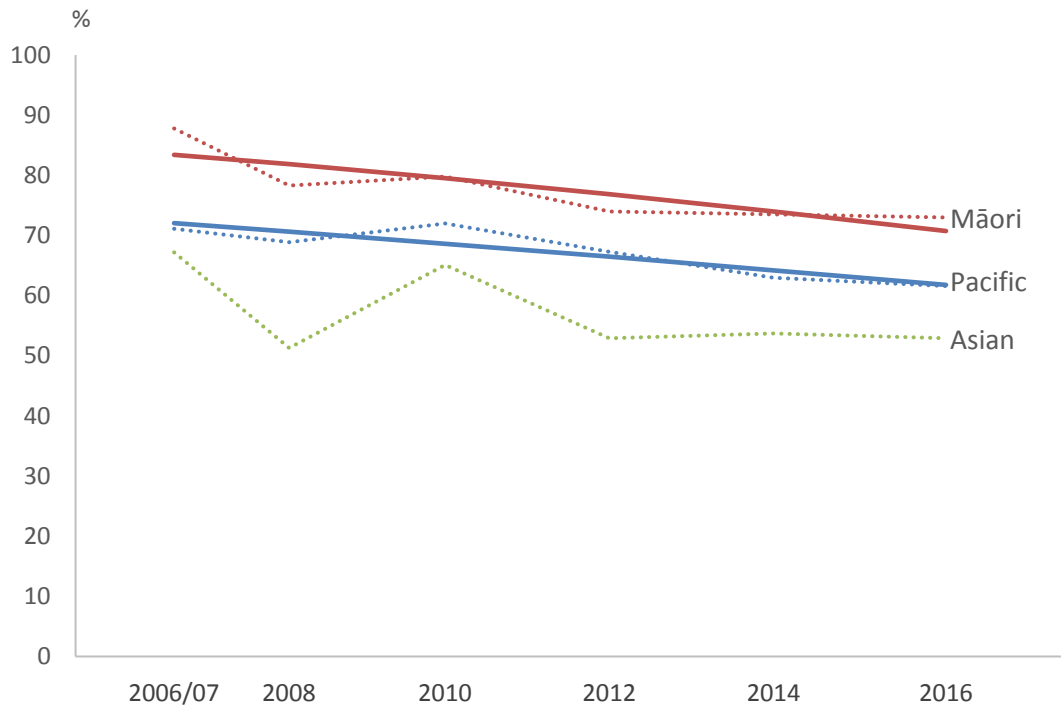


Figure 4-2: Past-year participation in gambling for Māori, Pacific and Asian people, 2006/07 to 2016

Base = all respondents; solid lines show significant linear time trends (from logistic regression)

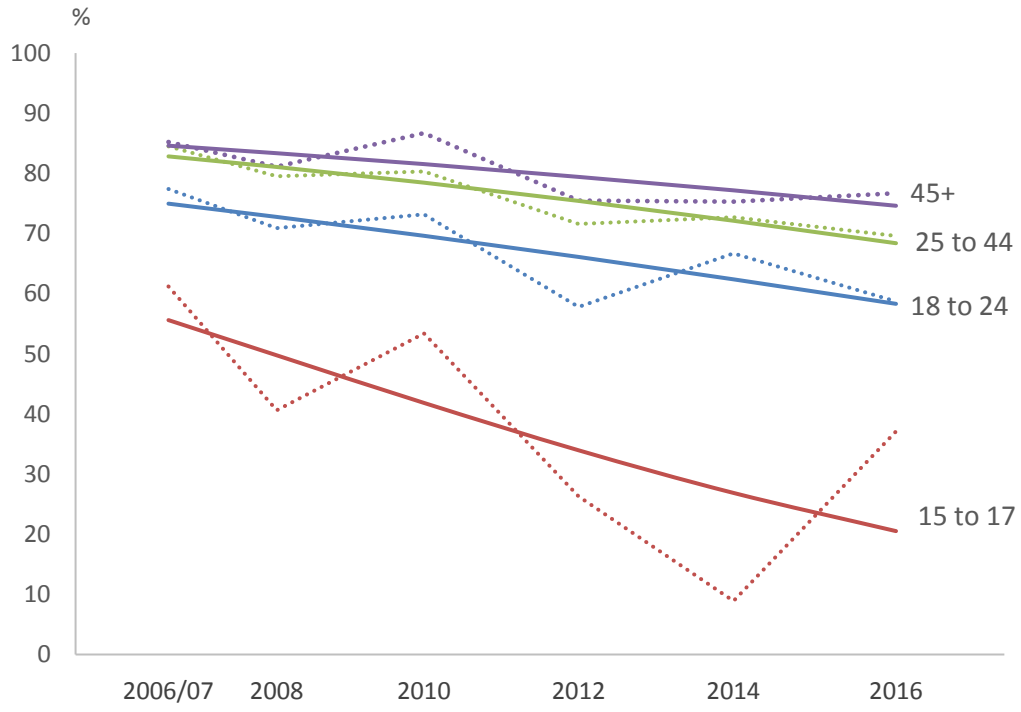


Figure 4-3: Past-year participation in gambling by age group, 2006/07 to 2016

Base = all respondents

Table 4-3: Past-year participation in gambling, by ethnicity and age group, 2006/07 to 2016

Year	Overall %	Ethnicity (total response)			Gender		Age			
		Māori %	Pacific %	Asian %	Female %	Male %	15 – 17 %	18 – 24 %	25 – 44 %	45+ %
2006/07	83 (80–85)	88 (84–92)	71 (64–78)	67 (60–74)	81 (78–85)	84 (81–87)	61 (53–70)	77 (69–86)	85 (81–88)	85 (82–89)
2008	77 (74–81)	78 (73–84)	69 (63–75)	51 (31–71)	76 (72–81)	79 (73–84)	41 (23–60)	71 (57–85)	80 (75–84)	81 (77–85)
2010	81 (78–85)	80 (74–85)	72 (65–79)	65 (51–80)	82 (78–86)	81 (75–86)	53 (29–77)	73 (63–84)	80 (74–86)	87 (83–90)
2012	70 (67–73)	74 (69–79)	67 (60–74)	53 (43–63)	72 (68–75)	68 (64–72)	26 (13–43)	58 (47–69)	72 (68–76)	76 (72–79)
2014	70 (67–74)	74 (68–79)	63 (56–70)	54 (42–65)	70 (66–74)	71 (66–75)	9 (3–19)	67 (57–77)	73 (69–77)	75 (72–79)
2016	70* (68–73)	73* (68–78)	62 (56–68)	53* (46–60)	68* (66–71)	72* (69–75)	38* (24–55)	59* (51–67)	69* (65–74)	77* (74–79)

Note: Parentheses show 95% confidence intervals

** Significant difference between 2016 and 2006/07*

Base = all respondents

4.1.3 Gambling participation across region

To study gambling participation by geographic region, the main centres of Auckland, Wellington and Canterbury were extracted. For comparison, the rest of the North Island, excluding the Auckland and Wellington regions, were grouped together, and the rest of the South Island, excluding Canterbury, were grouped together.

As can be seen in Figure 4-4, the highest prevalence of gambling participation was in the Wellington region and the rest of the North Island (both 77%), and the lowest gambling participation rate was in Auckland (60%).

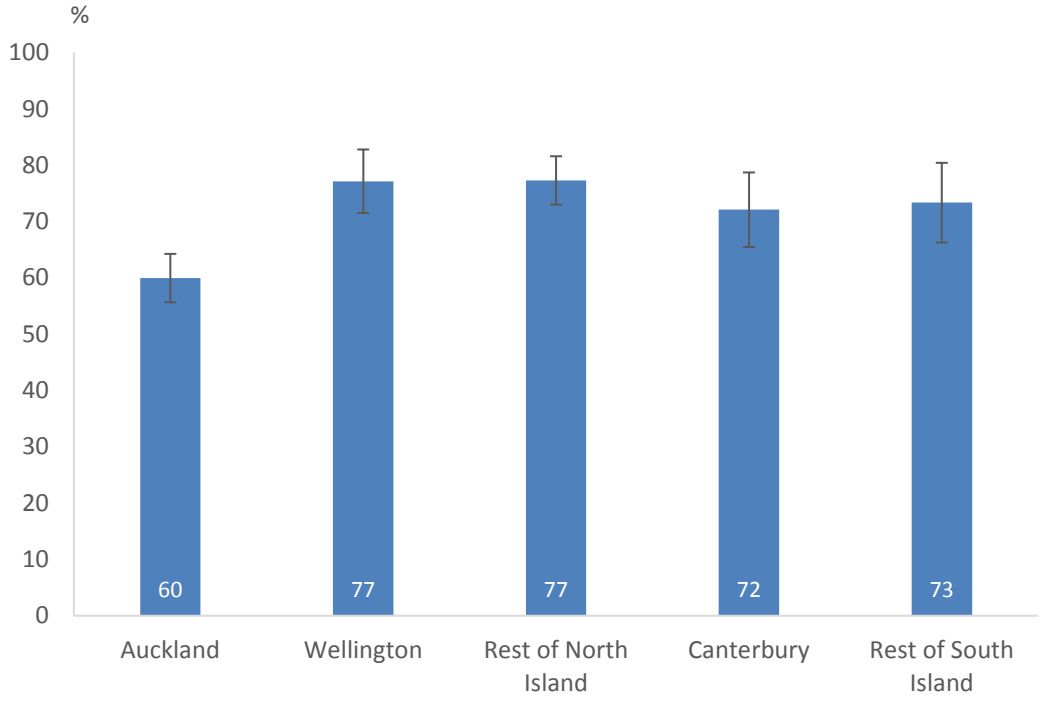


Figure 4-4: Participation in gambling in the past 12 months by region, 2016

Base = all respondents (n = 3,854)

4.1.4 Profile of past-year gamblers

In 2016, a typical person who participated in at least one gambling activity in the past year was likely to: 1) be aged 45 years old or older; 2) be born in New Zealand; 3) drink alcohol; 4) work full-time or part-time; 5) play games on mobile devices, not for money; 6) smoke; and 7) not live in the Auckland region.

Table 4-4: Predictors of past-year gambling participation

	Proportion	95% CI of proportion		Odds ratio	95% CI of odds ratio	
		Lower	Upper		Lower	Upper
Overall						
	70%	68%	73%			
Age						
15-17 years	38%	23%	53%	0.73	0.33	1.60
18-24 years	58%	50%	66%	Reference		
25-44 years	70%	65%	74%	**1.73**	1.05	2.83
45+ years	77%	74%	79%	**3.57**	2.28	5.59
Born in New Zealand						
No	59%	55%	64%	Reference		
Yes	75%	73%	78%	**1.58**	1.24	2.01
Drinking status						
Non-drinker	53%	49%	58%	Reference		
Drinker	75%	71%	78%	**1.86**	1.44	2.42
Risky drinker	85%	82%	89%	**3.78**	2.45	5.84
Employment						
Full-time	76%	73%	80%	**1.97**	1.42	2.73
Part-time	75%	70%	80%	**1.70**	1.16	2.48
Homemaker	67%	59%	75%	**2.07**	1.25	3.41
Other	60%	56%	64%	Reference		
Frequency play games on mobile device (not for money)						
Never	67%	64%	70%	Reference		
Less than once a year to more than once a month	78%	72%	84%	**2.11**	1.32	3.38
Once a week or more	74%	70%	79%	**2.17**	1.57	3.01
Smoking status						
Never smoked	57%	53%	60%	Reference		
Currently smoke	78%	73%	82%	**1.62**	1.11	2.36
Used to smoke	79%	76%	82%	**1.81**	1.37	2.38
Region						
Auckland Region	60%	56%	64%	Reference		
Wellington Region	77%	72%	83%	**1.57**	1.06	2.32
The rest of North Island	77%	73%	82%	**1.63**	1.17	2.28
Canterbury Region	72%	65%	79%	1.41	0.97	2.06
The rest of South Island	73%	66%	80%	1.11	0.71	1.75

Base = all respondents (n = 3,854); ***Bold*** *p < 0.05*

Outcome variable: participated in any gambling activity in the last 12 months (1 = gambler, 0 = non-gambler)

When controlling for all other significant factors, older participants aged 45 years and over (77%) were significantly more likely to be classified as a gambler than those aged 18 to 24 years old (58%). Also, a significantly higher gambling rate was observed among those aged between 25 to 44 years (70%) than both younger groups of participants (15 to 17 years: 38% and 18 to 24 years: 58%).

Respondents who were born in New Zealand (75%) were more likely to gamble compared with those who were born outside New Zealand (59%).

Those who drink alcohol (75%) were more likely to report participating in gambling activities compared with non-drinkers (53%), and those who drink at risk levels were even more likely (85%).

Employment status was also a significant predictor for gambling participation. Those who worked full-time (76%) or those who worked part-time (75%) were more likely to be past-year gamblers compared with those in the Other[4] employment group (60%).

Respondents were asked how often they play games on their mobile devices (phone, tablet, iPad) not for money. Those who said that they never played were less likely to have gambled in the past year than those who said they did play games on their mobile devices (played games on mobile device less often than once a week: 78%; played once a week or more: 74%).

Those who currently smoke (78%) or used to smoke (79%) were more likely to be gamblers than those who had never smoked (57%).

People living in the Auckland region (60%) were less likely to have gambled in the past year that those from other regions of the North Island (77%).

[4] Includes: looking for a job, student, beneficiary, retired, and other.

4.2 PARTICIPATION IN EACH GAMBLING ACTIVITY

The 2016 HLS collected information on past-year participation in a wide range of gambling activities. Key findings are described in the commentary below, and see Figure 4-5 and Table 4-5 for all results.

- Lotto, including Strike and Powerball (Wednesday or Saturday), was the most common form of gambling activity, with over half (55%) of New Zealand Adults having purchased a lottery ticket in the previous 12 months. Of those who had participated in any form of gambling in the past year, over three-quarters (78%) had purchased a lottery ticket in the previous 12 months. Other New Zealand Lotteries Commission products that were captured by the survey included Instant Kiwi/scratch tickets (27%) and Keno, Bullseye tickets or Play 3 tickets (1.8%). Combining those who had bought a lottery ticket, an Instant Kiwi/scratch ticket, and/or a Keno, Bullseye or Play 3 ticket, 61% had bought a New Zealand Lotteries Commission product in the previous 12 months.

- Apart from lottery and Instant Kiwi/scratch tickets, other common forms of gambling activities included buying a raffle ticket and/or attending a casino fundraiser evening (27%), participating in sweepstakes with workmates, friends or family (14%), and betting on horse or dog races (10%).

- Participation in gaming machines, also referred to as pokies, was captured using two categories, differentiated by settings. In 2016, 10% of adults had played gaming machines at a pub or club, while 5% had played gaming machines at one of the six casinos in New Zealand.

- Although participation in online gambling was low, it is interesting to note that 3% of adults bet money or bought tickets online through an overseas website for money or prizes. The most popular form of gambling through overseas websites was betting on horse or dog races or sports events (2%).

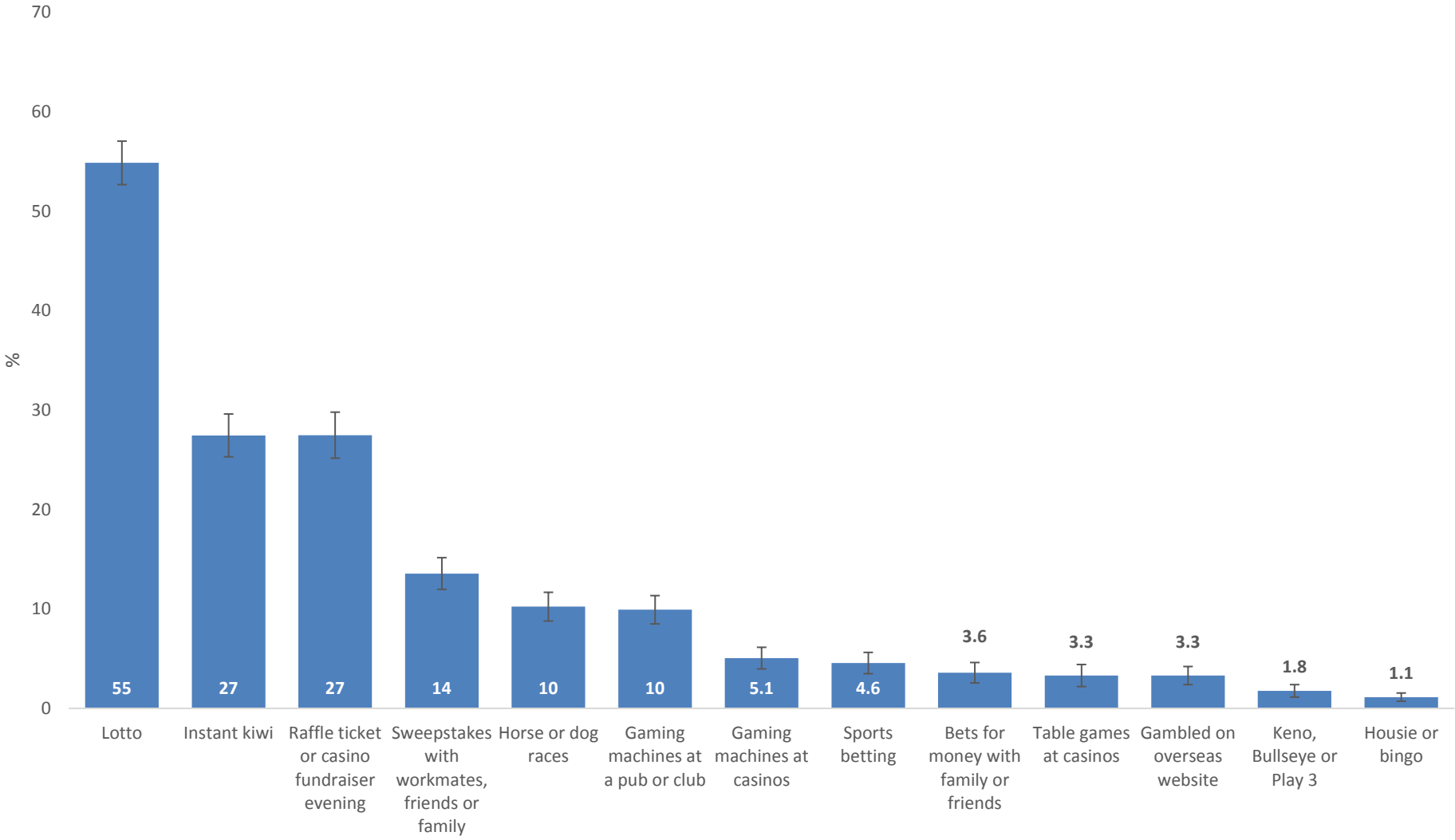


Figure 4-5: Gambling activities participated in during the previous 12 months, 2016

Base = all respondents (n = 3,854)

Notes: 1. 'Lotto' included strike, Powerball, Big Wednesday and Big Saturday tickets. 'Instant Kiwi' included other scratch tickets.

2. Multiple responses allowed, therefore respondents may be represented in more than one category.

4.2.1 Type of gambling activities by subgroups

Participation in different types of gambling activities differed by gender, age, ethnicity, PGSI score, and deprivation level. The different response patterns are summarized below and in Table 4-5. Some caution is required when drawing inferences from these results as the analyses only consider one independent variable at a time and do not adjust for the potentially confounding effects of other independent variables. For example, since there are greater proportions of young people among Māori and Pacific populations but the analyses do not adjust for age, any effects of ethnicity could be due to age differences rather than ethnicity *per se*.

Gender

- Compared with females, males were more likely to have participated in horse or dog races, as well as sports betting.

Age

15 to 17 year olds:

- reported participating in fewer gambling activities than respondents over 18 years of age, and were more likely to have reported that they didn't participate in any gambling activities compared with those aged 25 years and over.
- were less likely to have participated in Lotto and Instant Kiwi compared with those aged 18 years and over, and less likely to have participated in sweepstakes with workmates, friends or family compared with those aged 25 years and over.

18 years and over:

- People aged 25 years and over were more likely to have bought lottery tickets compared with those aged 18 to 24 years.
- People aged 25 years and over were more likely to have bought a raffle ticket or gone to a casino fundraising evening compared with those aged 18 to 24 years.
- People aged 18 to 24 years were more likely to have bet for money with family or friends compared with those aged 45 years and over.
- Compared with those aged over 45 years, people aged 25 to 44 years were more likely to have: 1) used gaming machines in a pub or club, 2) participated in sports betting, and 3) played table games at a casino.

Ethnicity

- Compared with Pacific and Asian people, Māori and those of European/Other ethnicity were more likely to have: 1) bought a raffle ticket or gone to a casino fundraising evening; 2) bought Instant Kiwi or scratch tickets; 3) participated in sweepstakes with workmates, family or friends; and 4) bet on horse or dog races.

- Māori were more likely to have played gaming machines at a pub or club compared with those of European/Other ethnicity and Asian people.

- Pacific people were more likely to have played housie or bingo compared with Asian people or people of European/Other ethnicity.

- Pacific and Asian people were more likely to have reported that they did not participate in any gambling activities compared with Māori or people of European/Other ethnicity.

PGSI score

- Moderate-risk/problem gamblers and low-risk gamblers were more likely than non-problem gamblers to participate in the following activities: 1) horse or dog races, 2) gaming machines at pubs or clubs, 3) gaming machines at casinos, and 4) Keno or Bullseye tickets.

- Moderate-risk/problem gamblers were more likely than low-risk and non-problem gamblers to have participated in gaming machines at a pub or club.

- Moderate-risk/problem gamblers were more likely than non-problem gamblers to have participated in sports betting.

Deprivation level

- There were no gambling participation differences observed between low, mid or high deprivation groups.

Table 4-5: Participation in gambling activities in the previous 12 months, by subgroups, 2016 (multiple responses allowed)

Activity	Gender (%)		Age group in years (%)				Prioritised ethnicity (%)			
	Male	Female	15–17	18–24	25–44	45+	Māori	Pacific	Asian	Other
Lotto	56 (52–59)	54 (51–57)	5.5 (0.8–18)	30 (23–37)	55 (51–59)	66 (63–68)	53 (48–57)	47 (41–54)	41 (34–49)	59 (56–61)
Raffle ticket or casino fundraiser evening	25 (22–28)	29 (26–32)	18 (8–32)	9.2 (5.1–13)	28 (24–32)	33 (30–36)	26 (21–30)	13 (8.6–17)	8.2 (4.9–13)	33 (30–36)
Instant Kiwi	24 (21–28)	30 (27–33)	6.3 (1–19)	35 (26–43)	29 (25–33)	26 (23–29)	32 (27–37)	18 (13–24)	10 (5.5–15)	31 (28–34)
Sweepstakes with workmates, friends or family	14 (12–17)	13 (11–15)	0.6 (0–3.5)	6.7 (3.5–11)	14 (11–16)	16 (14–19)	14 (10–17)	5.7 (2.9–9.8)	2.3 (1.1–4.2)	17 (14–19)
Horse or dog races	14 (11–17)	6.6 (5.4–7.9)	0 (0–3.2)	8.0 (3.7–15)	10 (7.2–13)	12 (10–14)	11 (8.1–13)	4.3 (2.3–7.2)	3.1 (1–7.4)	12 (10–14)
Gaming machines at a pub or club	10 (8–13)	9.6 (7.9–11)	2.4 (0.2–8.9)	14 (8.8–19)	13 (10–16)	7.4 (6–8.8)	19 (15–23)	10 (6–15)	4.6 (1.2–11.5)	9.2 (7.5–11)
Gaming machines at casinos	4.3 (2.9–5.6)	5.8 (4.3–7.3)	0 (0–3.2)	6.9 (3.5–12)	5.9 (3.9–8)	4.4 (3.2–5.6)	6.9 (4.2–9.6)	5.9 (3.4–8.4)	5.5 (2.3–11)	4.5 (3.4–5.7)
Sports betting	8.3 (6.2–10)	1.0 (0.6–1.7)	0 (0–3.2)	5.1 (2.7–8.9)	6.9 (4.5–9.4)	3.2 (2.2–4.2)	4.4 (2.6–6.3)	6.7 (3.6–11)	3.0 (0.7–7.7)	4.7 (3.4–6.1)
Table games at casinos	4.7 (3–6.4)	2.0 (0.9–3)	0 (0–3.2)	7.1 (2.8–14)	4.9 (2.7–7)	1.5 (0.8–2.6)	1.9 (0.7–4.1)	2.1 (0.7–4.7)	5.0 (2–10)	3.3 (2.1–4.5)
Bets for money with family or friends	5.1 (3.4–6.9)	2.1 (1–3.3)	9.8 (3.5–21)	7.5 (3.8–13)	4.0 (2.2–5.9)	1.7 (0.8–2.6)	4.0 (2.2–5.9)	4.9 (2.3–8.9)	3.6 (1.1–8.5)	3.4 (2.1–4.7)
Gambled on overseas websites	5.3 (3.6–7)	1.4 (0.7–2.1)	0 (0–3.2)	5.2 (2–10.7)	4.3 (2.6–6.1)	2.4 (1.4–3.3)	3.1 (1.6–5.6)	4.7 (2.3–8.5)	4.6 (1.4–11)	2.9 (2–3.9)
Keno, Bullseye or Play 3	2.0 (0.9–3.1)	1.5 (0.9–2.1)	1.8 (0–9.7)	1.9 (0.1–9.2)	1.4 (0.8–2.3)	2.0 (1.3–2.6)	2 (1.1–3.3)	3.9 (1.8–7.1)	3.1 (0.6–9.2)	1.3 (0.8–1.8)
Housie or bingo	0.9 (0.4–1.7)	1.4 (0.8–2)	2.1 (0.2–8.6)	0.5 (0–2.7)	0.7 (0.4–1.1)	1.5 (0.8–2.2)	1.6 (0.7–3.1)	4.3 (1.8–8.5)	0 (0–0)	1.0 (0.6–1.6)
Did not participate in any activities	28 (25–31)	32 (29–34)	62 (47–77)	42 (34–50)	30 (26–35)	23 (21–26)	27 (22–32)	39 (32–45)	48 (41–55)	26 (23–28)
Sample size (n)	**1,575**	**2,279**	**83**	**336**	**1,338**	**2,097**	**930**	**615**	**325**	**1,984**

Base = all respondents (n = 3,854)

Note: Parentheses in the body of the table enclose 95% confidence intervals

Table 4-5 continued

Activity	PGSI				Deprivation			Total
	Non-gambler (%)	Non-problem gambler (%)	Low-risk gambler (%)	Moderate-risk/problem gambler (%)	Low (%)	Mid (%)	High (%)	(%)
Lotto	0	78 (76–80.7)	73 (62–84)	85 (70–100)	56 (51–60)	55 (52–59)	53 (49–57)	**55 (53–57)**
Raffle ticket or casino fundraiser evening	0	39 (36–42.3)	41 (30–52)	33 (17–52)	29 (25–34)	29 (24–33)	23 (19–27)	**27 (25–30)**
Instant Kiwi	0	38 (36–41)	45 (34–56)	55 (32–79)	27 (23–32)	28 (24–31)	27 (24–31)	**27 (25–30)**
Sweepstakes with workmates, friends or family	0	19 (17–21)	24 (14–34)	27 (13–45)	15 (12–18)	15 (12–18)	9.7 (7.4–12)	**14 (12–15)**
Horse or dog races	0	13 (11–15)	30 (19–41)	40 (20–60)	9.8 (7.4–12)	11.5 (8.9–14)	8.7 (6.8–11)	**10 (8.8–12)**
Gaming machines at a pub or club	0	12 (9.7–13)	37 (27–47)	72 (57–88)	8.2 (5.8–11)	11 (8.6–13)	10 (7.6–13)	**9.9 (8.5–11)**
Gaming machines at casinos	0	6 (4.7–7.4)	23 (12–33)	22 (10–39)	5.3 (2.9–7.7)	5.8 (4.1–7.5)	3.6 (2.4–4.8)	**5.1 (4–6.1)**
Sports betting	0	5.9 (4.4–7.4)	10.4 (5.7–17)	21 (7.5–42)	4.5 (2.7–6.3)	5.2 (3.2–7.1)	3.7 (2.3–5.1)	**4.6 (3.5–5.6)**
Table games at casinos	0	4.3 (2.9–5.7)	12 (4.5–25)	5.8 (1.5–15)	5 (2.8–8.2)	3.1 (1.4–4.8)	1.7 (0.8–3.1)	**3.3 (2.2–4.4)**
Bets for money with family or friends	0	5.1 (3.6–6.6)	4.2 (1.4–9.3)	5.5 (1.1–15)	4.7 (2.4–6.9)	3.3 (1.7–4.9)	2.8 (1.5–4.2)	**3.6 (2.6–4.6)**
Gambled on overseas websites	0	4 (2.8–5.2)	9.3 (3.8–18)	23 (3.4–61)	3.4 (1.9–5.6)	4 (2.4–5.6)	1.9 (1.1–2.8)	**3.3 (2.4–4.2)**
Keno, Bullseye or Play 3	0	1.5 (1–2)	9.3 (4.3–17)	29 (7.8–61)	1 (0.4–2)	2 (0.9–3.7)	2.3 (1.4–3.2)	**1.8 (1.1–2.4)**
Housie or bingo	0	1.5 (0.9–2.2)	2.3 (0.6–5.7)	4 (0.9–9)	1.2 (0.5–2.5)	0.9 (0.5–1.6)	1.4 (0.5–2.3)	**1.1 (0.7–1.5)**
Did not participate in any activities	100	0	0	0	27 (23–32)	30 (26–33)	33 (29–37)	**30 (27–32)**
Sample size (n)	**1,168**	**2,449**	**148**	**89**	**878**	**1,347**	**1,629**	**3,854**

4.2.2 Type of gambling activities participated in during previous 12 months: Comparison with previous years

This section presents changes from 2006/07 to 2016 in past-year participation rates for specific gambling activities. As some questions were asked differently across survey years, the wording in this section differs from that in sections 4.2 and 4.2.1. For instance, in 2008, purchasing of all New Zealand Lotteries Commission products was asked about as a single category, and betting on horse/dog races or sports events was also asked about together. Key findings on change over time were:

- Purchasing New Zealand Lotteries Commission products (including Lotto, Keno, Bullseye,[5] Strike, Powerball and Big Wednesday, Instant Kiwi and scratch tickets) was the most common form of gambling in all survey years. Nevertheless, the proportion of New Zealand adults who took part in this gambling activity was significantly lower in 2016 (61%) than in 2006/07 (67%).

- Purchasing raffle tickets or participating at a casino evening for fundraising, participating in sweepstakes with friends or colleagues, or making monetary bets with family or friends on card games were combined into one category for analysis: 'informal gambling'. While the total proportion of people participating in these informal gambling activities was variable across the years, there was a significant reduction in participation (from 55% to 35%) between 2006/07 and 2016. Across activity types, this category had the greatest absolute reduction in participation between 2006/07 and 2016.

- The proportion of people who placed bets on horse or dog races or sports events decreased significantly since 2006/07, from 18% to 12%.

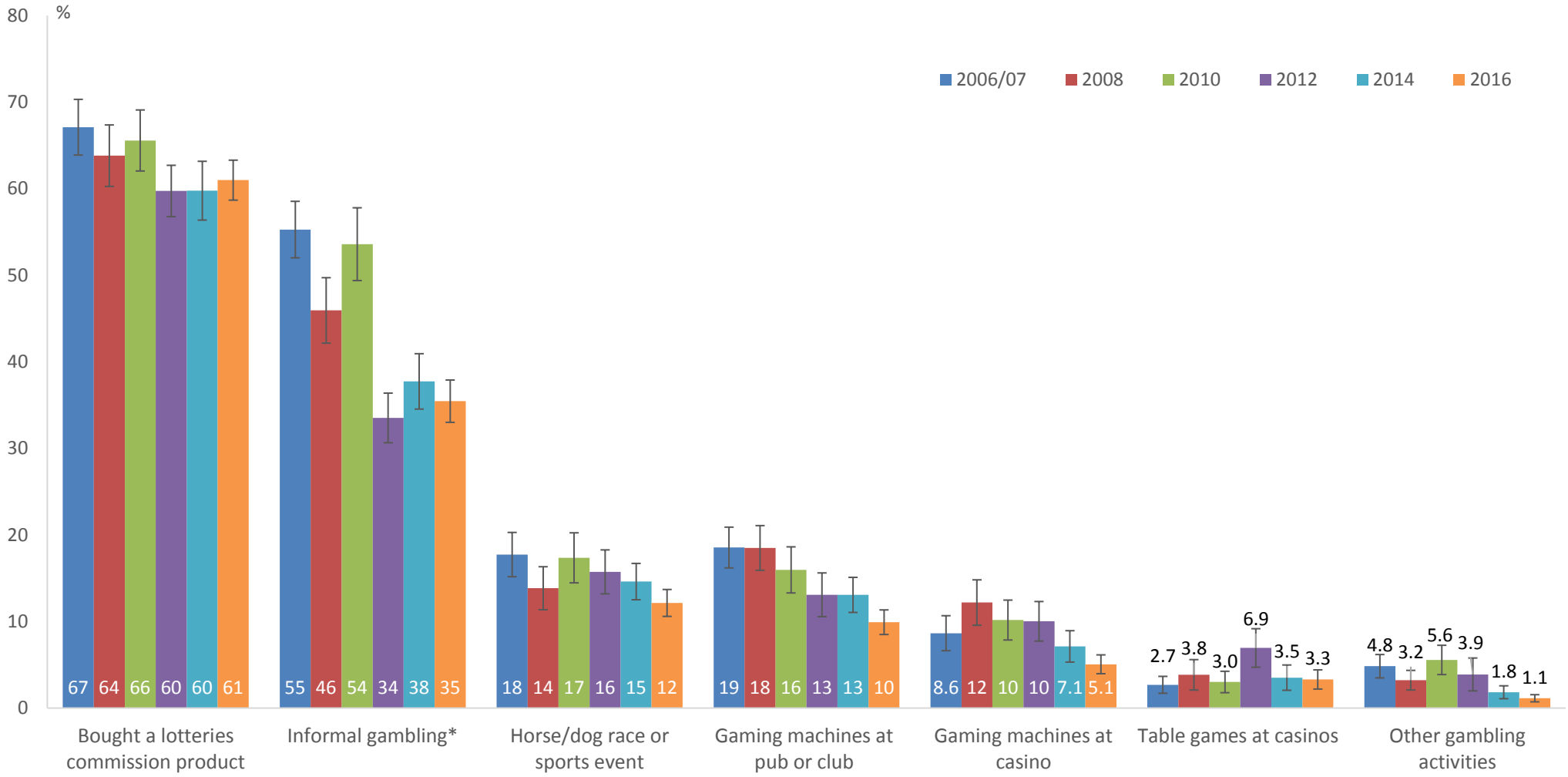
- The proportion of people who played gaming machines at a pub or club decreased significantly since 2006/07, from 19% to 10%. There has also been a significant decrease in participation in this activity since 2014, when it was 13%.

- The participation rate in table games at casinos in 2016 was similar to the rates of 2006/07.

- Gambling on an overseas website, such as placing a bet on a horse/dog race on an overseas TAB, was first asked about in 2010. There has been no significant changes in participation of overseas online gambling. Overseas online gambling is looked at in more detail in the following section.

[5] Bullseye is a daily lottery game, launched on 19 October 2009, and was included in the 2010 HLS onwards.

Figure 4-6: Past-year gambling participation by type of activity, 2006/07 to 2016



**Raffle ticket, casino fundraising evening, sweepstakes with friends or colleagues, bets with family or friends on card games;*

Base = all respondents (n = 3,854)

4.2.3 Participation in each gambling activity by geographic region

To draw broad comparisons between geographic regions of New Zealand, past-year participation in the six most common gambling activities is presented in Figure 4-7 for five regions: Auckland, Wellington, the North Island excluding Auckland and Wellington, Canterbury, and the South Island excluding Canterbury. Some findings were:

- Auckland had the lowest participation rates for all of the activities. This is due to Auckland having the lowest rate of participation in any gambling activity in the past year (60%), as detailed in Section 4.1.3.
- Lotto was the most popular gambling activity for all regions across New Zealand with the proportions ranging between 48% for Auckland and 60% for the Wellington region.
- Both Auckland and Wellington had lower rates of purchasing Instant Kiwi/scratch tickets and participating in informal gambling such as raffles and casino fundraising events than the rest of the North Island.
- Canterbury had lower rates of purchasing Instant Kiwi/scratch tickets and participating in informal gambling such as raffles and casino fundraising events than the rest of the South Island.
- Auckland has a lower rate of participation of pokies in pubs or clubs (6%) than the other regions, which all have a similar rate (around 12%).

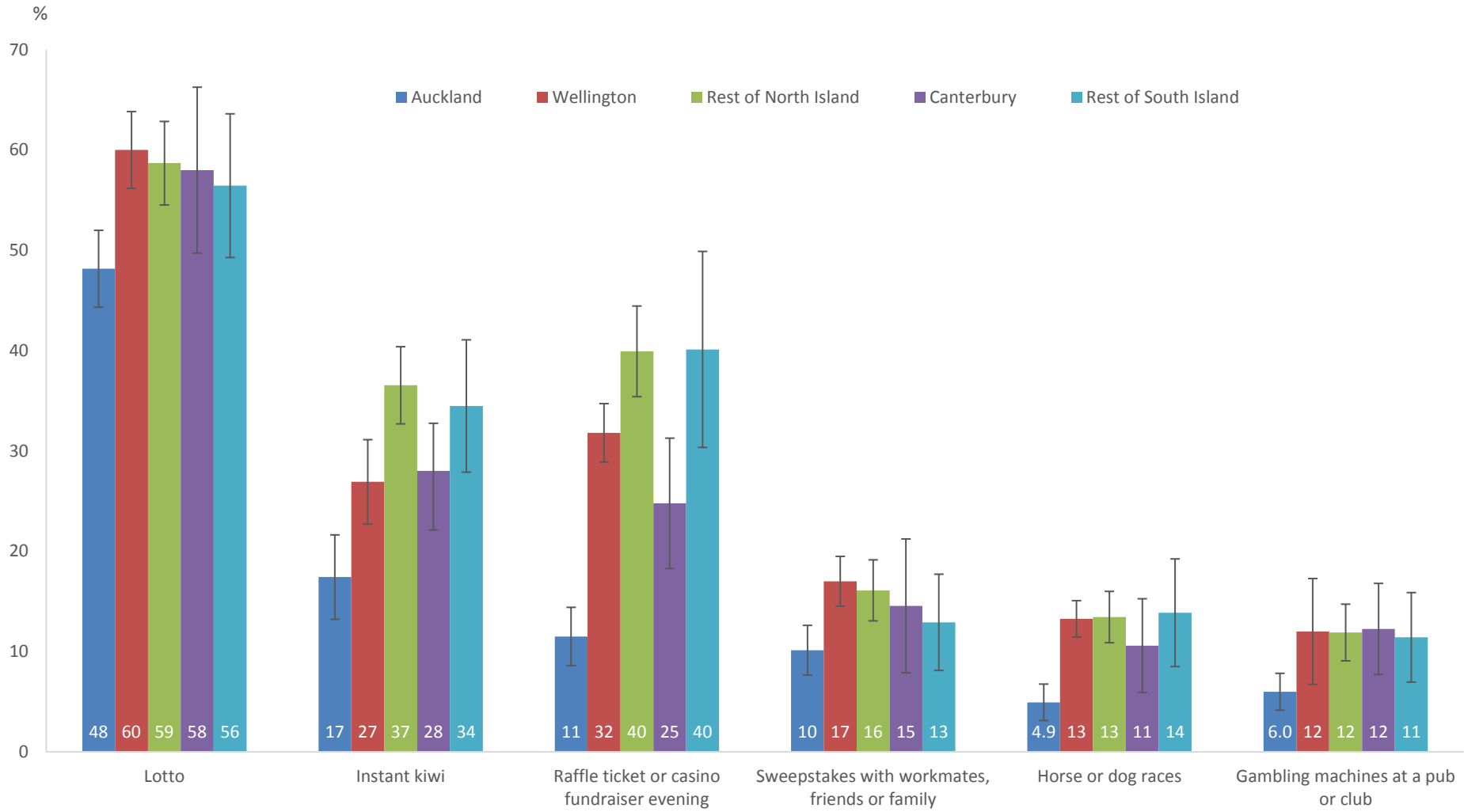


Figure 4-7: Participation in the six most popular gambling activities across region, 2016

Base = all respondents (n = 3,854)

4.2.4 Gambling on overseas websites

Since 2010, the HLS has included a set of questions relating to gambling activities on overseas websites (not including bets through the NZ TAB or buying a ticket through a NZ lotto account). In 2012, these questions were asked as a group and participation in the individual activities was not recorded (See Section 3.8.5 for more details).

There were no significant differences between online gambling, overall, on an overseas website from 2010 to 2016. There were also no significant differences in gambling on an overseas TAB or betting agency on horse/dog races, gambling on overseas TAB on sports events, or online betting on the NZ TAB between 2016 and any previous year.

There has been a significant rise in the proportion of respondents who gambled on an overseas TAB or betting agency on either horse/dog racing or sports events between 2010 and 2016, from 0.5% to 2.1%.

Table 4-6: Participation in online gambling in the previous 12 months, 2010 to 2016

	Year			
Activity	**2010**	**2012**	**2014**	**2016**
Gambled on overseas website	1.9 (0.9–2.9)	1.4 (0.6–2.7)	4.2 (2.4–6)	3.4‡ (2.5–4.4)
Gambled on **overseas TAB** on either horse/dog races or sports events	0.5 (0.1–1.3)	–	2.6 (1.1–4.1)	2.1* (1.3–3)
Gambled on **overseas TAB** on horse/dog races	0.2 (0–0.9)	–	2.1 (0.8–4.2)	1.4 (0.8–2)
Gambled on **overseas TAB** on sports events	0.3 (0–1)	–	1.8 (0.6–3.9)	1.1 (0.6–2)
Gambled on **NZ TAB** online on either horse/dog races or sports events	4.1 (2.1–6.1)	–	–	3.1 (2.3–4)

Base = Respondents aged 18+;

** Significant difference (p < 0.05) between 2016 and 2010*

‡ Note that this proportion is different to that in Section 4.2 because the sample here restricted to those aged 18+.

4.2.5 Profile of online gamblers

In this section, an online gambler is defined as someone who has either gambled on an overseas website, reported that they 'played an internet game for money', or placed a bet online with the NZ TAB within the past year.

In 2016, a typical person who gambled online in the past year is likely to: 1) be male, 2) be aged between 25 and 44 years old, and 3) live in the Wellington region.

Table 4-7: Predictors of online gambling

	Proportion	95% CI of proportion		Odds ratio	95% CI of Odds ratio	
		Lower	Upper		Lower	Upper
Overall	5.1%	4.0%	6.2%			
Age						
15-17 years	1.5%	0%	3.9%	0.40	0.03	5.57
18-24 years	7.4%	3.1%	11.6%	1.81	0.87	3.77
25-44 years	6.6%	4.5%	8.7%	**1.81****	1.17	2.78
45+ years	3.8%	2.7%	4.9%	Reference		
Gender						
Male	8.2%	6.1%	10%	**3.90*****	2.44	6.22
Female	2.2%	1.4%	2.9%	Reference		
Region						
Auckland Region	5.2%	3.4%	6.9%	1.28	0.73	2.25
Wellington Region	9.9%	5.1%	15%	**2.59****	1.34	5.03
Rest of North Island	3.8%	2.4%	5.2%	Reference		
Canterbury Region	4.1%	1.6%	6.7%	1.06	0.48	2.33
Rest of South Island	4.3%	1.2%	7.4%	1.03	0.41	2.54

*Base = all respondents (n = 3771), * p < 0.05, ** p < 0.01, *** p < 0.001*

Outcome variable: played an online gambling activity to win money (1= yes, 0= no)

When controlling for all other significant factors, those aged 24 to 44 years (6.6%) were more likely to participate in online gambling compared with the older group (45 years and over, 3.8%). These rates were also high for those aged 18 to 24 years (7.4%), although when other factors were controlled for, the difference is not significant (with the lack of significance perhaps due to the smaller sample size for this subgroup). Males (8.2%) were more likely to gamble online than females (2.2%).

Region was also associated with online gambling. Those in the Wellington region (9.9%) were more likely to gamble online than those in other parts of the North Island (excluding Auckland; 3.8%).

4.3 FREQUENCY OF PARTICIPATION IN GAMBLING ACTIVITIES

Respondents who had participated in gambling activities in the last 12 months were asked how often they took part in those activities (see Figure 4-8). In terms of weekly gambling activities, the five most frequently reported activities were Lotto, Keno, Bullseye or Play 3, housie or bingo, sports betting and horse or dog race betting. For monthly participation, the five most frequently reported activities were Instant Kiwi/scratch tickets, Lotto, Keno, Bullseye & Play 3, gaming machines at a pub or club and raffle tickets or casino fundraiser events.

Among those who had bought a lottery ticket (ie, Lotto, Strike, or Powerball ticket) in the past 12 months (not shown in Figure 4-9):

- Half (50%) bought a lottery ticket at least once a month. This represents an estimated 1,045,000 people in the New Zealand population.
- Almost 3 in 10 (27%) bought a lottery ticket at least once a week, representing an estimated 775,000 people.
- A relatively small proportion (4%) bought a lottery ticket more often than once a week, representing an estimated 73,000 people.

Among those who bought Keno or Bullseye tickets in the past 12 months:

- Around half (46%) did so at least once a month, representing an estimated 30,000 people
- One-quarter (24%) bought tickets at least weekly, representing an estimated 16,000 people.

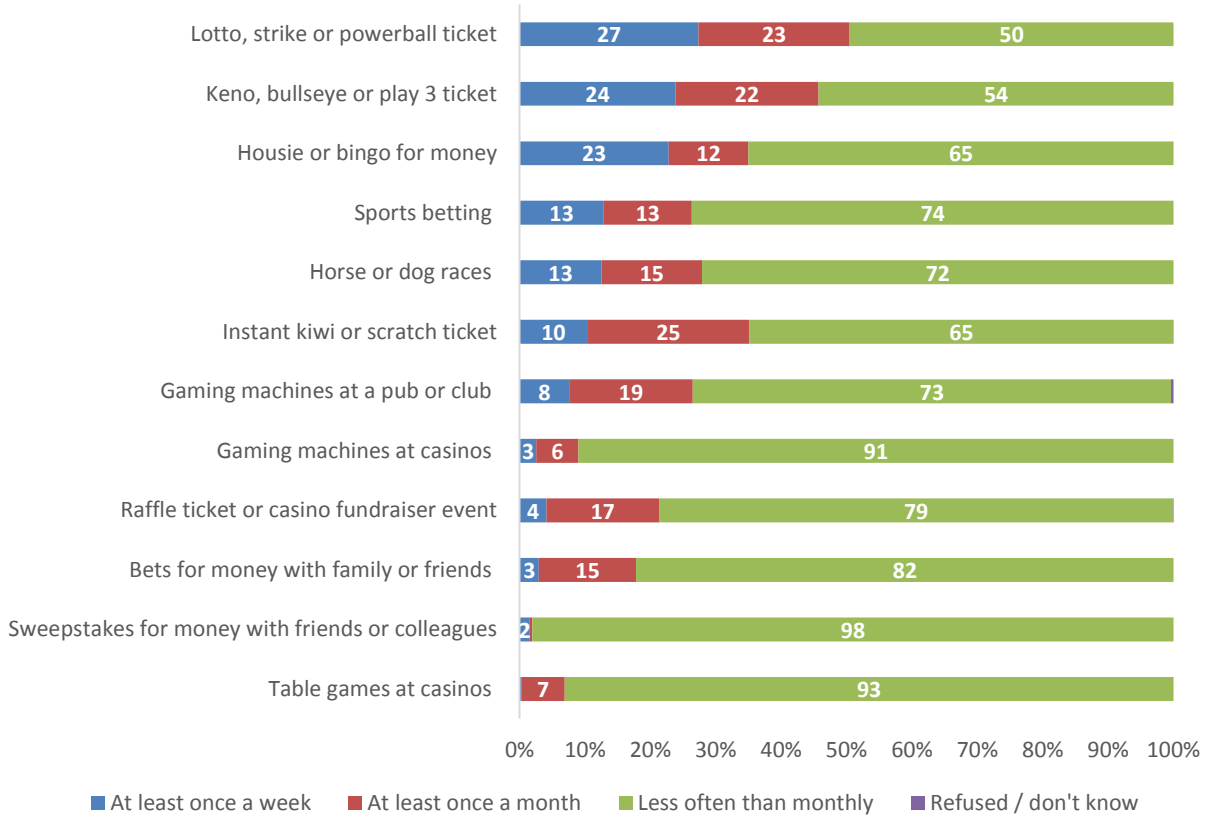


Figure 4-8: Frequency of participation in gambling activities, among those who had participated in that particular activity in the previous 12 months, 2016

Base = respondents who had participated in that particular gambling activity in the past 12 months

4.3.1 Frequency of engaging in gambling activities: Comparison with previous years

The frequency with which New Zealand adults participated in different gambling activities over time is shown in Table 4-8.

Key findings are:

- Although purchasing New Zealand Lotteries Commission products has slowly declined over the last ten years, weekly participation has remained unchanged over time.
- The proportion of adults participating in informal gambling activities[6] at least once a week, was highest in 2006/07 (3.3%). The rate dropped to 1.4% in 2014, and stayed at 1.4% in 2016.
- The proportion of adults playing pokies in pubs/clubs at least once a week has also dropped, from 2.0% in 2006/07 to 0.8% in 2016. Similarly, the proportion of adults playing at least monthly has also dropped from 4.8% in 2006/07 to 1.9% in 2016.
- Although the weekly participation rates have not changed, there was a significant decrease in the proportion of adults who bet on horse/dog races or sports events at least once a month, from 3.2% in 2006/07 to 1.9% in 2016.
- Weekly participation of overseas online gambling has dropped from 0.4% in 2010 to 0.2% in 2016.

[6] Informal gambling activities includes: buying raffle tickets or going to a casino evening for fundraising, participating in sweepstakes with friends or colleagues, and making money bets with family or friends on card games. Note that although the wording of the questions about these various informal gambling activities remained the same over the years, the manner in which they were asked varied.

Table 4-8: Frequency of participation in gambling activities, 2006/07-2016 (%)

Frequency	Year	Lotteries commission products[1]	Informal gambling[2]	Horse/dog race or sports event	Gaming machines at pub/club	Gaming machines at casino	Overseas website	Table games at casinos	Other gambling activities[3]
At least once a week	2006/07	18 (16–20)	3.3 (2.2–4.3)	1.9 (1.2–2.7)	2.0 (1.2–2.7)	0.1 (0.0–0.3)	-	0	0.7 (0.4–1.2)
	2008	16 (14–18)	2.1 (1.1–3.1)	2.1 (1.2–3.1)	1.2 (0.6–2.2)	0.2 (0.1–0.7)	-	0.1 (0.0–0.6)	1.0 (0.5–1.8)
	2010	19 (15–22)	1.5 (0.9–2.1)	1.2 (0.6–2.0)	1.1 (0.6–1.6)	0.4 (0.1–1.0)	0.4 (0.1–1.0)	0	0.8 (0.4–1.5)
	2012	21 (18–23)	1.8 (1.1–2.6)	1.4 (0.9–2.0)	1.2 (0.8–1.6)	0.2 (0.1–0.5)	0.1 (0.0–0.4)	0.3 (0.0–0.9)	0.3 (0.1–0.6)
	2014	17 (15–20)	1.4 (0.8–1.9)	2.4 (0.9–3.8)	1.1 (0.3–1.9)	0.1 (0.0–0.3)	1.5 (0.4–4.0)	0	0.4 (0.2–0.7)
	2016	16 (14–17)	1.4* (1.0–1.9)	1.7 (1.2–2.2)	0.8* (0.5–1.1)	0.1 (0.0–0.3)	0.2[4‡] (0.0–0.5)	0	0.3* (0.1–0.5)
At least once a month	2006/07	20 (17–23)	6.9 (5.3–8.5)	3.2 (2.0–4.4)	4.8 (3.5–6.1)	0.5 (0.2–0.9)	-	0.2 (0.0–0.4)	0.7 (0.3–1.5)
	2008	21 (18–24)	9.0 (6.9–11)	2.4 (1.1–3.8)	4.4 (2.8–6.1)	1.4 (0.6–2.7)	-	0.5 (0.1–1.5)	0.4 (0.2–0.6)
	2010	19 (16–22)	8.2 (6.5–10)	2.0 (1.1–3.0)	4.5 (3.2–5.8)	0.5 (0.2–1.2)	0.2 (0.0–0.7)	0.3 (0.0–1.8)	0.9 (0.4–1.7)
	2012	15 (13–17)	4.3 (3.3–5.4)	2.3 (1.3–3.3)	3.2 (2.1–4.3)	1.5 (0.8–2.6)	0.1 (0.0–0.6)	0.8 (0.3–1.8)	0.3 (0.0–1.1)
	2014	16 (14–18)	5.1 (3.5–6.8)	2.5 (1.6–3.3)	2.7 (1.3–4.1)	0.4 (0.2–0.9)	1.0 (0.4–1.9)	0.2 (0.0–0.7)	0.1 (0.0–0.4)
	2016	15* (13–17)	5.2 (4.1–6.4)	1.9* (1.2–2.5)	1.9* (1.3–2.4)	0.3 (0.1–0.7)	0.5[4] (0.1 – 1.3)	0.2 (0.0–0.7)	0.1* (0.1–0.3)
Less often than monthly	2006/07	29 (26–32)	45 (42–48)	13 (10–15)	12 (10–14)	8.1 (6.1–10)	-	2.5 (1.5–3.5)	3.5 (2.4–4.5)
	2008	27 (24–30)	35 (31–38)	9.3 (7.3–11)	13 (11–15)	11 (8–13)	-	3.2 (1.5–4.9)	1.8 (0.9–2.8)
	2010	26 (23–30)	44 (40–48)	10 (8–13)	10 (8–13)	9.3 (7.0–12)	1.3 (0.6–2.4)	2.7 (1.6–3.8)	3.9 (2.3–5.4)
	2012	25 (22–27)	28 (25–30)	12 (10–14)	8.6 (6.5–11)	8.1 (6.0–10)	1.2 (0.5–2.4)	5.6 (3.7–7.5)	3.1 (1.4–4.8)
	2014	27 (24–30)	31 (28–34)	9.7 (8.0–11)	9.5 (7.9–11)	6.7 (4.9–8.5)	1.3 (0.7–2.0)	3.4 (1.9–4.8)	1.3 (0.7–2.0)
	2016	30 (28–32)	29* (27–31)	8.6* (7.3–9.9)	7.3*[†] (6.1–8.5)	4.6*[†] (3.6–5.6)	1.4[4] (0.8–2.0)	3.1 (2.1–4.1)	0.7 (0.4–1.1)

Base = all respondents; - dash = no observation; Parentheses enclose 95% confidence intervals.

*[1] Lotteries Commission products include: Lotto, Keno, Bullseye, Strike, Powerball, Big Wednesday and Saturday, Instant Kiwi or scratch tickets; [2] Informal gambling includes: raffle ticket or casino fundraising evening, sweepstakes with friends or colleagues, bets for money with family or friends; [3] Includes playing housie/bingo and a text game for money; [4] Only includes the frequency of horse/dog betting on an overseas TAB, sports betting on an overseas TAB, and online pokies in 2016. Includes the frequency of all overseas gambling activities in 2010-2014; * Significant difference (p≤ 0.05) between 2016 and 2006/07. [†] Significant difference (p≤ 0.05) between 2016 and 2014. [‡] Significant difference between 2016 and 2010.*

4.3.2 Frequency of participation by subgroups: Purchasing of a lottery ticket

The frequency of purchasing lottery tickets (including Lotto, Big Wednesday and Saturday, and Powerball), separated by subgroups, is shown in Table 4-9. Focusing on at least weekly participation of purchasing lottery tickets shows that:

- those aged 45 years and older were more likely to have bought a lottery ticket at least once a week than younger people
- those aged 25 to 44 years were more likely to have bought a lottery ticket at least once a week compared with people aged between 18 to 24 years
- Māori, Pacific people and people of European/Other ethnicity were more likely to have bought a lottery ticket at least once a week than Asian people
- people living in areas of high deprivation were more likely to purchase lottery tickets at least once a week compared with people living in areas of low deprivation.

Table 4-9: Frequency of Lotto tickets purchasing, by subgroups, 2016

Frequency	Gender		Age group (in years)				Prioritised ethnicity			
	Male %	**Female %**	**15 - 17 %**	**18 - 24 %**	**25 - 44 %**	**45+ %**	**Māori %**	**Pacific %**	**Asian %**	**European /Other %**
At least once a week	15 (14-17)	15 (13-17)	2.4 (0.2-9.6)	0.4 (0-1.7)	10 (8.1-12)	23 (21-26)	16 (14-19)	16 (12-20)	6.7 (3.7-11)	16 (15-18)
At least once a month	14 (12-16)	11 (9.5-13)	0 (0-3.2)	5.1 (2.1-10)	13 (11-16)	15 (13-17)	14 (11-17)	15 (10-19)	13 (7.9-18)	12 (10-14)
Less often than monthly	26 (23-29)	28 (25-31)	3.1 (0.1-17)	24 (18-31)	32 (28-35)	27 (24-30)	22 (18-26)	16 (11-21)	22 (16-28)	30 (28-33)
Did not participate	44 (41-48)	46 (43-49)	94 (82-99)	70 (63-77)	45 (41-49)	34 (32-37)	47 (43-52)	53 (46-59)	59 (51-66)	41 (39-44)
Sample size (n)	**1,575**	**2,279**	**83**	**336**	**1,338**	**2,097**	**930**	**615**	**325**	**1,984**

Frequency	PGSI				Deprivation			Total
	Non-gambler %	**Non-problem gambler %**	**Low-risk gambler %**	**Moderate-risk/problem gambler %**	**Low %**	**Mid %**	**High %**	**%**
At least once a week	0	21 (19-23)	31 (22-41)	33 (16-50)	12 (9.3-14)	16 (14-19)	17 (15-19)	**15 (14-16)**
At least once a month	0	18 (16-20)	19 (11-29)	25 (10-47)	13 (10-15)	12 (9.5-15)	13 (11-16)	**13 (11-14)**
Less often than monthly	0	40 (37-43)	23 (13-33)	27 (5.6-61)	31 (27-36)	27 (24-30)	23 (20-26)	**27 (25-29)**
Did not participate	100	22 (19-24)	27 (16-38)	15 (4-37)	44 (40-49)	45 (41-48)	47 (43-51)	**45 (43-47)**
Sample size (n)	**1,168**	**2,449**	**148**	**89**	**878**	**1,347**	**1,629**	**3,854**

Base = all respondents (n = 3,854)

4.3.3 Frequency of gambling participation by subgroups: Betting on horse/dog races or sports events

The frequency of betting on horse/dog races or sports events, separated by subgroups, is shown in Table 4-10. The proportion of adults who took part in this gambling activity at least once a week differed by gender, age, ethnicity and PGSI:

- Males were more likely to bet on races or sports events at least once a week than females.
- Betting on horse/dog races or sports events at any frequency was not reported by any respondent aged 15 to 17 years.
- Māori and Pacific people were more likely to bet on races or sports events at least once a week than Asian people.
- Low-risk and moderate-risk/problem gamblers were more likely to bet on races or sports events at least once a week compared with non-problem gamblers.

Table 4-10: Frequency of betting on horse or dog races or sports events, by subgroups, 2016

Frequency	Gender		Age group (in years)				Prioritised ethnicity			
	Male (%)	**Female (%)**	**15 - 17 (%)**	**18 - 24 (%)**	**25 - 44 (%)**	**45+ (%)**	**Māori (%)**	**Pacific (%)**	**Asian (%)**	**European /Other (%)**
At least once a week	3 (2.1-4)	0.4 (0.2-0.8)	0 (0-3.2)	1.5 (0.4-3.8)	1 (0.5-1.7)	2.3 (1.5-3.1)	2.8 (1.6-3.9)	4.3 (2-7.9)	0.6 (0-2.9)	1.5 (0.8-2.1)
At least once a month	3.3 (2.1-4.6)	0.5 (0.2-1)	0 (0-3.2)	1.9 (0.4-5.5)	2.1 (1-3.8)	1.9 (1.2-2.6)	1.2 (0.3-3.1)	1.1 (0.1-5.3)	1.4 (0.1-5.1)	2.2 (1.4-2.9)
Less often than monthly	11 (8.8-13)	6.3 (5-7.6)	0 (0-3.2)	7.3 (3.3-14)	10 (7.8-13)	8.4 (6.8-10)	8.8 (6.1-11)	4.8 (2.6-8)	2.8 (0.7-7.4)	10 (8.3-12)
Did not participate	83 (80-85)	93 (91-94)	100 (100-100)	89 (84-95)	87 (83-90)	87 (86-89)	87 (84-90)	90 (86-94)	95 (92-99)	86 (84-88)
Sample size (n)	**1,575**	**2,279**	**83**	**336**	**1,338**	**2,097**	**930**	**615**	**325**	**1,984**

Frequency	PGSI				Deprivation			Total
	Non-gambler (%)	**Non-problem gambler (%)**	**Low-risk gambler (%)**	**Moderate-risk/problem gambler (%)**	**Low (%)**	**Mid (%)**	**High (%)**	**(%)**
At least once a week	0	1.7 (1-2.3)	9.6 (4.6-17)	15 (5.8-30)	0.8 (0.2-2.1)	1.7 (1-2.6)	2.7 (1.6-3.7)	**1.7 (1.2-2.2)**
At least once a month	0	2.3 (1.5-3.2)	5.7 (0.8-18)	11.2 (3.6-25)	2.6 (1.4-4.3)	1.7 (0.9-3.1)	1.3 (0.6-2.3)	**1.9 (1.2-2.5)**
Less often than monthly	0	12 (10-14)	18 (10-29)	18 (6-38)	8.7 (6.4-11)	10 (7.5-12)	6.4 (4.6-8.1)	**8.6 (7.3-10)**
Did not participate	100	84 (82-86)	67 (56-77)	55 (35-76)	88 (85-91)	87 (84-89)	90 (88-92)	**88 (86-89)**
Sample size (n)	**1,168**	**2,449**	**148**	**89**	**878**	**1,347**	**1,629**	**3,854**

Base = all respondents (n = 3,854)

4.3.4 Frequency of gambling participation by subgroups: Buying Instant Kiwi or scratch tickets

The frequency of Instant Kiwi or scratch tickets purchased by different subgroups is shown in Table 4-11. Focusing on at least once a week participation:

- respondents aged 45 years and over were more likely to purchase Instant Kiwi/scratch tickets at least once a week compared with younger respondents
- low-risk and moderate-risk/problem gamblers were more likely to purchase Instant Kiwi/scratch tickets compared with non-problem gamblers.

Table 4-11: Frequency of buying Instant Kiwi or scratch tickets, by subgroups, 2016

Frequency	Gender		Age group (in years)				Prioritised ethnicity			
	Male %	**Female %**	**15 - 17 %**	**18 - 24 %**	**25 - 44 %**	**45+ %**	**Māori %**	**Pacific %**	**Asian %**	**European /Other %**
At least once a week	2.6 (1.6-3.6)	3.1 (2.1-4)	0.4 (0-2.4)	0.5 (0-1.8)	1.7 (0.7-2.7)	4.5 (3.2-5.7)	3.2 (1.7-4.8)	2.2 (0.8-4.9)	0.6 (0.1-2)	3.3 (2.3-4.3)
At least once a month	7 (4.3-9.7)	6.6 (5.1-8.2)	2.2 (0.1-10)	10.1 (3.2-22)	6.9 (4.9-8.9)	6.2 (4.8-7.6)	7.3 (4.8-9.9)	3.4 (1.7-6)	1.6 (0.6-3.3)	8 (6-10)
Less often than monthly	15 (12-17)	21 (18-23)	3.7 (0.1-18)	24 (18-31.1)	20 (17-24)	15 (13-17)	21 (17-25)	13 (8-17)	7.9 (4.1-13)	20 (17-22)
Did not participate	76 (72-79)	70 (67-73)	94 (81-99)	65 (57-73.7)	71 (67-75)	74 (71-77)	68 (63-73)	82 (76-87)	90 (85-94)	69 (66-72)
Sample size (n)	**1,575**	**2,279**	**83**	**336**	**1,338**	**2,097**	**930**	**615**	**325**	**1,984**

Frequency	PGSI				Deprivation			Total
	Non-gambler %	**Non-problem gambler %**	**Low-risk gambler %**	**Moderate-risk/problem gambler %**	**Low %**	**Mid %**	**High %**	**%**
At least once a week	0	3.5 (2.5-4.5)	9.9 (5.1-17)	13 (5-27)	2.1 (1.1-3.6)	3 (1.8-4.2)	3.4 (2.1-4.7)	**2.8 (2.1-3.5)**
At least once a month	0	8.9 (6.7-11)	18 (10-27)	25 (10-47)	6.4 (2.5-10)	7.4 (5.7-9.2)	6.4 (4.6-8.3)	**6.8 (5.3-8.3)**
Less often than monthly	0	26 (23-28)	17 (9.8-25)	17 (6.6-33)	19 (16-22)	17 (15-20)	17 (14-20)	**18 (16-20)**
Did not participate	100	62 (59-64)	55 (44-66)	45 (21-68)	73 (68-77)	72 (69-76)	73 (69-76)	**73 (70-75)**
Sample size (n)	**1,168**	**2,449**	**148**	**89**	**878**	**1,347**	**1,629**	**3,854**

Base = all respondents (n = 3,854)

4.4 PARTICIPATION IN CONTINUOUS AND NON-CONTINUOUS FORMS OF GAMBLING

This section presents the findings relating to participation in continuous and non-continuous types of gambling. See Section 3.8.7 for an explanation of how the continuous and non-continuous gambling types were defined.

4.4.1 Gambling participation type

As noted previously in Section 3.8.7, all respondents were assigned to a gambling participation group based on the types of gambling they reported participating in, and the frequency of their participation in the previous 12 months (see Table 4-12). The key findings are:

- 1 in 2 (52%) adults were infrequent gamblers, meaning that they had participated in gambling activities less often than once a week, representing an estimated 1,961,000 people in New Zealand.
- 1 in 6 (16%) adults were frequent, non-continuous gamblers, meaning that they had participated in non-continuous gambling forms (such as buying lottery tickets, going to casino evenings/buying raffle tickets for fundraising) at least once a week. This represents an estimated 589,000 people in New Zealand.
- A small proportion of adults (2.7%) were frequent, continuous gamblers, meaning that they had participated in continuous gambling activities such as betting on races or sports events, playing pokie machines or playing table games at casinos, at least once a week. This represents an estimated 103,000 people in New Zealand.

Table 4-12: Past-year participation in continuous and non-continuous forms of gambling, total population aged 15 years and over (unadjusted prevalence), 2016

Gambling participation types	% of total adults	% of past-year gamblers	Estimated number of people
Non-gambler	30 (27-32)	-	1,121,000 (1,034,000-1,207,000)
Infrequent gambler	52 (49-54)	74 (72-76)	1,961,000 (1,868,000-2,054,000)
Frequent, non-continuous gambler	16 (14-17)	22 (20-24)	589,000 (534,000-644,000)
Frequent, continuous gambler	2.7 (2.1-3.3)	3.9 (3-4.7)	103,000 (80,000-126,000)

Base = all respondents (n = 3,854)

Participation in continuous and non-continuous forms of gambling by subgroups is described in Table 4-13. Key findings relating to frequent gamblers included:

- Males were more likely to be frequent, continuous gamblers, than females.
- People aged 45 years and over were more likely to be frequent, continuous gamblers than people aged 25 to 44 years.
- Pacific people were more likely to be frequent, continuous gamblers than people of European/Other ethnicity and Asian people.
- Those who had experienced higher levels of gambling harm were more likely to be frequent, continuous gamblers: moderate-risk/problem gamblers (35%) and low-risk gamblers (17%) were more likely to be frequent, continuous gamblers compared with non-problem gamblers (2.4%).

Table 4-13: Gambling participation type, by subgroup, 2016

Gambling participation type	Gender		Age group (in years)				Prioritised ethnicity			
	Male %	**Female %**	**15 - 17 %**	**18 - 24 %**	**25 - 44 %**	**45+ %**	**Māori %**	**Pacific %**	**Asian %**	**European /Other %**
Non-gambler	28 (25-31)	32 (29-34)	62 (47-77)	42 (33.8-50)	30 (26-35)	23 (21-26)	27 (22-32)	39 (32-45)	48 (41-55)	26 (23-28)
Infrequent gambler	53 (49-56)	51 (48-54)	34 (20-51)	55 (46.9-63)	57 (53-62)	49 (46-52)	52 (46-57)	37 (31-43)	44 (37-52)	55 (52-58)
Frequent, non-continuous gambler	15 (13-17)	16 (14-18)	2.4 (0.2-9.6)	0.8 (0.2-2.4)	11 (8.8-13)	24 (21-26)	17 (14-19)	17 (13-21)	6.3 (3.5-10)	17 (15-19)
Frequent, continuous gambler	4.1 (3.1-5.2)	1.4 (0.8-2)	1.5 (0.1-6.2)	2.3 (0.8-5.1)	1.4 (0.8-2)	3.8 (2.8-4.8)	4.7 (2.8-6.6)	7.1 (3.3-10.9)	0.9 (0.1-3.2)	2.3 (1.6-3.1)
Sample size (n)	**1,575**	**2,279**	**83**	**336**	**1,338**	**2,097**	**930**	**615**	**325**	**1,984**

Gambling participation type	PGSI				Deprivation			Total
	Non-gambler %	**Non-problem gambler(%**	**Low-risk gambler %**	**Moderate-risk/problem gambler %**	**Low %**	**Mid %**	**High %**	**(%)**
Non-gambler	100	0	0	0	27 (23-32)	30 (26-33)	33 (29-37)	**30 (27-32)**
Infrequent gambler	0	75 (73-78)	57 (47-68)	46 (22-71)	59 (55-64)	51 (47-55)	45 (40-49)	**52 (49-54)**
Frequent, non-continuous gambler	0	22 (20-24)	26 (17-35)	19 (9-34)	12 (9.7-14)	17 (14-19)	18 (16-21)	**16 (14-17)**
Frequent, continuous gambler	0	2.4 (1.7-3.2)	17 (10-26)	35 (16-54)	1.5 (0.7-2.8)	2.8 (1.9-3.7)	4.1 (2.7-5.4)	**2.7 (2.1-3.3)**
Sample size (n)	**1,168**	**2,449**	**148**	**89**	**878**	**1,347**	**1,629**	**3,854**

Base = all respondents (n = 3,854)

4.4.2 Gambling participation type: comparison with previous years

There is a decreasing trend in the proportion of infrequent gamblers over time (see Figure 4-9). This is balanced by an increasing trend for non-gamblers. This suggests that it is the infrequent gamblers who transition into non-gamblers.

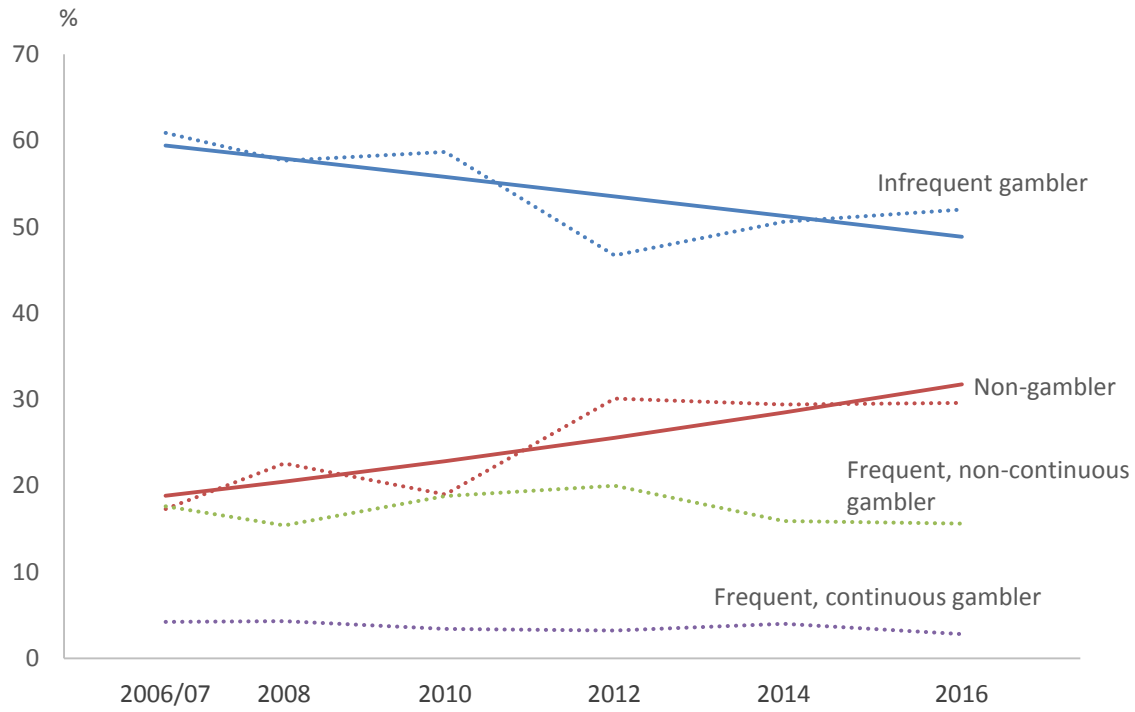


Figure 4-9: Gambling participation type, 2006/07 to 2016

Base = all respondents

Compared with 2014, the proportion of adults in 2016 who were classified as non-gamblers, or infrequent gamblers had not changed; however, compared with 2006/7, the proportion of non-gamblers in 2016 has significantly increased, and the proportion of infrequent gamblers significantly decreased.

Although the proportion of frequent, continuous gamblers has decreased significantly since 2006/2007, there is no overall time trend for this group and the proportion of respondents in this group has remained stable. The numbers of frequent, non-continuous gamblers have also remained stable over time. Hence Figure 4-9 shows no solid trend lines for frequent gamblers.

Table 4-14: Gambling participation type, 2006/07 to 2016

Year	Non-gambler % (95% CI)	Infrequent gamblers % (95% CI)	Frequent, non-continuous gamblers % (95% CI)	Frequent, continuous gamblers % (95% CI)
2006/07	17 (15–20)	61 (58–64)	18 (15–20)	4.2 (3.2–5.2)
2008	23 (19–26)	58 (54–62)	15 (13–18)	4.3 (3.1–5.6)
2010	19 (16–22)	59 (55–63)	19 (16–22)	3.4 (2.4–4.5)
2012	30 (27–33)	47 (44–50)	20 (18–22)	3.2 (2.4–4.0)
2014	29 (26–33)	51 (47–54)	16 (14–18)	4.0 (2.3–5.7)
2016	30* (27–32)	52* (50–54)	16 (14–17)	2.7* (2.1–3.3)

Base = all respondents

** Significant difference between 2016 and 2006/07*

4.5 NUMBER OF ACTIVITIES TAKEN PART IN DURING THE PREVIOUS 12 MONTHS

This section presents the number of gambling activities respondents have participated in. In 2016, respondents reported participating in an average of under two activities (1.7, 95% CI = 1.58, 1.76) in the past 12 months. The average number of gambling activities participated in among gamblers was over two activities (2.4, 95% CI = 2.28, 2.47).

4.5.1 Number of gambling activities

A breakdown of the number of gambling activities participated in during the past year, and the estimated number of New Zealand adults who had not gambled, or participated in one, two, three, or four or more activities, is provided in Table 4-15. The key findings were:

- Over one-quarter of adults (27%) had taken part in one activity, while another one-sixth (17%) had taken part in two activities.
- 1 in 9 (12%) adults had taken part in three activities, and about 1 in 7 (14%) had taken part in four or more activities.

Table 4-15: Number of gambling activities participated in during the last 12 months, total population ages 15 years and over (unadjusted prevalence), 2016

Number of gambling activities in last year	% of all adults	% of past-year gamblers	Estimated number of people
None	30 (27-32)	-	1,121,000 (1,034,000-1,207,000)
1	27 (24-29)	38 (35-41)	1,008,000 (924,000-1,092,000)
2	17 (16-19)	24 (22-27)	649,000 (591,000-707,000)
3	12 (11-14)	17 (15-19)	456,000 (401,000-512,000)
4 or more	14 (13-16)	20 (18-23)	539,000 (473,000-606,000)

Base = all respondents (n = 3,854)

4.5.2 Number of gambling activities by subgroups

The number of gambling activities New Zealand adults had taken part in during the previous 12 months did not differ by gender or deprivation level (see Table 4-16). However, differences were observed by age, ethnicity and PGSI group:

- Young adults aged 15 to 17 years were more likely than people aged 45 years and over to be non-gamblers. In line with this finding, people aged 45 years and over were more likely

to have participated in two, three and four or more gambling activities compared with those aged 15 to 17 years.

- Asian people were more likely to have participated in no gambling activity compared with Māori and people of European/Other ethnicity.
- People of European/Other ethnicity and Māori were more likely to have participated in two or more gambling activities compared with Asian people, and people of European/Other ethnicity were more like to have participated in three gambling activities compared with Asian people.
- Non-problem gamblers were more likely to have participated in one gambling activity compared with moderate-risk/problem gamblers.
- Moderate-risk/problem gamblers were more likely to have participated in four or more gambling activities when compared with non-problem and low-risk gamblers.

Table 4-16: Number of gambling activities taken part in during previous 12 months, by subgroups, 2016

Number of activities	Gender		Age group (in years)				Prioritised ethnicity			
	Male (%)	Female (%)	15 – 17 (%)	18 – 24 (%)	25 - 44 (%)	45+ (%)	Māori (%)	Pacific (%)	Asian (%)	Other (%)
None	28 (25-31)	32 (29-34)	62 (47-77)	42 (34-50)	30 (26-35)	23 (21-26)	27 (22-32)	39 (32-45)	48 (41-55)	26 (23-28)
1	29 (25-32)	25 (22-27)	30 (16-48)	24 (15-33)	26 (22-29)	28 (25-31)	25 (20-30)	27 (22-32)	32 (25-38)	26 (23-29)
2	16 (14-19)	18 (16-20)	6 (1.7-14)	12 (6.9-16)	16 (13-19)	20 (18-23)	21 (17-24)	15 (10-20)	8 (4.4-12)	19 (16-21)
3	11 (8.8-13)	13 (11-15)	1.8 (0-9.7)	9.4 (5.3-15)	11 (8.6-14)	14 (12-16)	12 (8.7-15)	9.2 (5.1-13)	5.3 (2.5-9.7)	14 (12-16)
4 or more	16 (14-19)	12 (10-14)	0 (0-3.2)	13 (7.2-20)	17 (13-20)	14 (12-16)	16 (12-19)	9.8 (6.2-13)	6.5 (2.5-13)	16 (14-18)
Sample size (n)	**1,575**	**2,279**	**83**	**336**	**1,338**	**2,097**	**930**	**615**	**325**	**1,984**

Number of activities	PGSI				Deprivation			Total
	Non-gambler (%)	Non-problem gambler (%)	Low-risk gambler (%)	Moderate-risk/problem (%)	Low (%)	Mid (%)	High (%)	(%)
None	100	0	0	0	27 (23-32)	30 (26-33)	33 (29-37)	**30 (27-32)**
1	0	40 (37-43)	20 (10-32)	3.9 (0.9-10)	29 (25-34)	24 (21-27)	27 (24-31)	**27 (24-29)**
2	0	25 (23-27)	18 (12-27)	12 (4.7-25)	18 (15-21)	17 (15-20)	16 (13-19)	**17 (16-19)**
3	0	17 (15-19)	24 (14-34)	13 (3-34)	9.9 (7.5-12)	14 (11-16)	12 (9.5-14)	**12 (11-14)**
4 or more	0	18 (16-21)	38 (27-49)	70 (53-87)	15 (12-19)	15 (12-18)	12 (9.5-14)	**14 (13-16)**
Sample size (n)	**1,168**	**2,449**	**148**	**89**	**878**	**1,347**	**1,629**	**3,854**

Base = all respondents (n = 3,854)

4.5.3 Number of gambling activities participated in during previous 12 months: Comparison with previous years

For the purposes of time-series analysis, the number of gambling activities participated in during the previous 12 months is calculated in a different way to the previous sections. See Section 3.8.9 for details of how the number of gambling activities for comparison over time was derived.

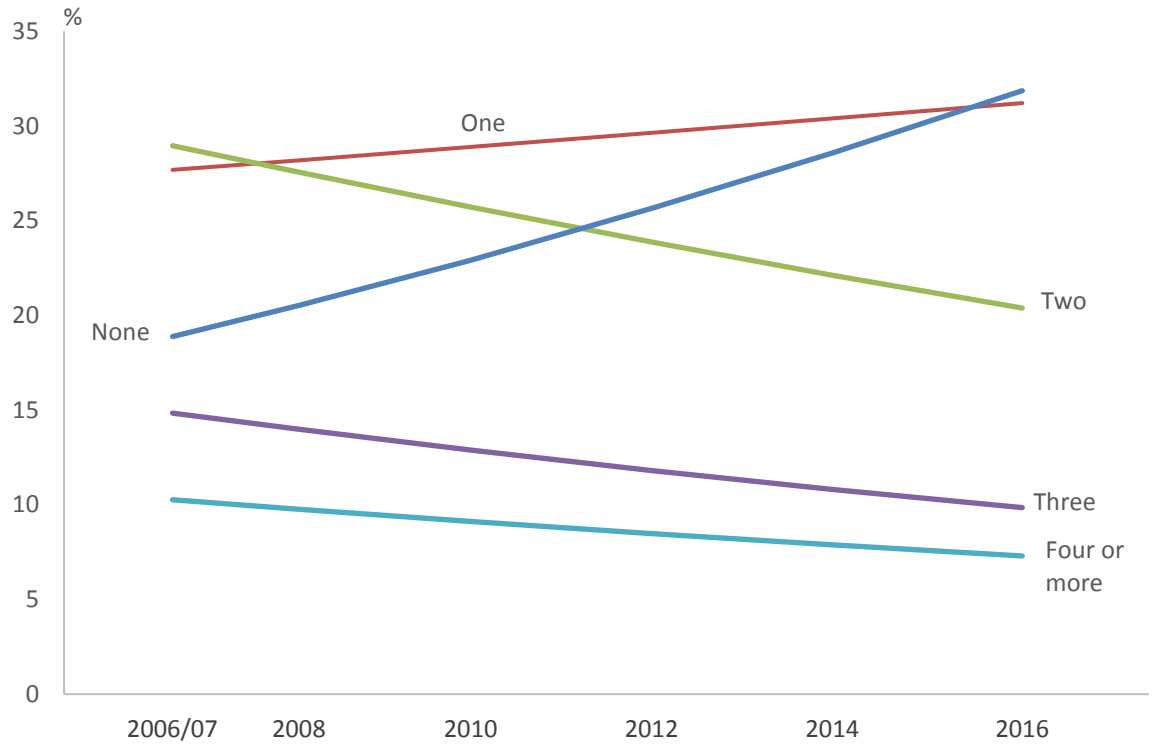


Figure 4-10: Number of gambling activities participated in over the past year[7], 2006/07 to 2016

Base = all respondents

Figure 4-11 shows that the proportion non-gamblers among New Zealand adults has been increasing over time. The proportion who took part in only one gambling activity has also been increasing but much more slowly. The proportion grew from 28% in 2006/07 to 33% in 2016. These increases are balanced by decreasing time trends for the proportion of individuals taking part in two, three or four or more activities. The biggest decrease was the proportion of those who took part in two activities. The proportion for this group dropped from 30% in 2006/07 to 22% in 2016.

Note that number of gambling activities is defined here in a different way to Sections 4.5.1 and 4.5.2 of this report.

[7] For presentation purposes, only trend lines are presented.

Table 4-17: Number of gambling activities participated in from 2006/07 to 2016

Year	None	One	Two	Three	Four or more
2006/07	17 (15–20)	28 (25–31)	30 (27–33)	15 (13–17)	9.2 (7.4–11)
2008	23 (19–26)	29 (26–32)	27 (24–30)	12 (10–15)	9.7 (7.6–12)
2010	19 (16–22)	27 (24–30)	28 (24–31)	16 (14–19)	10 (8–13)
2012	30 (27–33)	31 (28–33)	20 (18–22)	9.9 (8.3–12)	9.5 (7.1–12)
2014	30 (27–33)	28 (25–31)	23 (20–25)	12 (10–14)	8.0 (6.2–9.8)
2016	30* (27–32)	33*† (30–35)	22* (20–24)	9.3*† (8.0–11)	6.4* (5.3–7.5)

Base= all respondents

** Significant difference (p < 0.05) between 2016 and 2006/07*

† Significant difference (p < 0.05) between 2016 and 2014

5. GAMBLING HARM

5.1 INDIVIDUAL GAMBLING HARM

Respondents' personal experience of harmful gambling was assessed in the HLS using the Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001). This scale comprises nine questions. The PGSI is a well validated index of risk/harm and has empirically derived categories of level of risk/harm. Interpretation of individual questions alone should be treated with caution. Full details of the PGSI are in Section 30.8.8.

5.1.1 Experience of individual gambling harm

This section shows the proportion of adults who experienced different levels of gambling harm in the past 12 months, as indicated by their PGSI score. Among all New Zealand adults, including gamblers and non-gamblers (see Figure 5-1):

- Over 9 in 10 people (95%) did not report any signs of harmful gambling (ie, were either non-gamblers or non-problem gamblers).
- 3.3% met the PGSI criteria for low-risk gambling, 1.5% for moderate-risk gambling, and 0.1% for problem gambling. These figures represent around 125,000 low-risk gamblers, 55,000 moderate-risk gamblers, and 6,000 problem gamblers in New Zealand.

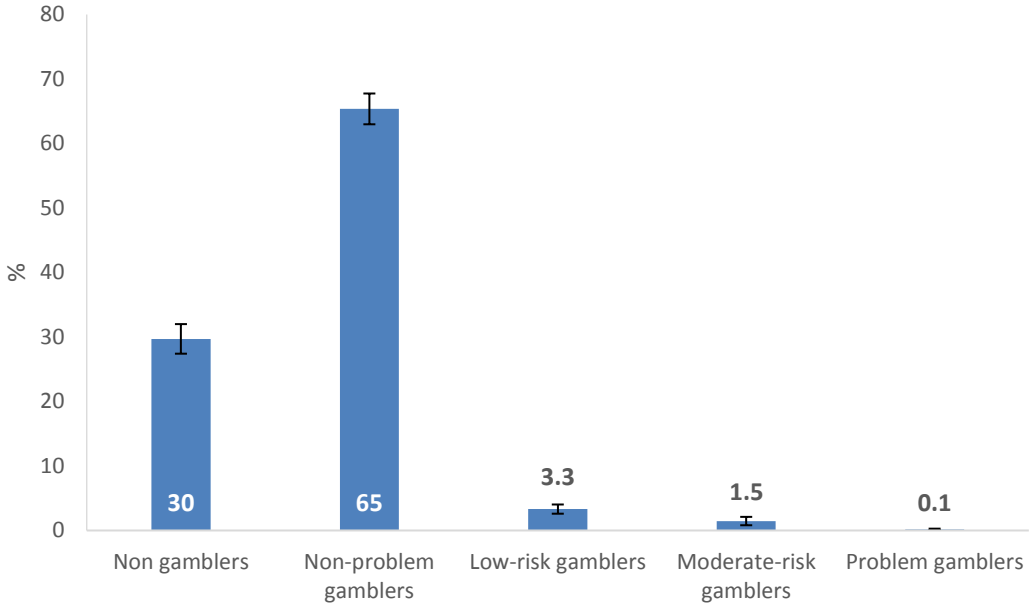


Figure 5-1: Prevalence of gambling risk/harm in the New Zealand adult population, 2016

Base = all respondents (n = 3,854)

These results indicate that in total 4.9% of New Zealand adults (approximately 186,000 people) had experienced at least some level of individual gambling harm in the last 12 months.

Among those who had gambled at all in the previous 12 months (see Figure 5-2):

- Over 1 in 10 (93%) respondents did not report experiencing any signs of harmful gambling; they are referred to as non-problem gamblers.
- 1 in 20 (4.7%) respondents met the PGSI criteria for low-risk gambling, 2.1% for moderate-risk gambling, and 0.2% for problem gambling.

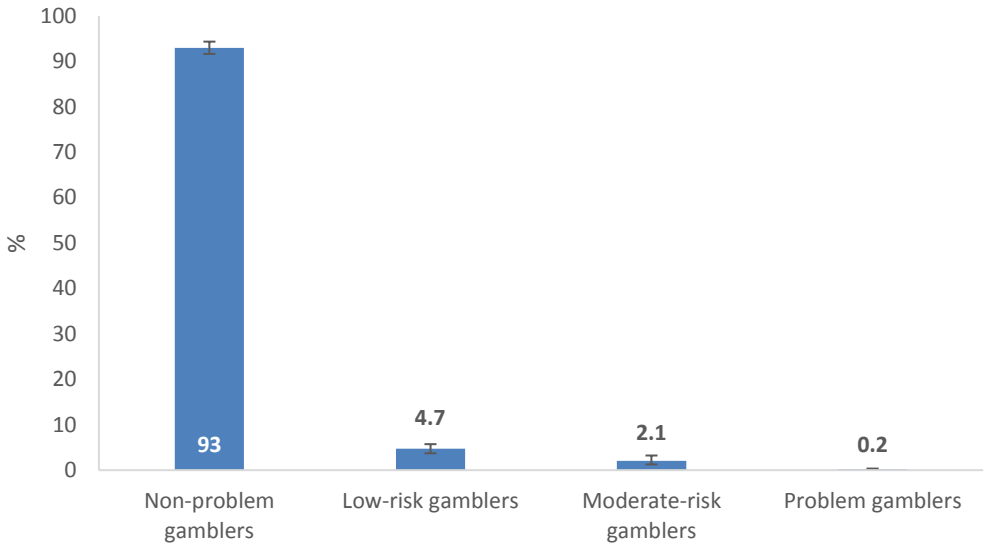


Figure 5-2: Prevalence of problem gambling of those who gambled in the previous 12 months, 2016

Base = respondents who had gambled in the previous 12 months (n = 2,686)

These results indicate that in total, 7% of past-year gamblers had experienced at least some level of individual gambling harm in the last 12 months.

Because the numbers of respondents who are moderate-risk or problem gamblers are very low, it is sometimes useful to combine them into one group. The combined group is referred to as moderate-risk/problem gamblers throughout the report.

Experience of individual gambling harm by subgroups

The experience of individual gambling harm (PGSI groups) by subgroups is shown in Table 5-1. Gambling harm did not appear to vary by gender, however differences were observed by age, ethnicity and deprivation:

- People aged 15 to 24 were more likely to be non-gamblers than people 25 years and over, and there were no moderate-risk/problem gamblers aged between 15 to 17 years.
- Pacific and Asian people were more likely to be non-gamblers compared with Māori and those of European/Other ethnicity.
- Pacific people were more likely to be low-risk gamblers than people of European/Other ethnicity.

- Māori were more likely to be moderate-risk/problem gamblers compared with people of European/Other ethnicity.
- People living in mid and high levels of deprivation were more likely to be moderate-risk/problem gamblers than people living in low deprivation.

Table 5-1: Gambling harm (PGSI) by subgroups, 2016

PGSI	Gender		Age group (in years)				Prioritised ethnicity			
	Male (%)	Female (%)	15 - 17 (%)	18 - 24 (%)	25 - 44 (%)	45+ (%)	Māori (%)	Pacific (%)	Asian (%)	European /Other (%)
Non-gambler	28 (25-31)	32 (29-34)	62 (47-77)	42 (34-50)	30 (26-35)	23 (21-26)	27 (22-32)	39 (32-45)	48 (41-55)	26 (23-28)
Non-problem gambler	66 (63-70)	64 (62-67)	36 (21-52)	53 (44-62)	65 (60-69)	72 (69-74)	63 (58-68)	52 (45-58)	46 (38-53)	71 (68-74)
Low-risk gambler	3.6 (2.6-4.7)	3 (2.1-4)	2.6 (0.2-10)	2.1 (0.5-5.6)	3.5 (2.2-4.7)	3.6 (2.6-4.6)	5.3 (3.1-7.6)	7.4 (4.1-10.7)	2.8 (0.8-6.9)	2.7 (1.9-3.4)
Moderate-risk/problem gambler	2.3 (1.1-3.5)	1 (0.4-1.5)	0 (0-3.2)	2.8 (0.4-9.2)	1.5 (0.7-2.4)	1.5 (0.8-2.1)	4.6 (2.6-6.6)	1.8 (0.7-3.6)	2.9 (0.4-9.6)	0.8 (0.4-1.2)
Sample size (n)	**1,575**	**2,279**	**83**	**336**	**1,338**	**2,097**	**930**	**615**	**325**	**1,984**

PGSI	Deprivation			Total
	Low (%)	Mid (%)	High (%)	(%)
Non-gambler	27 (23-32)	30 (26-33)	33 (29-37)	**30 (27-32)**
Non-problem gambler	70 (65-74)	65 (61-69)	61 (57-65)	**65 (63-68)**
Low-risk gambler	2.8 (1.6-4.3)	3.4 (2.2-4.6)	3.8 (2.5-5.1)	**3.3 (2.6-4)**
Moderate-risk/problem gambler	0.3 (0-1)	2.3 (1.1-4.2)	2.1 (1.1-3)	**1.6 (1-2.3)**
Sample size (n)	**878**	**1,347**	**1,629**	**3,854**

Base= all respondents (n = 3,854)

5.1.2 Experience of individual gambling harm: Comparison with previous years

There has been a decrease in the proportion of non-problem gamblers and low-risk gamblers in the time period since 2010 (see Figure 5-3).

- 72% of respondents were non-problem gamblers in 2010 and this dropped to 65% in 2016. In terms of the population, this was a drop from around 2,485,000 adults in 2010 to 2,466,000 in 2016 (see Table 5-3 for the population estimates).
- 6.0% of respondents were low-risk gamblers in 2010 and this dropped to 3.3% in 2016. This was a drop from around 205,000 adults in 2010 to 125,000 in 2016.
- These declines are balanced by a rise in the proportion of non-gamblers, from 19% in 2010 to 30% in 2016. This was around 644,000 adults in 2010 and 1,121,000 in 2016.

These time trends are driven by a particularly low prevalence of non-gamblers in 2010; between 2012 and 2016, the PGSI groups have remained stable.

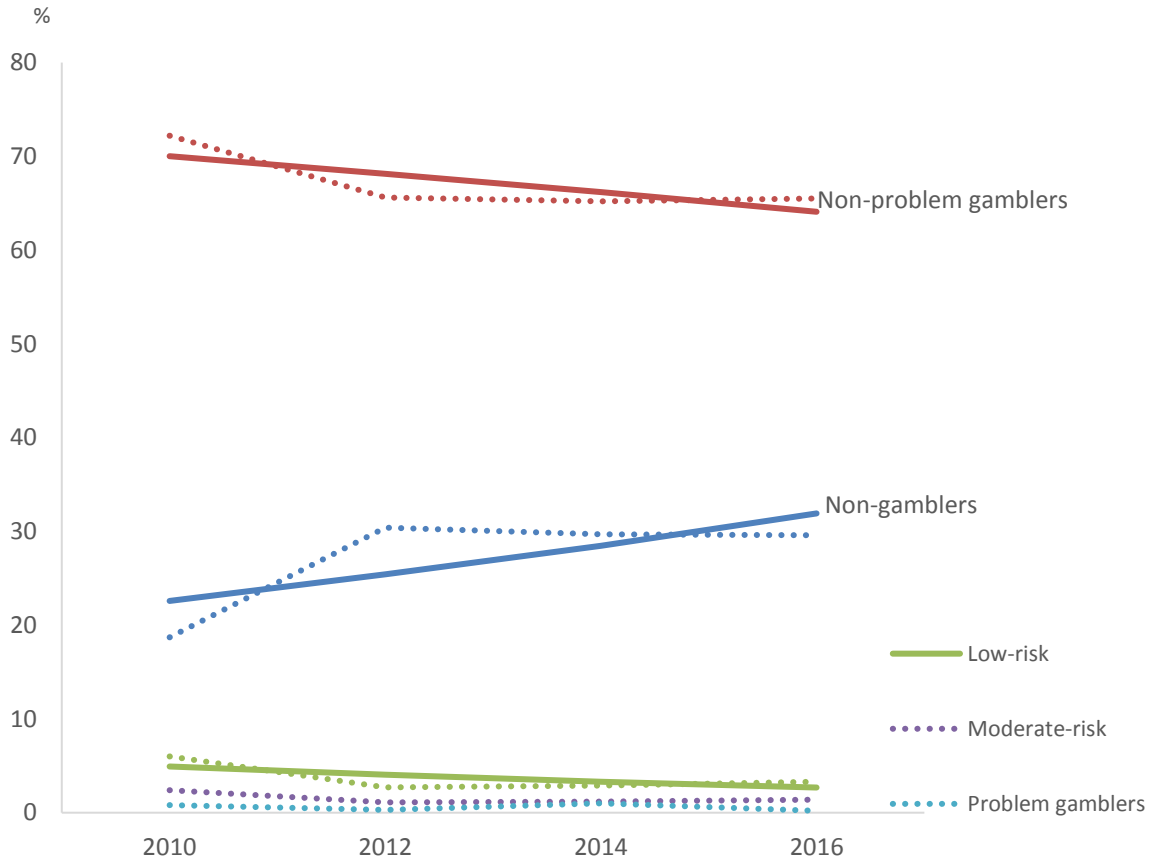


Figure 5-3: Levels of gambling harm (PGSI groups), 2010 to 2016

Base = all respondents

The proportions of moderate-risk and problem gamblers have remained at a steady level since 2010 and do not have significant time trends, although the proportion of problem gamblers in 2016 (0.1%) is significantly lower than in 2010 (0.8%). Low-risk, moderate-risk and problem gambler proportions are shown in Figure 5-4, as well as the trend line for the low-risk group. See Table 5-2 for the proportions of New Zealand adults in each PGSI group since 2010.

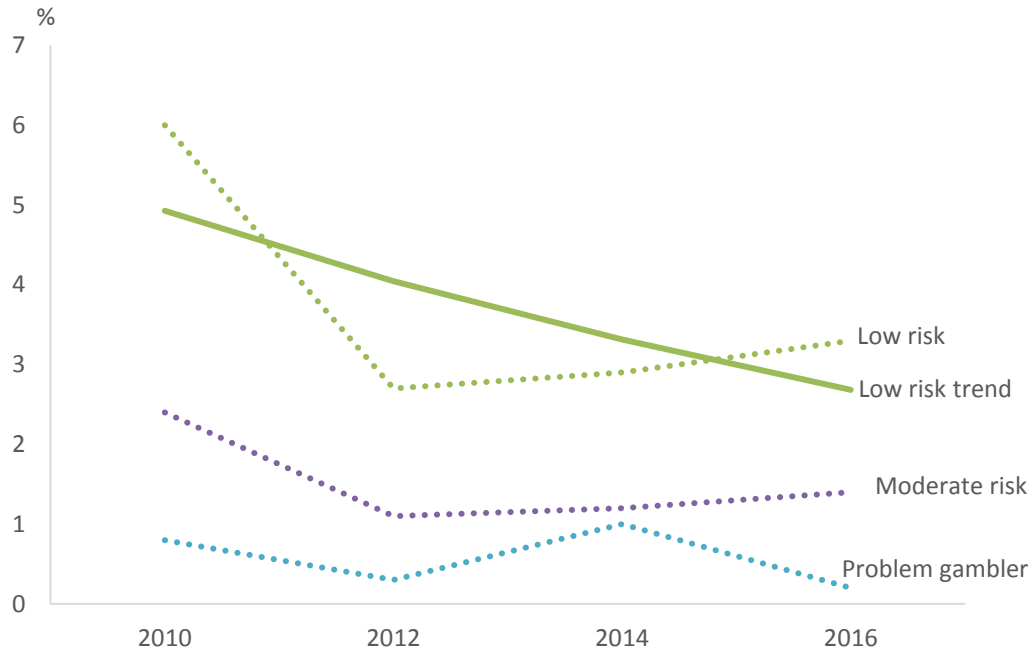


Figure 5-4: Levels of gambling harm (PGSI groups), for gamblers who experienced some level of gambling harm, 2010 to 2016

Base= all respondents

There have been minor variations in the levels of gambling harm for respondents of Māori, Pacific and Asian ethnicity (see Figure 5-5). Linear time trends since 2010 exist for Māori problem gamblers (decreasing), Pacific non-gamblers (increasing) and Pacific moderate-risk gamblers (decreasing).

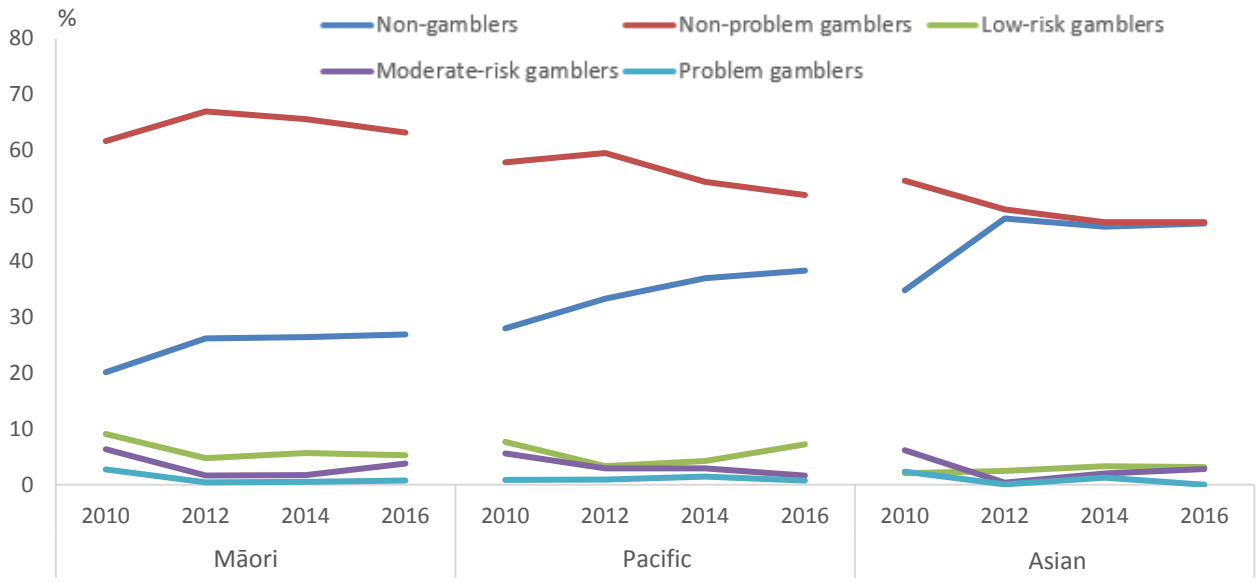


Figure 5-5: Levels of gambling harm (PGSI groups), for people of Māori, Pacific and Asian ethnicity (total response ethnicity), 2006/07 to 2016

Base = Respondents of each ethnicity (in 2016, Māori n = 930, Pacific n = 706, Asian n = 373)

Although there was no general time trend for moderate-risk/problem gamblers in the general population, there are overall time trends for people of Māori and Pacific ethnicity (see Figure 5-6). The proportion of Māori and Pacific who are moderate-risk/problem gamblers has been decreasing over time:

- In 2010, 9.1% of Māori were moderate-risk/problem gamblers; this dropped to 4.5% in 2016.
- In 2010, 6.5% of Pacific people were moderate-risk/problem gamblers; this dropped to 2.3% in 2016.

There is not a significant time trend for moderate-risk/problem gamblers who are Asian.

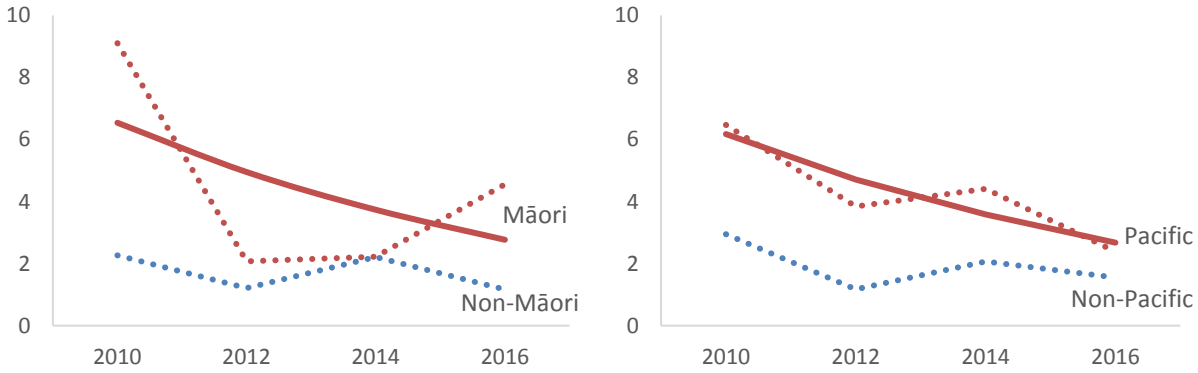


Figure 5-6: Levels of moderate-risk/problem gamblers over time, for Māori and non-Māori respondents (left) and for Pacific and non-Pacific respondents (right), 2006/07 to 2016

Base = respondents of each ethnicity (in 2016, Māori n = 930, Pacific n = 706)

Table 5-2: Levels of gambling harm (PGSI groups) over time, by total response ethnicity

	Year	Total	Māori	Pacific	Asian
Non-gambler	**2010**	19 (15 - 22)	20 (15 - 26)	28 (21 - 35)	35 (20 - 49)
	2012	30 (28 - 33)	26 (22 - 31)	33 (26 - 40)	48 (38 - 58)
	2014	30 (27 - 33)	27 (21 - 32)	37 (30 - 44)	46 (35 - 58)
	2016	30* (27 - 32)	27 (22 - 32)	38* (32 - 44)	47 (40 - 54)
Non-problem gambler	**2010**	72 (69 - 76)	62 (55 - 68)	58 (50 - 66)	55 (39 - 70)
	2012	66 (63 - 68)	67 (62 - 72)	60 (52 - 67)	49 (39 - 60)
	2014	65 (62 - 68)	66 (60 - 71)	54 (47 - 62)	47 (37 - 57)
	2016	65* (63 - 68)	63 (58 - 68)	52 (46 - 58)	47 (40 - 54)
Low-risk gambler	**2010**	6.0 (4.4 - 7.5)	9.1 (5.7 - 12.5)	7.7 (3.8 - 11.5)	2.1 (0.3 - 7.0)
	2012	2.7 (1.9 - 3.5)	4.8 (2.8 - 7.5)	3.3 (1.3 - 6.9)	2.5 (0.6 - 6.4)
	2014	2.9 (2.0 - 3.9)	5.7 (3.1 - 8.3)	4.2 (1.4 - 9.4)	3.3 (0.5 - 10.8)
	2016	3.3* (2.6 - 4.0)	5.3 (3.1 - 7.6)	7.3 (4.1 - 11)	3.2 (1.1 - 7.0)
Moderate-risk gambler	**2010**	2.4 (1.5 - 3.3)	6.4 (3.4 - 10.7)	5.6 (2.6 - 10.3)	6.2 (1.6 - 15.5)
	2012	1.1 (0.6 - 1.5)	1.7 (0.8 - 3.0)	2.9 (1.1 - 6.1)	0.4 (0.0 - 1.5)
	2014	1.2 (0.6 - 1.7)	1.7 (0.9 - 3.0)	3.0 (1.2 - 6.1)	2.0 (0.2 - 7.3)
	2016	1.5 (0.8 – 2.1)	3.8† (1.9 - 5.7)	1.6* (0.7 - 3.3)	2.8 (0.4 – 9.1)
Problem gambler	**2010**	0.8 (0.4 - 1.4)	2.7 (1.2 - 5.4)	0.9 (0.2 - 2.3)	2.3 (0.3 - 7.9)
	2012	0.3 (0.1 - 0.5)	0.4 (0.1 - 1.1)	0.9 (0.2 - 2.5)	0
	2014	1.0 (0.2 - 3.4)	0.5 (0.1 - 1.5)	1.5 (0.3 - 4.2)	1.3 (0.1 - 5.9)
	2016	0.1* (0.1 - 0.3)	0.7* (0.4 - 1.4)	0.7 (0.1 - 2.4)	0

Base = all respondents (in 2016, Māori n = 930, Pacific n = 706, Asian n = 373)

** Significant difference (p < 0.05) between 2016 and 2010*

† Significant difference between 2016 and 2014

Table 5-3: Estimated resident population for levels of gambling harm

	Non-gamblers	Non-problem gamblers	Low-risk gamblers	Moderate-risk gamblers	Problem gamblers
2010	644,000 (529,000 - 760,000)	2,485,000 (2,363,000 - 2,606,000)	205,000 (152,000 - 259,000)	81,000 (50,000 - 112,000)	27,000 (13,000 - 49,000)
2012	1,057,000 (960,000 - 1,154,000)	2,281,000 (2,191,000 - 2,371,000)	95,000 (67,000 - 123,000)	37,000 (20,000 - 54,000)	9,000 (4,000 - 18,000)
2014	1,069,000 (954,000 - 1,184,000)	2,347,000 (2,233,000 - 2,460,000)	106,000 (71,000 - 140,000)	42,000 (23,000 - 61,000)	37,000 (6,000 - 123,000)
2016	1,121,000 (1,034,000 - 1,207,000)	2,466,000 (2,376,000 - 2,556,000)	125,000 (98,000 - 152,000)	55,000 (31,000 - 80,000)	6,000 (3,000 - 11,000)

5.1.3 Gambling harm, by monthly participation in four common forms of gambling activity

In New Zealand, common gambling activities include purchasing Lotteries Commission products,[8] using gaming machines in pubs or clubs, sports/racing betting and informal gambling.[9] This section considers gambling harm among people engaging in each of these activities.

The proportion of adults who participated in each of these four common gambling activities at least monthly, separated by gambling harm, is shown in Table 5-4. This information is important because regular participation in continuous forms of gambling is a known risk factor for the development of gambling problems (Abbott, 2001).

Note that in this section, the breakdown by PGSI is only shown for at least monthly participation in activities with a high enough number of participants ($n \geq 30$) to be analysed further. These include purchasing Lotteries Commission products, using gaming machines in pubs or clubs, sports/racing betting and informal gambling. Because the sample sizes used in this section are often small, the confidence intervals of the estimates are large.

The key findings for 2016 were:

- The majority of people who bought Lotteries Commission products (90%; 95% CI = 88, 92%), bet on races or sports (74%; 64, 83%) or gambled informally (90%; 85, 94%) monthly were non-problem gamblers. About half (51%; 39, 63) of respondents who played gaming machines in a pub or club at least monthly were non-problem gamblers.

- Almost half (49%; 37, 61%) of people who played pokie machines in pubs or clubs at least once a month had at least some level of gambling harm.

- Over one quarter (26%; 17, 36%) of the people who bet on races or sports at least monthly had at least some level of gambling harm.

Comparison with previous years

The proportion of adults who participated in each of the four common gambling activities who experienced any harm from their gambling is shown in Figure 5-7 over the period 2010 to 2016.

- People who played pokies in pubs or clubs in the last year were more likely to experience harm from gambling than people who participated in the other three common gambling activities. Out of people who played pokies, the rate of experiencing at least some level of gambling harm was highest in 2010 (57%; 44, 70%), dipped in 2012 (to 38%; 26, 50%) and rose to 49% (37, 61%) in 2016. However, these changes are not statistically significant.

[8] *Lotteries Commission products include: Lotto, Keno, Bullseye, Strike, Powerball, Big Wednesday and Saturday, Instant Kiwi or scratch tickets*
[9] *Informal gambling includes: raffle ticket or casino fundraising evening, sweepstakes with friends or colleagues, bets for money with family or friends;*

- Levels of gambling harm were also high for those who had participated in betting on horse and dog racing or sports events, although there have been no statistically significant changes over time.
- The trend for Lotteries Commission products almost exactly matches the trend for participation in any gambling activity at all, driven by buying lottery tickets being the most common gambling activity; participated in at least monthly by 31% of New Zealand adults in 2016.

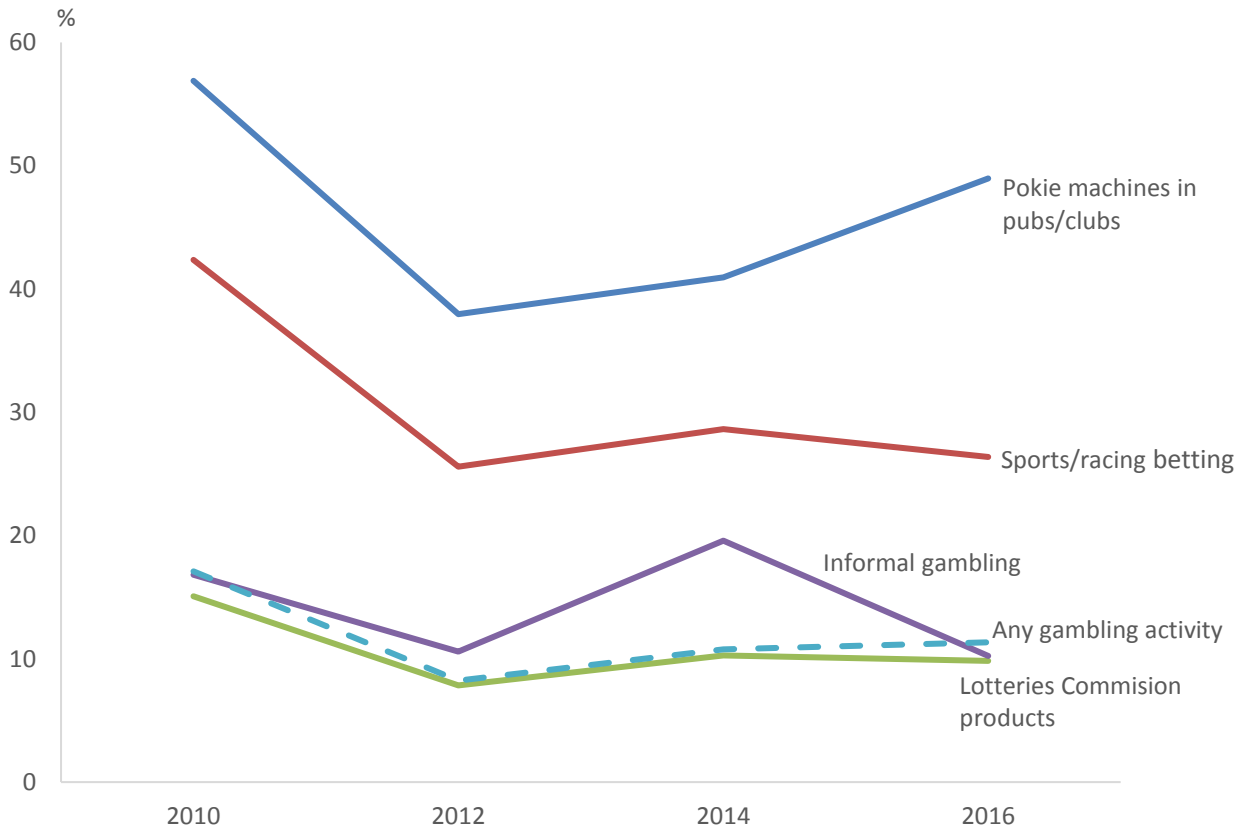


Figure 5-7: Proportion of respondents who participated in each activity at least monthly who experienced at least some level of gambling harm*, 2010 to 2016

Base = participated in each activity at least monthly in the past year

**Includes low-risk, moderate-risk and problem gamblers*

Table 5-4: Gambling harm, by at least monthly participation in playing gaming machines in pubs or clubs, sports or racing betting, buying lottery tickets, and informal gambling activities, 2010 to 2016

	Year	Non-problem gambler	Low risk gambler	Moderate-risk/problem gambler	**At least some level of gambling harm***	Sample size
Gaming machines in pubs/clubs	2010	43 (30 - 56)	30 (16 - 43)	27 (17 - 37)	57 (44 - 70)	122
	2012	62 (50 - 74)	22 (10 - 35)	16 (6.9 - 24)	38 (26 – 50)	124
	2014	59 (32 - 86)	13 (3.0 - 23)	28 (0 - 59)	41 (14 - 68)	100
	2016	51 (39 - 63)	21 (11 - 30)	28 (17 - 40)	49 (37 - 61)	137
Sports/racing betting	2010	58 (39 - 76)	32 (14 - 50)	10 (0.8 - 20)	42 (24 - 61)	61
	2012	74 (59 - 90)	15 (6.2 - 24)	10 (1.7 - 19)	26 (9.8 - 41)	95
	2014	71 (48 - 95)	8.6 (2.2 - 15)	20 (0 - 46)	29 (5.2 - 52)	100
	2016	74 (64 - 83)	14 (5.8 - 23)	12 (5.8 - 18)	26 (17 - 36)	144
Lotteries Commission products	2010	85 (81 - 89)	9.7 (6.6 - 13)	5.3 (3.5 - 7.2)	15 (12 - 19)	694
	2012	92 (90 - 94)	5.3 (3.4 - 7.3)	2.5 (1.3 - 3.7)	7.8 (5.7 - 10)	1,004
	2014	90 (85 - 94)	5.3 (3.3 - 7.4)	5.0 (0.9 - 9.1)	10 (6.0 - 15)	922
	2016	90 (88 - 92)	6.5 (4.9 - 8.2)	3.3 (2.1 - 4.5)	9.8 (7.7 - 12)	1,314
Informal gambling	2010	83 (77 - 89)	8.8 (4.1 - 14)	8.0 (3.9 - 12)	17 (11 - 23)	208
	2012	89 (83 - 96)	5.8 (2.3 - 9.4)	4.7 (0 - 10)	11 (4.4 - 17)	182
	2014	80 (62 - 98)	5.6 (0.9 - 10)	14.0 (0 - 33)	20 (1.7 - 38)	163
	2016	90 (85 - 94)	7.1 (3.1 - 11)	3.1 (0.8 - 5.5)	10 (5.6 - 15)	254
Any gambling activity	2010	83 (79 - 87)	11 (7.9 - 14)	6.2 (3.8 - 8.6)	17 (13 - 21)	817
	2012	92 (90 - 94)	5.5 (3.8 - 7.3)	2.7 (1.6 - 3.9)	8.2 (6.0 - 10)	1,144
	2014	89 (86 - 93)	5.2 (3.3 - 7.1)	5.6 (2.1 - 9.1)	11 (7.1 - 15)	1,067
	2016	89 (86 - 91)	7.1 (5.4 - 8.8)	4.3 (2.5 - 6.0)	11 (9.0 - 14)	1,532

Base = respondents who participated in each activity at least monthly in the past year

**Includes low-risk, moderate-risk and problem gamblers*

5.1.4 Gambling harm, by gambling participation frequency

All respondents who had, in the past year, participated in at least one of the fourteen gambling activities asked about in the HLS were assigned to a gambling frequency group based on how frequently they had participated. Respondents who had participated in more than one gambling activity were grouped according to their most frequent activity. These groups are mutually exclusive, that is, a person was assigned to the "*More than once a week*" group if they bought a lottery ticket more than once a week and also played gaming machines at pubs or clubs once a month.

Problem gambling behaviour (PGSI) by frequency of gambling participation is shown in Table 5-5, with the key results being:

- The majority of adults who gambled more often than once a week (80%), once a week (89%), once a month (90%) and less often than monthly (98%) were non-problem gamblers.

- One in five (20%) people who gambled more than once a week exhibited at least some level of gambling harm.

Table 5-5: Gambling harm, by gambling participation frequency, 2016

PGSI	Gambling participation frequency (mutually exclusive)				Overall %
	More than once a week %	**Once a week %**	**Once a month %**	**Less often than monthly %**	
Non-problem gambler	80 (70-87)	89 (86-92)	90 (86-94)	98 (96-99)	93 (92-94)
Low-risk gambler	9.7 (4.9-17)	7.4 (5-9.8)	6.4 (4-9.6)	2.2 (1.2-3.6)	4.7 (3.7-5.7)
Moderate-risk/problem gambler	11 (5-17)	3.6 (1.9-5.3)	3.8 (0.6-6.9)	0.2 (0-0.4)	2.3 (1.4-3.2)
At least some level of gambling harm	**20 (13-28)**	**11 (8.2-14)**	**10 (6.2-14)**	**2.4 (1.2-3.5)**	**7 (5.7-8.4)**
Sample size (n)	**156**	**675**	**701**	**1,152**	**2,684**

Base = respondents who reported participating in any form of gambling in the previous 12 months (n = 2,686)

**Includes low-risk, moderate-risk and problem gamblers*

5.1.5 Gambling harm, by geographic region

To draw comparisons between geographic regions of New Zealand, the levels of individual gambling harm (PGSI groups) are presented in Figure 5-8 for five regions: Auckland, Wellington, the North Island excluding Auckland and Wellington, Canterbury, and the South Island excluding Canterbury.

- Auckland has the highest proportion of non-gamblers (40%) and the lowest proportion of non-problem gamblers (55%).
- The proportions of low-risk gamblers and moderate-risk/problem gamblers is similar for all regions.

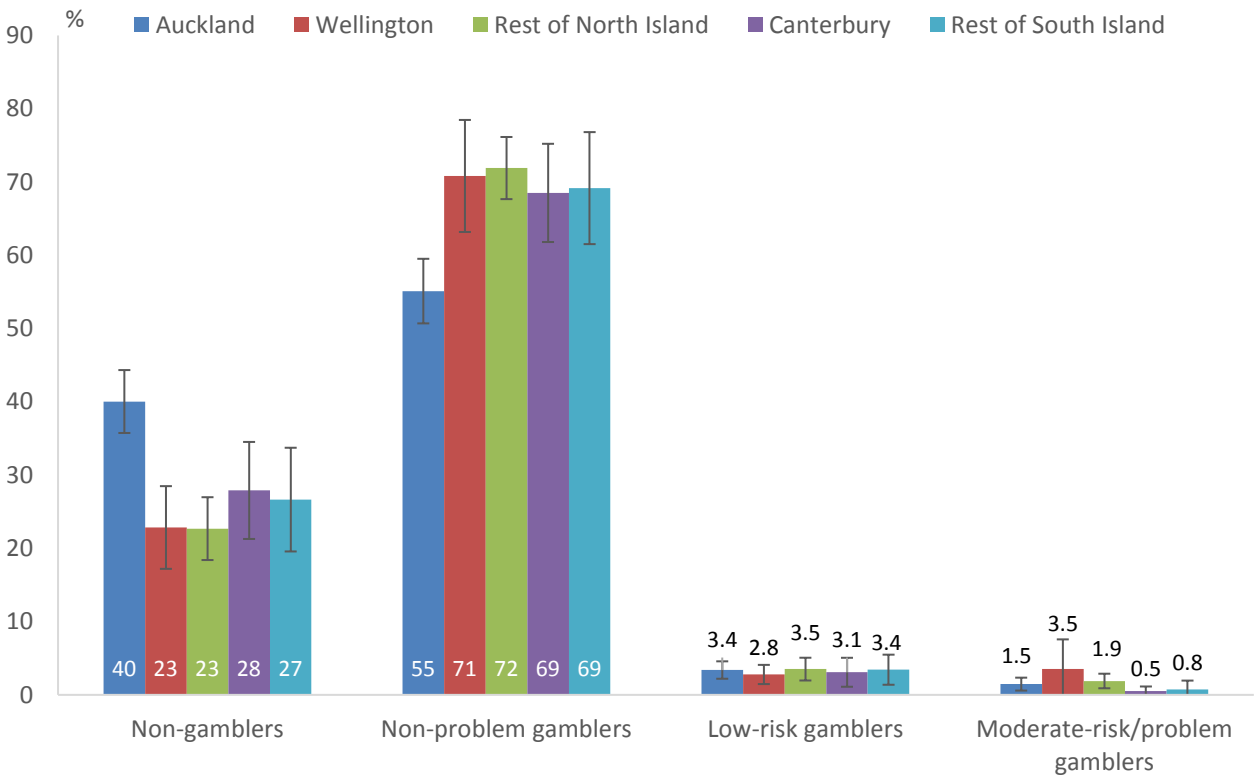


Figure 5-8: PGSI groups across region, 2016

Base = all respondents

A linear regression model was used to test for significant differences between the mean PGSI scores across the five regions. The mean PGSI score for Canterbury (0.08 ±0.06) was significantly lower than both Auckland (0.22 ±0.1) and the rest of the North Island (0.18 ±0.07).

5.1.6 Profile of participants who experienced individual gambling harm

A series of logistic regression models were performed in order to find factors that predict low-risk gambling behaviour and moderate-risk/problem gambling behaviour. A model was also created to identify the factors that predict gambling with any level of harm.

Low-risk gambling

Low-risk gambling behaviour (defined as having a PGSI score of 1 or 2, *n*=148) was associated with ethnicity and smoking status. Table 5-6 shows that both Māori (8%) and Pacific (13%) were more likely to be low-risk gamblers compared with those of European/Other ethnicity (4%). Current smokers (9%) were more likely to be a low-risk gambler compared with those who never smoked (3%).

Table 5-6: Predictors of low risk gambling

	Proportion	95% CI of proportion		Odds ratio	95% CI of odds ratio	
		Lower	Upper		Lower	Upper
Overall	5.0%	3.7%	6.3%			
Ethnicity						
Māori	7.8%	4.5%	11%	**1.93***	1.09	3.41
Pacific	13%	7.03%	18%	**3.54*****	1.87	6.69
Asian	5.8%	0.3%	11%	2.07	0.61	6.98
European/Other	3.6%	2.6%	4.7%	Reference		
Smoking status						
Never smoked	3.4%	1.7%	5.1%	Reference		
Currently smoke	8.9%	5.3%	12%	**2.68***	1.25	5.75
Used to smoke	4.4%	3.1%	5.6%	1.48	0.81	2.70

Base = non-problem and low-risk gamblers (n = 2,597)

** p < 0.05, ** p < 0.01, *** p < 0.001*

Outcome variable: 1=Low-risk gambler (PGSI = 1-2); 0=Non-problem gambler (PGSI = 0)

Moderate-risk/problem gambling

Moderate-risk and problem gamblers (PGSI score ≥ 3) were grouped together because there were very few respondents in either category (89 respondents all together). Logistic regression was performed to find the factors that predict gambling at a moderate-risk or problem level (as opposed to non-problem gambling). Moderate-risk/problem gambling behaviour was associated with ethnicity and smoking status.

Table 5-7 shows that Māori (6.7%) and Asian people (5.9%) were more likely to be moderate-risk/problem gamblers compared with people of European/Other ethnicity (1.1%). Current smokers had a much higher probability of being moderate-risk/problem gamblers than those who had never smoked (7.8% versus 0.7%).

Table 5-7: Predictors of moderate-risk/problem gambling

	Proportion	95% CI of Proportion		Odds ratio	95% CI of Odds ratio	
		Lower	Upper		Lower	Upper
Overall	2.4%	1.4%	3.4%			
Ethnicity						
Māori	6.7%	3.8%	9.7%	**4.7*** **	2.4	9.2
Pacific	3.3%	1.0%	5.6%	2.4	1.0	6.1
Asian	5.9%	0%	13.6%	**9.5***	1.2	73.2
European/Other	1.1%	0.5%	1.6%	Reference		
Smoking status						
Never smoked	0.7%	0.1%	1.3%	Reference		
Currently smoke	7.8%	3.0%	12.6%	**15.0****	2.5	91.1
Used to smoke	1.7%	0.8%	2.5%	3.9	1.0	15.5

*Base = Non-problem and moderate-risk/problem gamblers (n = 2,538); ** p < 0.01, *** p < 0.001; Outcome variable: 1=moderate-risk/problem gambler (PGSI ≥ 3); 0=Non-problem gambler (PGSI = 0)*

Risky gambling

Respondents with any level of gambling harm risk were grouped together: low-risk, moderate-risk and problem gamblers (all respondents with a non-zero PGSI score). Logistic regression was performed to find the factors that predict gambling with any level of risk, as opposed to non-problem gambling.

Table 5-8: Predictors of any level of **risky** gambling

	Proportion	95% CI of proportion		Odds ratio	95% CI of odds ratio	
		Lower	Upper		Lower	Upper
Overall	7.0%	5.7%	8.4%			
Ethnicity						
Māori	14%	9.5%	18%	**2.61*** **	1.67	4.07
Pacific	15%	9.5%	21%	**3.21*** **	1.85	5.57
Asian	11%	2.8%	19%	**3.24***	1.25	8.39
European/Other	4.6%	3.5%	5.8%	Reference		
Smoking status						
Never smoked	4.1%	2.3%	5.9%	Reference		
Currently smoke	15%	10%	20%	**4.34*** **	2.14	8.79
Used to smoke	5.9%	4.3%	7.5%	**1.85***	1.04	3.30

*Base = past-year gamblers (n = 2,686); * p < 0.05, ** p < 0.01, *** p < 0.001; Outcome variable: 1=low-risk/moderate-risk/problem gambler (PGSI ≥ 1); 0=Non-problem gambler (PGSI = 0)*

Risky gambling at any level was associated with ethnicity and smoking status. Table 5-8 shows that three ethnicity groups (Māori: 14%; Pacific: 15%; Asian: 11%) were more likely to experience some degree of individual gambling harm compared with the European/Other ethnicity group (4.6%). Current smokers were more likely to gamble with some level of risk compared with those who never smoke (15% versus 4.1%). The rate of risky gambling among past-smokers (5.9%) was also significantly higher compared with those who had never smoked.

5.1.7 Personal experience of gambling more than intended

Those who had participated in at least one gambling activity in the past 12 months ('past-year gamblers', *n* = 2,686) were asked about their personal experience of gambling harm in the past year. These respondents were asked: "Over the last 12 months, have you had a day, or an outing, where at the end of it you looked back or thought to yourself - I really overdid that. I spent more time or money gambling than I meant to?" In 2016, 3.2% of all gamblers aged 15 years and over said that they had gambled more than intended.

Comparison with previous years

In the GBAS, only respondents aged 18 and over were asked about if they had experienced an occasion when they overdid their gambling. Because of this, the time trend analysis was restricted to ages 18 and over.

There is a significant decreasing time trend of the proportion of past-year gamblers aged 18 and over reporting gambling more than intended on an occasion in the last 12 months. This is shown in Figure 5-9. The decline has been steady, and has dropped significantly from 11% in 2006/07 to 3% in 2016. There has not been a significant change between 2014 and 2016.

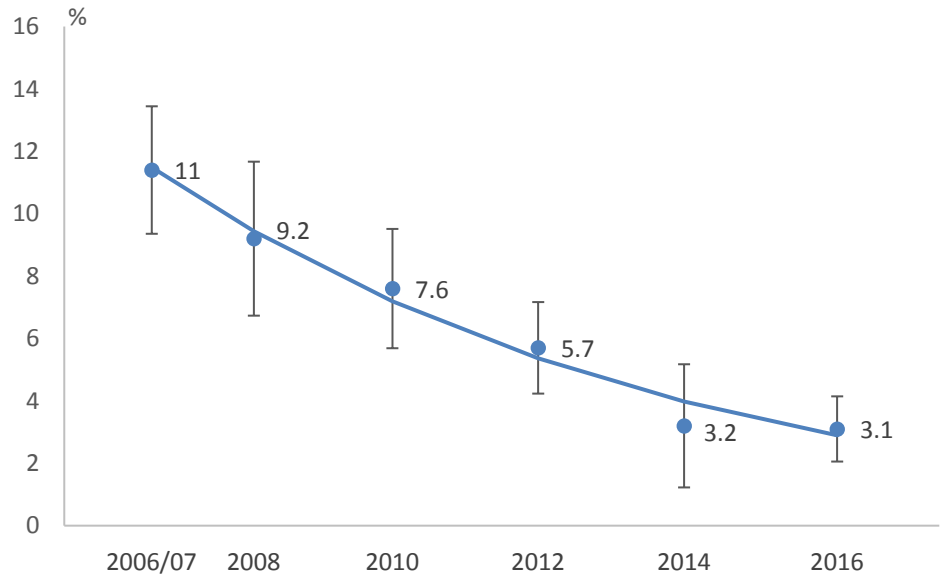


Figure 5-9: Experience of gambling more than intended in the past 12 months, 2006/07 to 2016

Base = gamblers aged 18+

Respondents of Māori ethnicity reported gambling more than intended more than non-Māori, and there has been a significant decline over time for both groups (shown in Figure 5-10). The proportion for Māori has dropped significantly from 20% in 2006/07 to 7% in 2016, but has not changed significantly from 2014. Table 5-9 presents the proportion of the total New Zealand population over 15 years who reported gambling more than intended in the past 12 months, as well as comparing Māori and non-Māori populations.

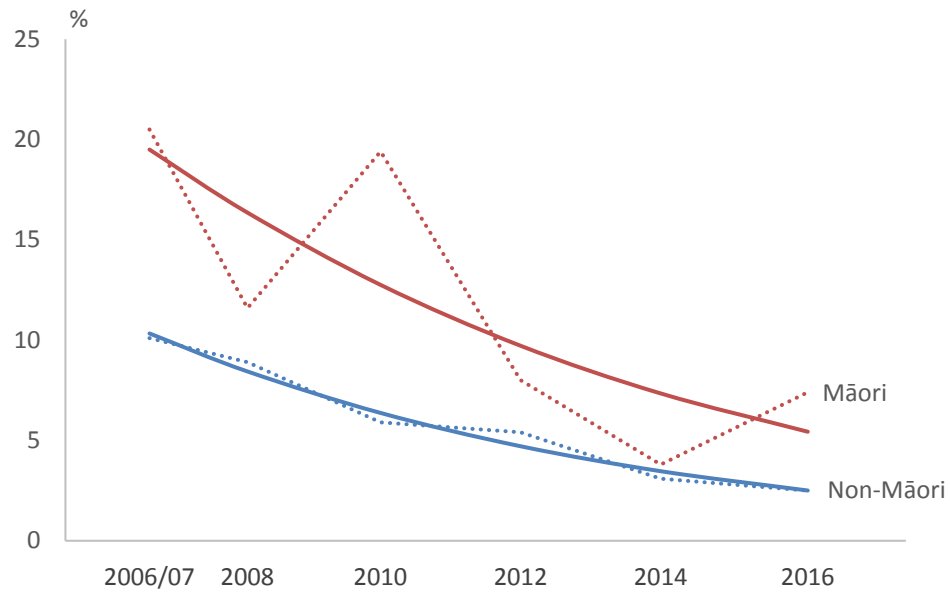


Figure 5-10: Experience of gambling more than intended in the past 12 months for Māori and non-Māori, 2006/07 to 2016

Base = gamblers aged 18+

Table 5-9: Experience of gambling more than intended in the past 12 months, 2006/07 to 2016.

Year	Total (%)	Māori (%)	Non-Māori (%)
2006/07	11 (9.4 - 14)	20 (14 - 27)	10.1 (7.8 - 12.3)
2008	9.2 (6.7 - 12)	12 (6.5 - 17)	8.9 (6.1 - 11.6)
2010	7.6 (5.7 - 9.5)	19 (13 - 25)	5.9 (3.9 - 8.0)
2012	5.7 (4.3 - 7.2)	8.0 (4.7 - 11)	5.4 (3.8 - 6.9)
2014	3.2 (1.3 - 5.2)	3.8 (2.1 - 6.3)	3.1 (0.9 - 5.4)
2016	3.1* (2.3 - 4.3)	7.4* (4.3 - 11)	2.7* (1.6 - 3.8)

Base = gamblers aged 18+

** Significant difference between 2016 and 2006/07*

† Significant difference between 2016 and 2014

Profile of adults who gambled more than intended

Gambling more than intended was associated with gender, PGSI score and the number of gambling activities participated in over the past year. A person who scored high on the PGSI and who participated in several gambling activities is more likely to have gambled more than intended.

Table 5-10: Predictors for participants who spent more time or money than intended

	Value	95% CI value		Odds ratio	95% CI of odds ratio	
		Lower	Upper		Lower	Upper
Overall (proportion)	3.2%‡	2.4%	4.4%			
Gender (proportion)						
Male	5.0%	3.5%	7.1%	**2.85***	1.05	7.71
Female	1.5%	0.9%	2.4%	Reference		
PGSI (mean out of 27)						
	3.3	2.2	4.4	**3.33*****	2.33	4.75
Gambling activities (mean out of 12)						
	4.7	4.0	5.4	**1.71*****	1.45	2.00

*Base = gamblers aged 15+ (n = 2,686); *** p < 0.001; Outcome variable: gambling more than intended (1 = yes, 0 = no)*

‡ Note that this proportion is different to that reported in Section 5.1.7 because it is out of all past-year gamblers 15+

Table 5-10 shows that males were more likely to have had an experience of gambling more than intended.

Individual gambling harm (PGSI score) was also a key predictor of spending more time or money than intended on gambling. Each PGSI score increase of one point was associated with more than three times the odds of gambling more than intended. Figure 5-11 shows that the likelihood of gambling more than intended increases rapidly for PGSI scores between three and six (ie, for gambling behaviours classed as moderate-risk).

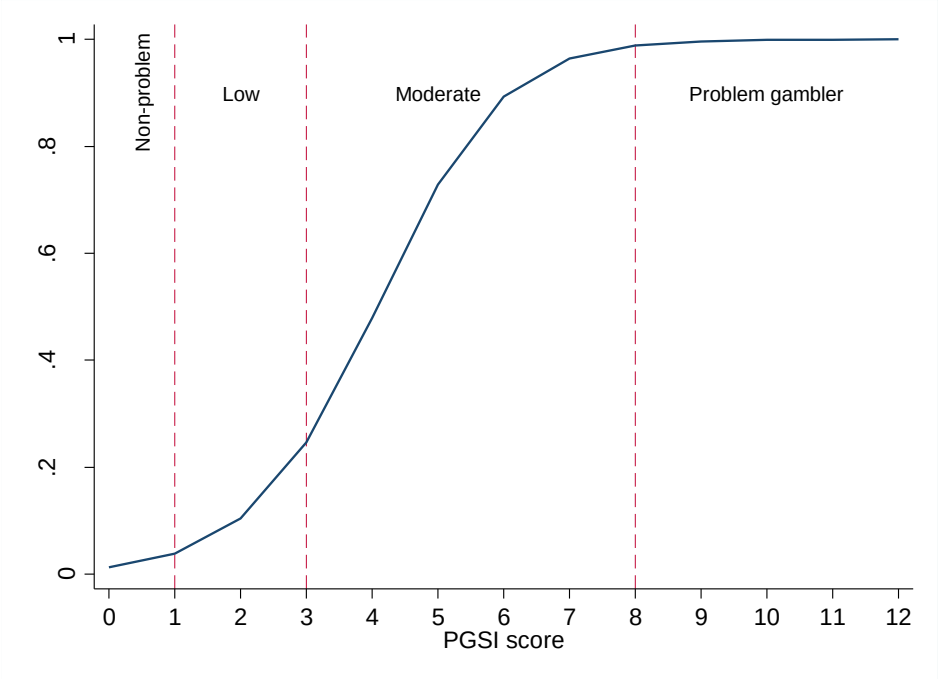


Figure 5-11: Predicted probability of gambling more than intended by PGSI score

The number of gambling activities participated in was also associated with a greater likelihood of gambling more than intended. For each additional gambling activity participated in, the odds of gambling more than intended increased by almost two times the odds than those who did not participate in any gambling activity. Figure 5-12 shows that the chance of gambling more than intended increases exponentially when six or more gambling activities are participated in.

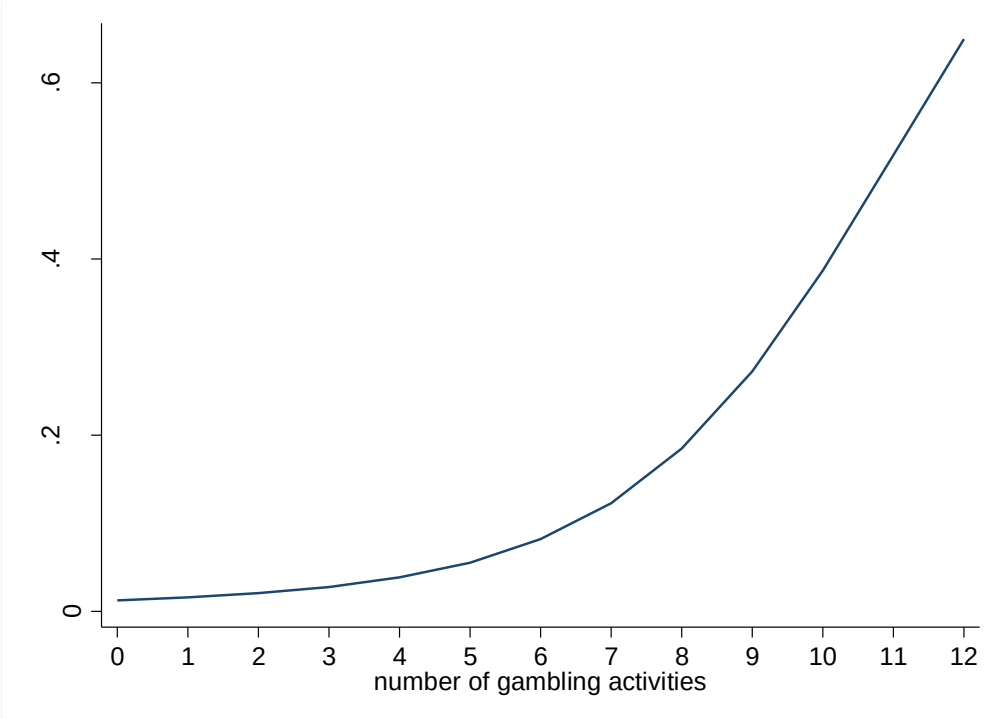


Figure 5-12: Predicted probability of gambling more than intended by the number of gambling activities participated in

Frequency of gambling more than intended

Past-year gamblers who reported an occasion during the previous year where they spent more time or money than they had intended to on gambling (*n* = 111) were then asked how many times this had happened in the past 12 months. Almost 2 in 5 (39%) had gambled more than they had intended *once*, half (49%) had done so *2-5 times*, and 3.2% *more than 20 times* (see Table 5-11). Please note when interpreting these findings that the confidence intervals are wide; that is because these proportions are out of those who reported gambling more than intended in the previous 12 months.

Table 5-11: Frequency of gambling more than intended during the previous 12 months, 2016

Number of times	%	95% CI
Once	39	22 - 55
2-5 times	49	32 - 66
6-10 times	5.5	1.8 - 13
11-20 times	0.6	0 - 2.7
More than 20 times	3.2	0.6 - 9.5
Don't know/Refused	3.0	0.6 - 8.4

Base = respondents who reported gambling more than intended in the past 12 months (n = 111)

Gambling activities where people gambled more than intended

Past-year gamblers who reported an occasion during the previous year where they spent more time or money than they had intended to on gambling (*n* = 111) were also asked about which gambling activities they were engaged in on that occasion. Over half (51%) of respondents identified gaming machines at a pub or club, 1 in 6 (16%) identified Lotteries Commission products, and 1 in 6 (15%) betting on horse or dog races (see Table 5-12).

Table 5-12: Gambling activities in which people gambled more than intended in the previous 12 months, 2016

Type of gambling activity	%	95% CI
Gaming machines or pokies at a pub or club	51	34 - 69
Lotto, Keno, Strike, Powerball, Big Wednesday or Saturday, Instant Kiwi or scratch tickets	16	8 - 28
Betting on horse or dog races	15	7 - 27
Gaming machines or pokies at one of the six casinos	13	4.5 - 26
Internet games	11	0.3 - 49
Table games, such as card games or dice, at one of the six casinos	6.3	1 - 19
Betting on sports events	5.6	1.8 - 13
Mobile phone or app games for money	0.4	0 - 1.6
Bullseye or Play 3 tickets	0.3	0.2 - 0.4
Other	0.3	0.2 - 0.5
Attending a gaming or casino evening, or buying raffle tickets for fundraising	0.1	0.1 - 0.1
Housie or bingo	0.1	0.1 - 0.1

Base = respondents who reported gambling more than intended in the past 12 months (n = 111)

5.2 SECOND-HAND GAMBLING HARM

Gambling harm does not only affect the individual who engages in the behaviour: it may also affect those who live in the same household or others close to them, referred to as ‘second-hand’ gambling harm in this report.

Possible household gambling harms identified in previous research include arguments and financial issues (Abbott et al, 2014; Dyall, 2003; Tse, Wong & Chan, 2007; Perese, 2009). These potential harms have been captured by two separate questions in the HLS. Second-hand gambling harm is also assessed by looking at the ‘impact of personal gambling on individual or others’, ‘experience of a friend or family member gambling more than intended’, and by ‘lifetime experience of being seriously impacted by someone else’s gambling’. These five harms are presented in this section.

Around 1 in 5 New Zealand adults (22%) were affected some time in their lives by their own gambling or the gambling of others. That is, they had experienced any of the harms reported on in this section.

5.2.1 Impact of personal gambling on individual or others

All respondents were asked to think about their lifetime, and indicate how much they agreed or disagreed with the statement ‘My gambling has had a serious impact on me or on others’. Around 2 in 100 (1.8%) respondents either ‘strongly agreed’ or ‘agreed’, three-quarters (76%) ‘disagreed’ or ‘strongly disagreed’, and 1 in 4 (21%) said the question was not applicable to them because they had never gambled (see Figure 5-13).

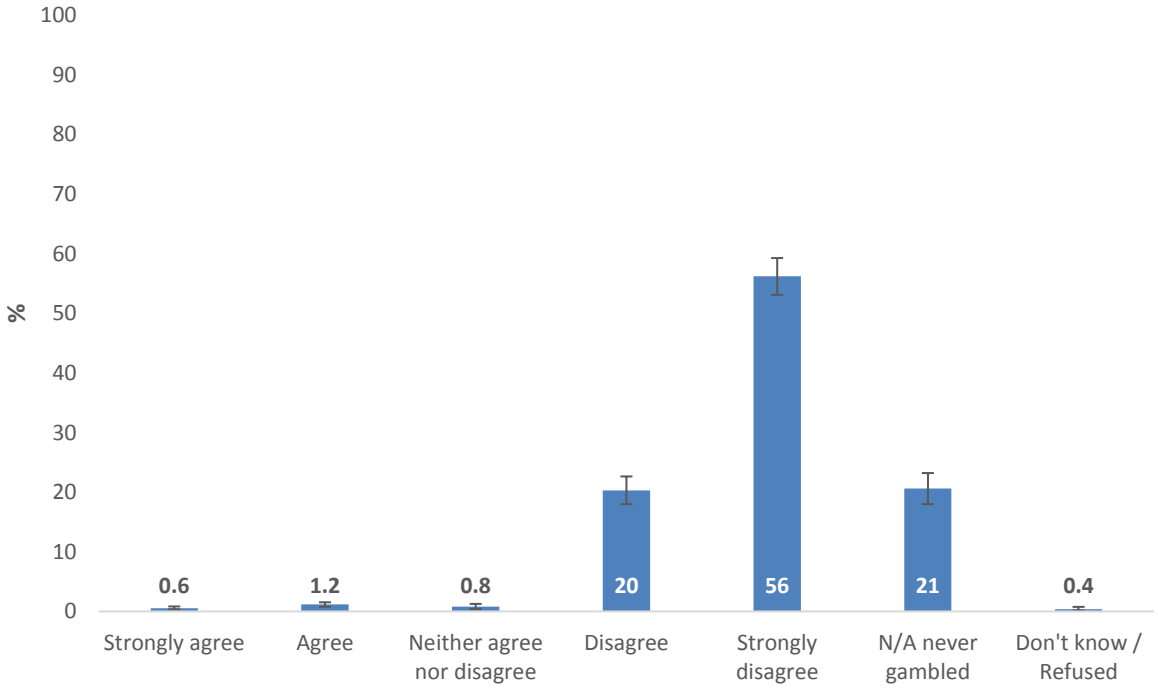


Figure 5-13: Agreement that their gambling has had a serious impact on that individual or others over respondents' lifetime, 2016
Base = all respondents (n = 3,854)

Profile of those whose gambling has had a serious impact on themselves or others (past 12 months)

Looking at respondents who had participated in any gambling activities in the past year, the only predictor of their gambling having a serious impact on themselves or others was PGSI score.

Each point that PGSI score increased was associated with an increased likelihood that respondents would agree with the statement “My gambling has had a serious impact on me and on others” (OR=1.49; 95% CI=1.17, 1.89). Figure 5-14 shows that the likelihood that gambling had a serious impact on the respondent or other increased the most for PGSI scores between three and 15 (ie, among moderate-risk and problem gamblers).

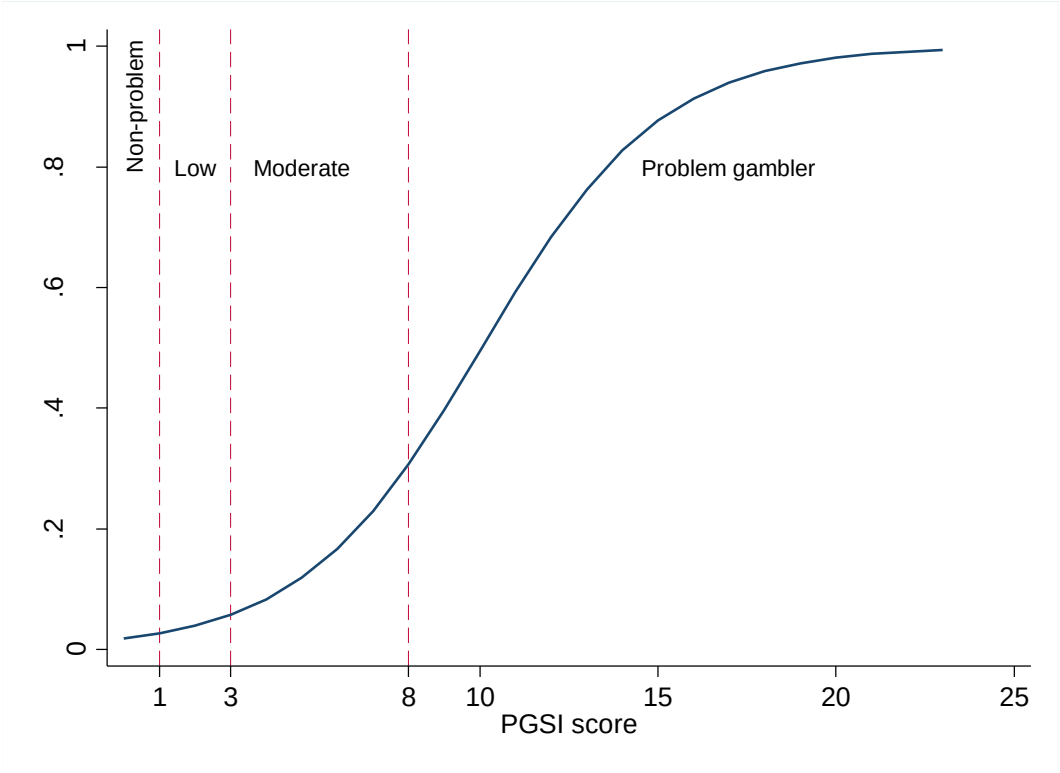


Figure 5-14: Predicted probability of agreeing that “My gambling has had a serious impact on me and on others” by PGSI score

5.2.2 Friend or family member's gambling more than intended

All respondents (*n* = 3,854) were asked "Over the last 12 months, do you feel that someone close to you, like a friend, family member or partner, has had a day or occasion where they spent much more time or money than they meant to, on gambling?" In 2016, 12% of adults said that they had experienced this in the last year.

Changes over time of friend or family member gambling more than intended

There is a significant decreasing time trend of the proportion of respondents who had experienced someone close to them gambling more than intended. The decline has been steady, and the proportion dropped significantly from 36% in 2006/07 to 12% in 2016, as can be seen in Figure 5-15. There has not been a significant change between 2014 and 2016.

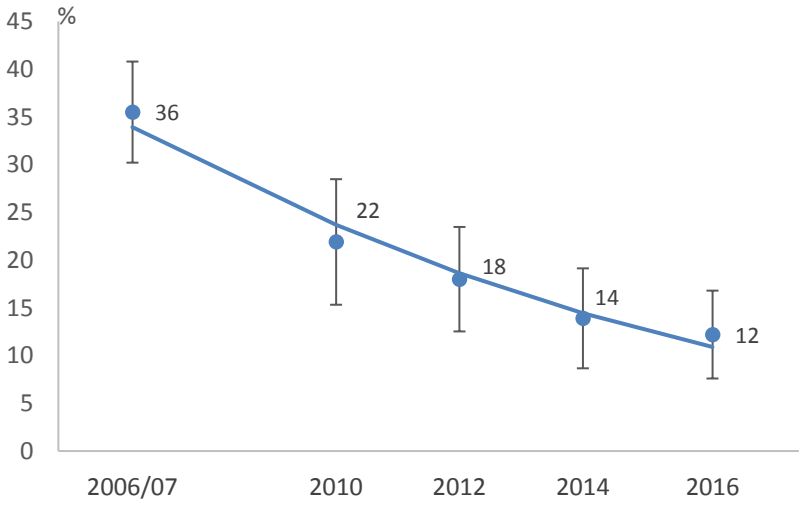


Figure 5-15: Experience of someone close gambling more than intended in the past 12 months, 2006/07 to 2016

Base = all respondents

More respondents of Māori ethnicity had experienced someone close to them gambling more than intended than non-Māori, but there has been a significant decline over time for both groups. This is shown in Figure 5-16. The proportion for Māori has dropped significantly from 60% in 2006/07 to 25% in 2016, but has not changed significantly from 2014 (see Table 5-13).

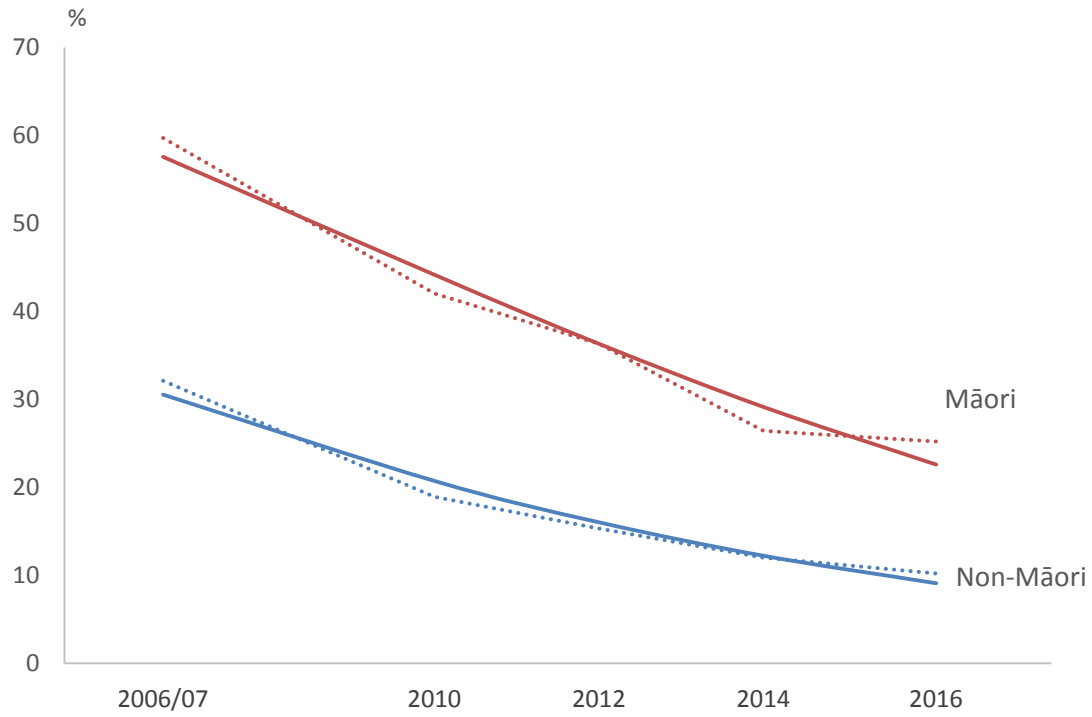


Figure 5-16: Experience of someone close gambling more than intended in the past 12 months over time, for Māori and non-Māori, 2006/07 to 2016

Base = all respondents

Table 5-13: Experience of someone close gambling more than intended in the past 12 months, 2006/07 to 2016

Year	Overall (%)	Māori (%)	Non-Māori (%)
2006/07	36 (33 - 39)	60 (54 - 65)	32 (29 - 35)
2010	22 (19 - 25)	42 (35 - 49)	19 (16 - 22)
2012	18 (16 - 20)	36 (31 - 42)	15 (13 - 18)
2014	14 (12 - 16)	26 (21 - 32)	12 (10 - 14)
2016	12* (11 - 14)	25* (21 - 30)	10* (9 - 12)

Base = all respondents (n = 3,854)

** Significant difference between 2016 and 2006/07*

† Significant difference between 2016 and 2014

Profile of those who experience someone close to them gambling more than intended

Reporting that someone close to you had gambled more than intended was predicted by ethnicity and the number of gambling activities that the respondent had participated in over the past year. Māori and Pacific people experienced someone close to them gambling more than intended more commonly than people of European/Other or Asian ethnicities. Also, those who take part in multiple gambling activities themselves are more likely to report that someone close to them had gambled more than intended.

Table 5-14 shows that ethnicity was one of the predicting factors for those who had experienced someone close gambling more than intended. Māori (25%) and Pacific (17%) people were more likely to experience this than the European/Other ethnicity (11%). The rate for Asian people (2.5%) was significantly lower compared with the rate among the European/Other group.

Table 5-14: Predictor for participants who agreed on the statement of someone close gambling more than intended

	Proportion	95% CI of proportion		Odds ratio	95% CI of odds ratio	
		Lower	Upper		Lower	Upper
Overall	12%	11%	14%			
Ethnicity						
Māori	25%	21%	30%	**2.84*** **	2.11	3.83
Pacific	17%	12%	23%	**1.96** **	1.26	3.03
Asian	2.5%	0.6%	4.3%	**0.26** **	0.11	0.62
European/Other	11%	10%	13%		Reference	
Number of activities participated (mean out of possible 12)						
	2.6	2.3	2.9	**1.35*** **	1.26	1.45

Base = All respondents (excluding don't know/refused; n = 3,809

***p < 0.01, *** p < 0.001*

Outcome variable: someone close to you gambling more than intended (1 = yes, 0 = no)

Those who take part in multiple gambling activities themselves are more likely to report that someone close to them gambled more than intended. For each additional gambling activity participated in (by the respondent), the odds that they had experienced someone else gambling more than intended increased (Figure 5-17).

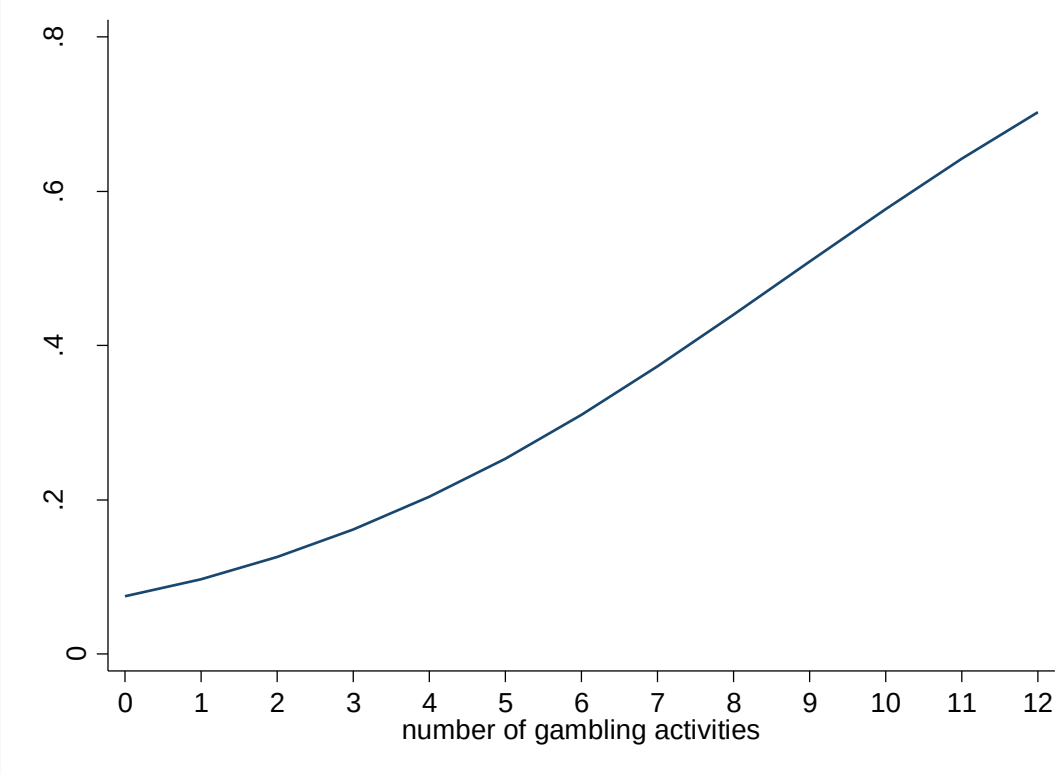


Figure 5-17: Predicted probability of reporting that someone close to you gambled more than intended by total number of gambling activities the respondents had themselves participated in

Gambling activities where a friend or family member gambled more than intended

Among those who reported that someone close to them had gambled more than intended in the previous 12 months (*n* = 536), two-thirds (65%) reported the person had done so most often on gaming machines or pokies. This comprised 53% reporting gaming machines or pokies at a pub or club, and 12% reporting gaming machines or pokies at a casino (Figure 5-18).

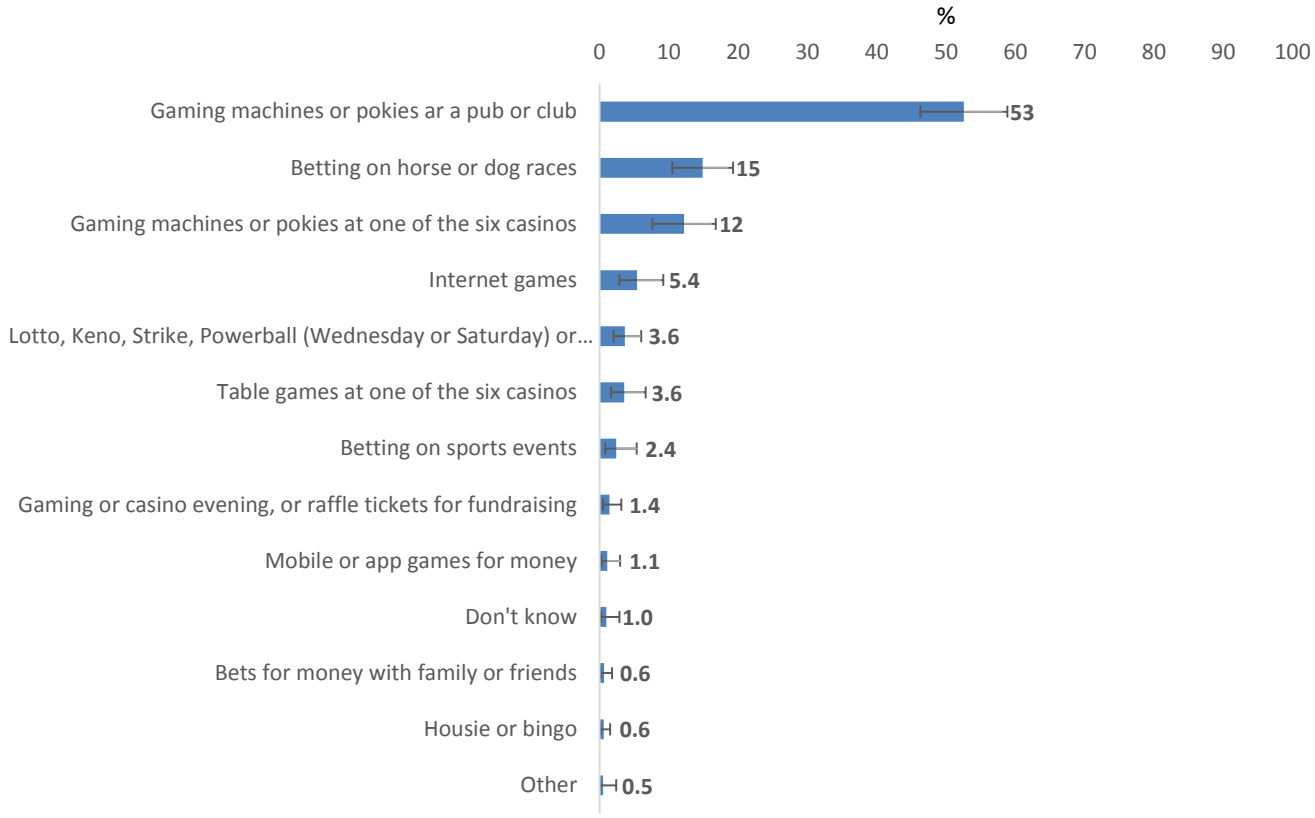


Figure 5-18: Experience of someone close gambling more than intended in past 12 months, by gambling activities, 2016

Base = respondents who reported someone close to them had gambled more than intended in the past 12 months (n = 536)

5.2.3 Impact of someone else's gambling

All respondents were asked to think about their lifetime and indicate their level of agreement with the statement: "Someone else's gambling has had a serious impact on me". One in ten (11%) either 'strongly agreed' or 'agreed'; 86% either 'disagreed' or 'strongly disagreed' (see Figure 5-19).

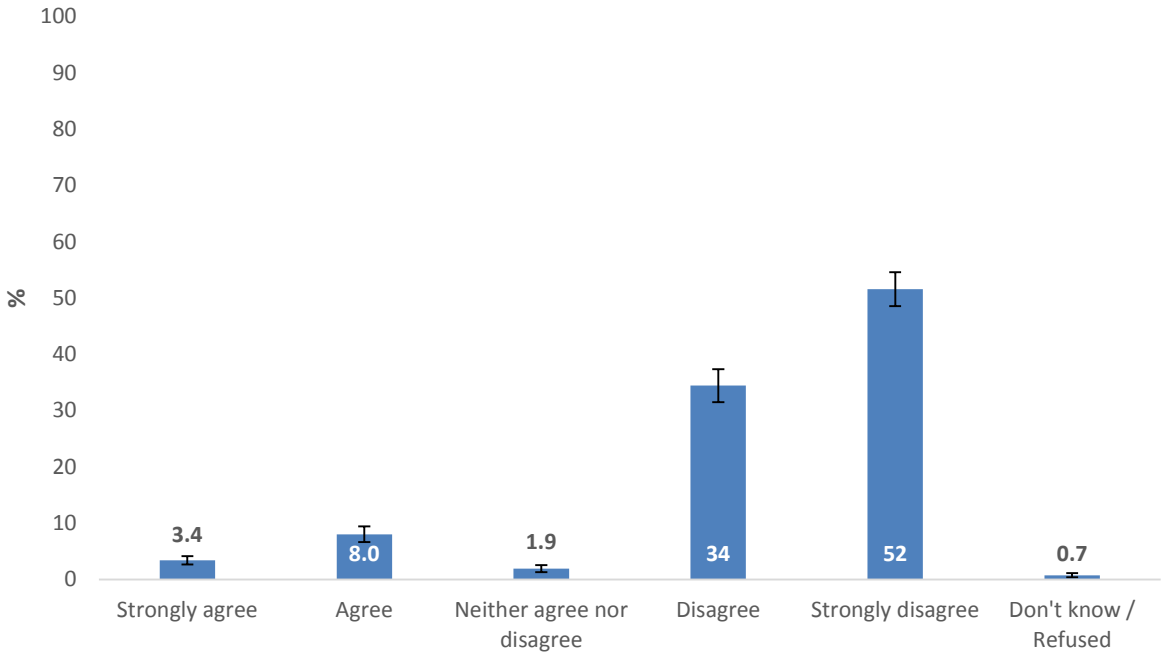


Figure 5-19: Someone else's gambling has had a serious impact on the individual over their lifetime

Base: all respondents (n = 3,854)

Profile of those impacted by someone else's gambling

Table 5-15 shows that the predictors of being impacted by someone else's gambling were ethnicity and neighbourhood deprivation.

Māori (22%) were more likely to report that they were affected by someone else's gambling compared with the European/Other ethnicity group (11%).

Respondents who lived in areas of moderate deprivation (13%) and those who lived in areas of high deprivation (14%) were significantly more likely to report that they were impacted by someone else's gambling compared with those who lived in low deprivation (8%).

Table 5-15: Predictors of being impacted by someone else's gambling

	Proportion	95% CI of proportion		Odds ratio	95% CI of odds ratio	
		Lower	Upper		Lower	Upper
Overall	12%	10%	13%			
Ethnicity						
Māori	22%	17%	26%	**2.15*** **	1.50	3.08
Pacific	11%	6.0%	15%	0.88	0.48	1.60
Asian	8.2%	2.9%	13%	0.70	0.32	1.54
European/Other	11%	8.7%	12%	Reference		
Deprivation						
Low	8.3%	6.1%	11%	Reference		
Mid	13%	9.8%	16%	**1.61***	1.09	2.38
High	14%	12%	16%	**1.64***	1.11	2.41

Base = all respondents (excluding neutral responses; n = 3,731)

** p < 0.05, ** ≤ 0.01, *** p < 0.001*

Outcome variable: someone else's gambling has had a serious impact on me (1= yes, 0= no)

5.2.4 Household arguments about gambling

All respondents were asked whether there had been some argument about time or money spent on betting or gambling in their wider family or household. In 2016, 4.7% of people said this had happened in the previous 12 months (equivalent to approximately 178,000 people). A further 5.3% indicated that this had happened in the past, but not in the previous 12 months (see Figure 5-20).

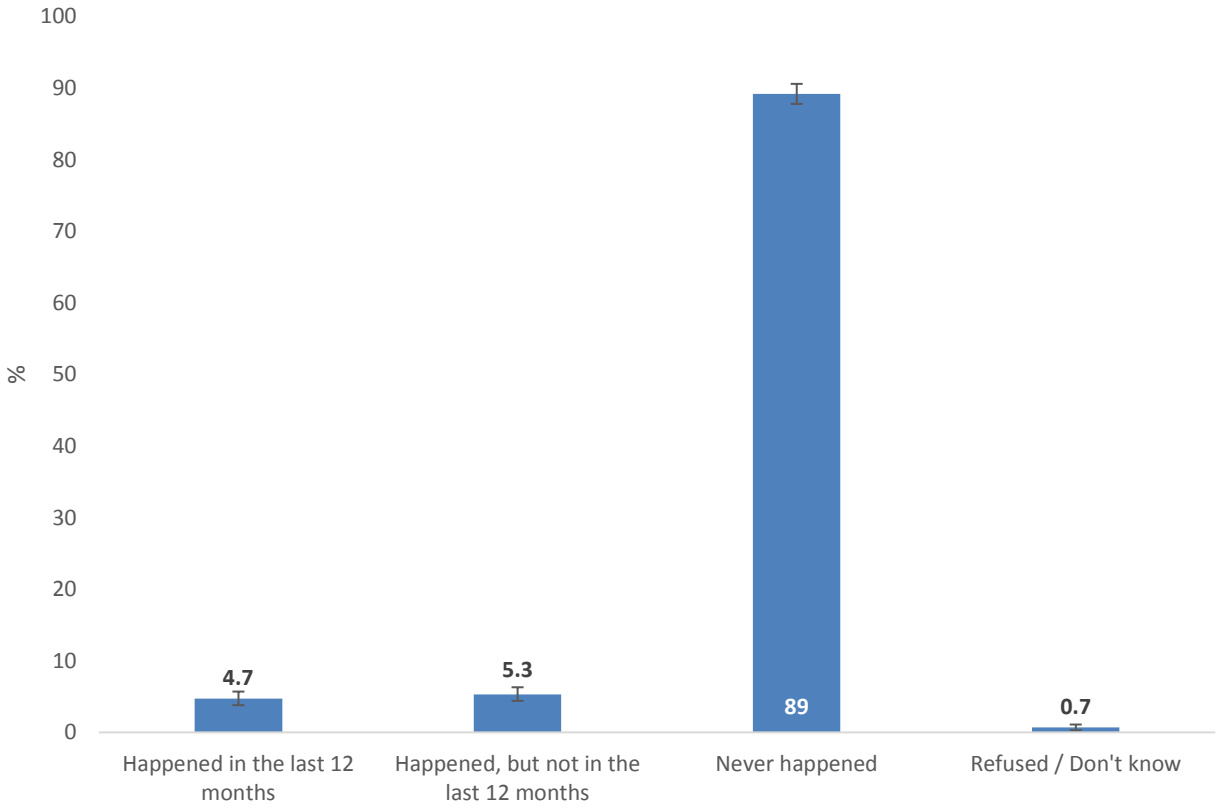


Figure 5-20: Arguments in the wider family or household about time or money spent on gambling, 2016

Base = all respondents (n = 3,854)

Household arguments about gambling: Comparison with previous years

There is a significant decreasing time trend of the proportion of respondents who had ever experienced an argument about time or money spent on betting or gambling in their wider family or household. The decline has been steady, and the proportion dropped significantly from 16% in 2006/07 to 10% in 2016 (see Figure 5-21). There has not been a significant change between 2014 and 2016.

Note that in the 2010, 2014 and 2016 HLS, the questions about household harm were asked in relation to whether the event had *ever* occurred, or had happened in the previous 12 months. However, the 2008 and 2012 HLS only asked about the previous 12 months.

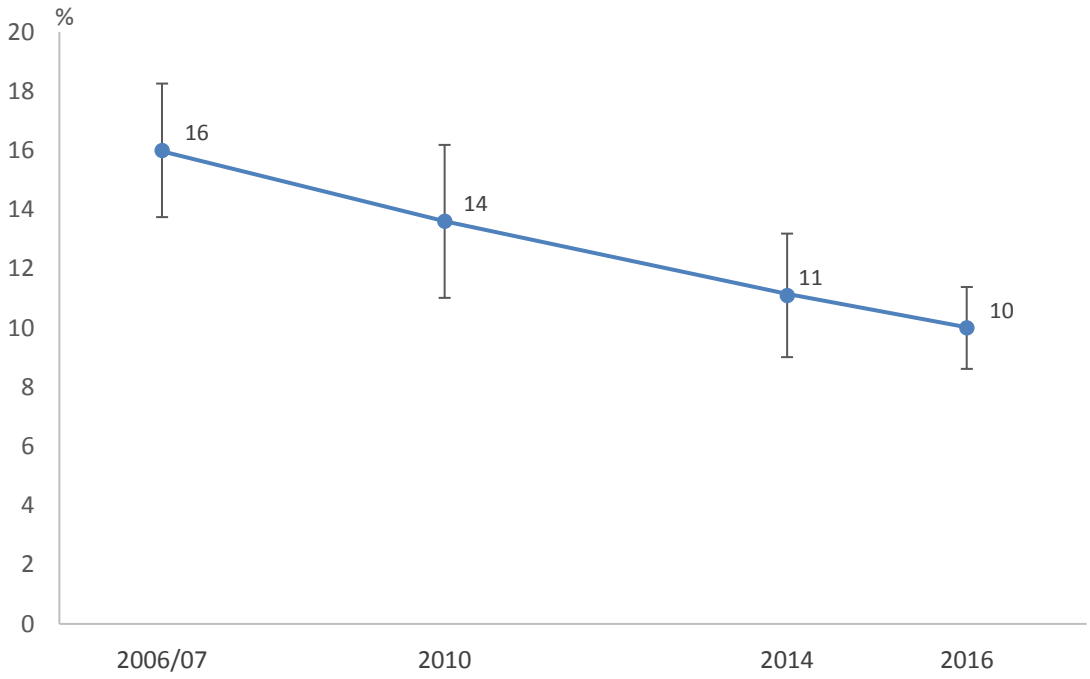


Figure 5-21: Ever had an argument in the wider family or household about time or money spent on gambling, 2006/07 to 2016

Base = all respondents

The proportion of Māori females and males and non-Māori females who have experienced an argument about gambling has been significantly decreasing with time (see Figure 5-22). The rate for non-Māori males does not have a significant time trend.

A greater proportion of Māori had experienced an argument about gambling than non-Māori. Females also experienced arguments about gambling more than males, although the difference between Māori females and males has been decreasing over time.

The gap has been closing between Māori and non-Māori. The linear trend over time of the proportion of Māori who reported an argument has been decreasing at a significantly faster rate than for non-Māori. In 2006/07, the proportion for Māori was 24% higher than the proportion for

non-Māori (37% for Māori and 13% for non-Māori). By 2016, that difference had dropped to 10% (19% for Māori and 9% for non-Māori). See Table 5-16 for more results.

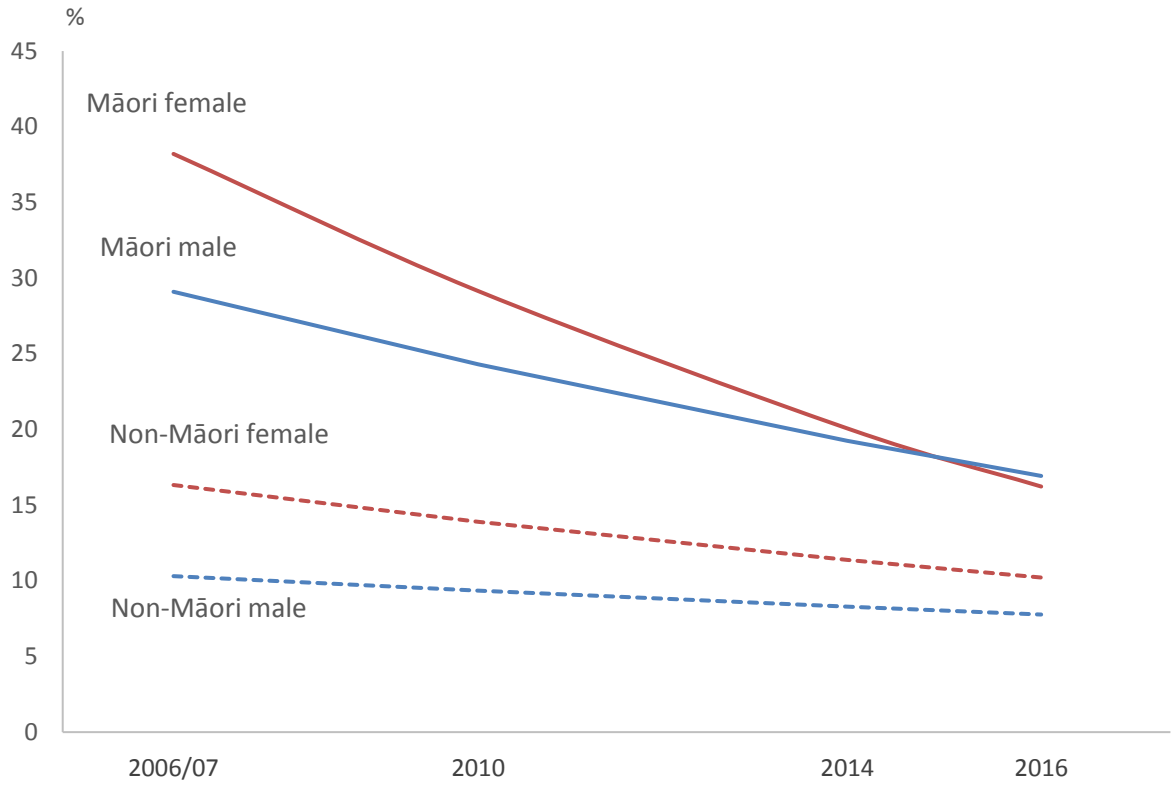


Figure 5-22: Ever had an argument in the wider family or household about time or money spent on gambling, for Māori and non-Māori females and males, 2006/07 to 2016

Base = all respondents

Table 5-16: Ever had an argument in the wider family or household about time or money spent on gambling, 2006/07 to 2016

		Māori			Non-Māori		
Year	**Total**	**Female**	**Male**	**Total**	**Female**	**Male**	**Total**
2006/07	16 (14 - 18)	42 (35 - 50)	32 (22 - 42)	37 (31 - 44)	16 (12 - 20)	10 (7 - 13)	13 (11 - 15)
2010	14 (11 - 16)	24 (17 - 31)	21 (14 - 29)	23 (17 - 28)	15 (10 - 19)	10 (7 - 13)	12 (9 - 15)
2014	11 (9 - 13)	19 (14 - 24)	16 (11 - 22)	18 (14 - 21)	12 (8.7 - 15)	8.6 (5.0 - 12)	10 (8 - 12)
2016	10* (9 - 11)	19* (14 - 24)	20* (14 - 26)	19* (16 - 23)	10* (7.9 - 12)	7.5 (5.5 – 9.6)	8.6* (7.2 - 10)

Base = all respondents

** Significant difference between 2016 and 2006/07*

† Significant difference between 2016 and 2014

There is no significant time trend between 2008 and 2016 in household arguments about gambling within the last year. The proportion of respondents who experienced an argument in 2008 (5.3%) is not significantly different to the proportion in 2016 (4.7%), and there has been no change since 2014 (4.2%, see Figure 5-23).

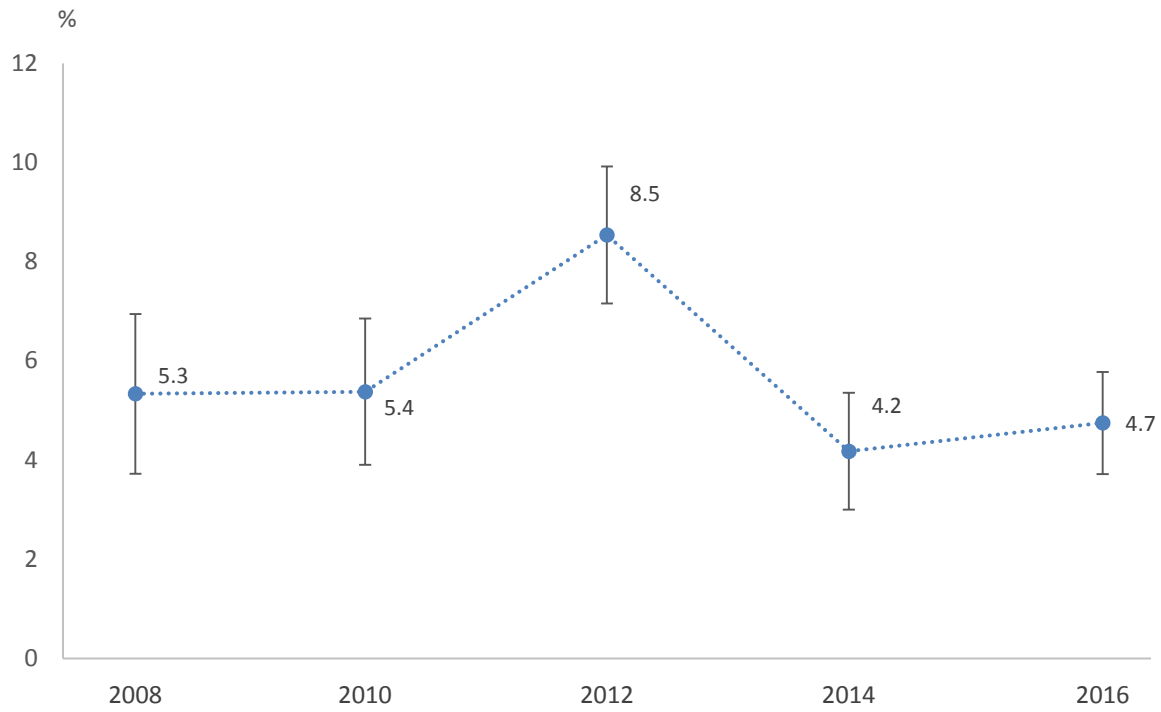


Figure 5-23: Arguments in the wider family or household about time or money spent on gambling, in the last year, 2008 to 2016

Base = all respondents

Profile of those who experienced household arguments about gambling

Those who reported that they had ever experienced household arguments about gambling tended to be: 1) females, 2) Māori or Pacific, 3) moderate-risk or problem gamblers and 4) participate in a high number of gambling activities (≥ 2 activities).

Table 5-17 shows that the predictors of household arguments about time or money spent on betting or gambling were gender, ethnicity, PGSI and number of activities the respondent had participated in. Females (11%) tended to report experiencing arguments about gambling issues more than males (9%). The rate for Māori (20%) and Pacific (13%) was significant higher than the rate among the European/Other ethnicity group (9%).

Moderate-risk and problem gamblers (49%) were much more likely to report that they had experienced an argument in their household about gambling, compared with non-gamblers (7%).

The number of gambling activities respondents had participated in was also associated with a greater probability of household arguments about gambling (Figure 5-24).

Table 5-17: Predictors of experiencing household arguments about gambling

	Proportion	95% CI of value		Odds ratio	95% CI of odds ratio	
		Lower	Upper		Lower	Upper
Overall	10%	8.7%	12%			
Gender						
Male	9%	7%	11%	Reference		
Female	11%	9%	13%	**1.36***	11%	9%
Ethnicity						
Māori	20%	16%	24%	**2.35*****	1.69	3.27
Pacific	13%	8.2%	18%	**1.68***	1.04	2.74
Asian	5%	1.0%	10%	0.61	0.26	1.42
European/Other	9%	7.4%	11%	Reference		
PGSI						
Non-gambler	7%	4.9%	8.7%	Reference		
Non problem gambler	11%	8.8%	12%	0.88	0.58	1.34
Low-risk gambler	10%	4.5%	15%	0.54	0.24	1.20
Moderate-risk/problem gambler	49%	27%	70%	**4.30***	1.28	14.46
Number of activities participated (mean out of possible 12)						
	2.45	2.16	2.73	**1.27*****	1.15	1.40

Base = all respondents (excluding don't know/refused; n = 3,823)

** p < 0.05, ** ≤ 0.01, *** p < 0.001*

Outcome variable: experienced some argument about time or money spent on gambling (1 = yes, 0 = no)

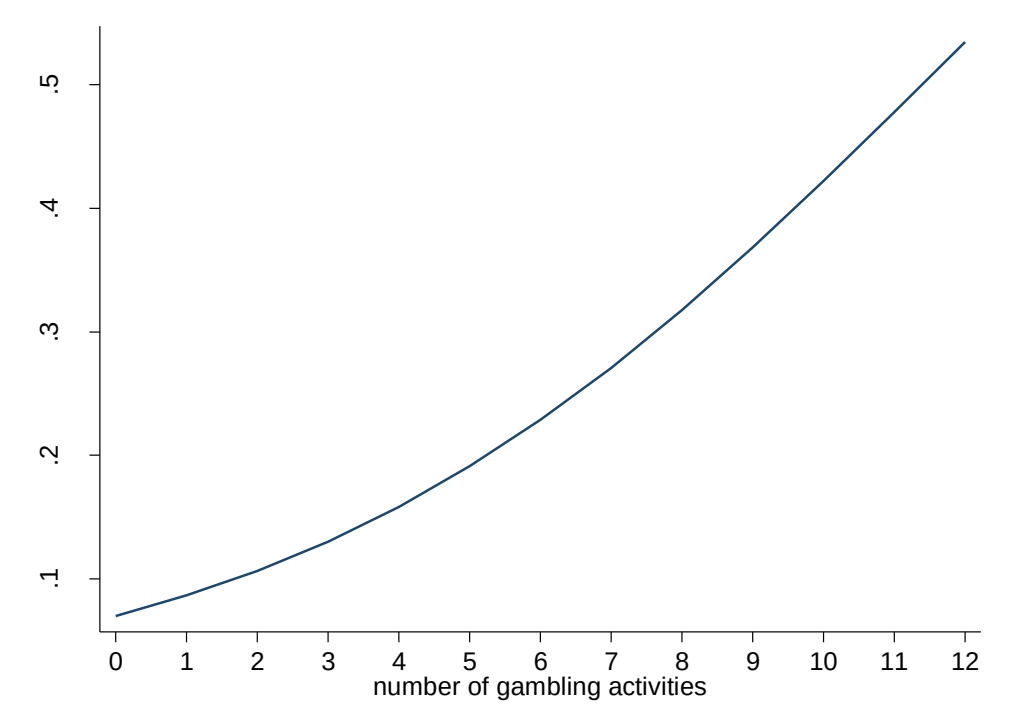


Figure 5-24: Predicted probability of arguing about gambling by total number of gambling activities participated in

5.2.5 Going without because too much money was spent on gambling

Respondents were asked whether someone in their wider family or household had to go without something they needed, or bills weren't paid, because too much was spent on gambling by another person. Around 3.3% of people indicated they had experienced this problem in the previous 12 months (equivalent to an estimated 120,800 people). Another 4.4% said this had happened in the past, but not in the previous 12 months (see Figure 5-25).

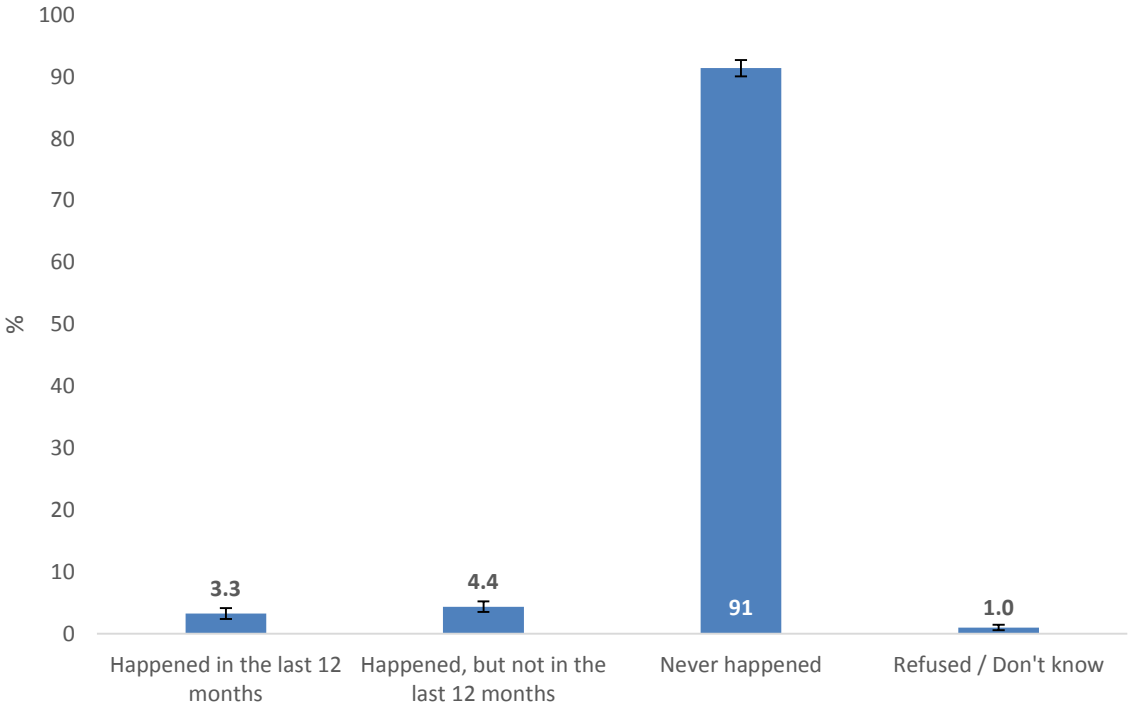


Figure 5-25: Experience going without or an unpaid bill because someone spent too much on gambling, 2016

Base = all respondents (n = 3,854)

Going without because too much time or money was spent on gambling: Changes over time

There is a significant decreasing time trend of the proportion of respondents who had ever experienced 'going without' (Figure 5-26). The trend is similar to the trend for having arguments in the wider family or household. The proportion dropped significantly from 16% in 2006/07 to 8% in 2016. There has not been a significant change between 2014 and 2016.

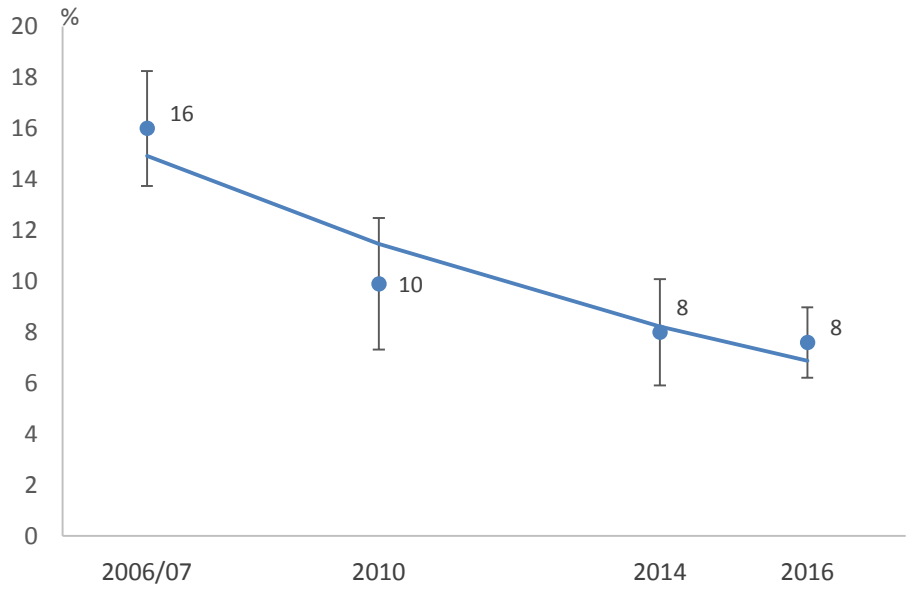


Figure 5-26: Experience going without or an unpaid bill because someone spent too much on gambling, 2006/07 to 2016

Base = all respondents

The proportion of Māori and non-Māori females and males who reported 'going without' has been decreasing significantly over time (Figure 5-27). A greater proportion of Māori experienced 'going without' than non-Māori. Females also experienced 'going without' more than males, although the proportion for Māori males has remained higher than the proportion for non-Māori females. See Table 5-18 for the results for each wave of the survey.

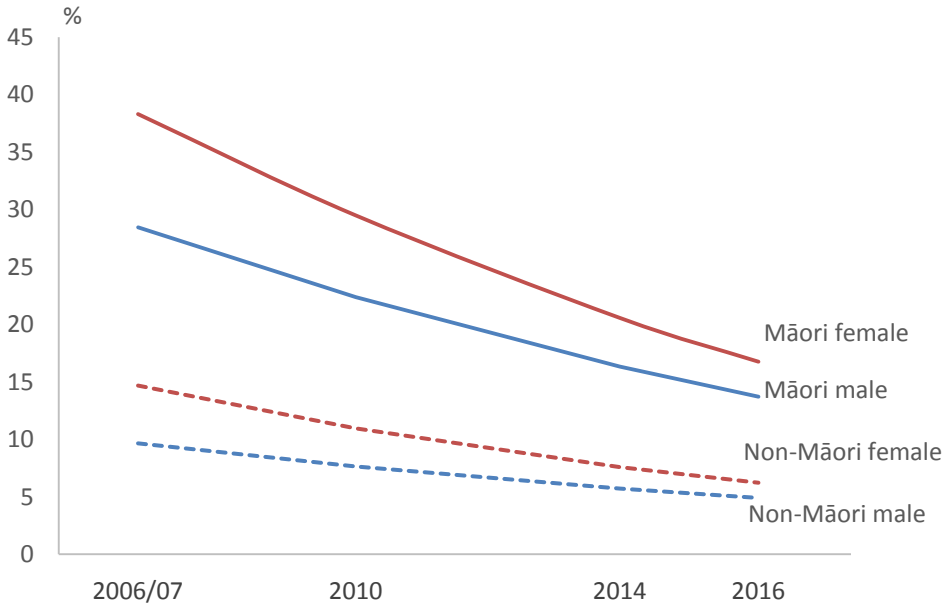


Figure 5-27: Experience going without or an unpaid bill because someone spent too much on gambling, for Māori and non-Māori males and females

Base = all respondents

Table 5-18: Experience going without or an unpaid bill because someone spent too much on gambling

		Māori		Non-Māori	
Year	**Total (%)**	**Female (%)**	**Male (%)**	**Female (%)**	**Male (%)**
2006/07	16 (14 - 18)	42 (35 - 50)	34 (24 - 45)	15 (11 - 18)	11 (7.7 - 14)
2010	9.9 (7.8 - 12)	25 (18 - 32)	14 (8 – 21	11 (7.2 - 15)	5.7 (3.5 - 7.8)
2014	8.0 (6.3 - 9.7)	18 (13 - 22)	16 (10 - 22)	6.9 (5.0 - 8.9)	6.3 (3.1 - 9.6)
2016	7.6* (6.4 - 8.8)	20* (14 - 27)	17* (11 – 22)	6.6* (5.2 - 8.0)	5.2* (3.3 – 7.1)

Base = all respondents

There is no significant linear time trend between 2008 and 2016 for 'going without' due to gambling **within the last yea**r (Figure 5-28). The proportion of respondents who experienced 'going without' in 2008 (3.3%) is not significantly different to the proportion in 2016 (3.2%), and there has been no change since 2014 (4.0%).

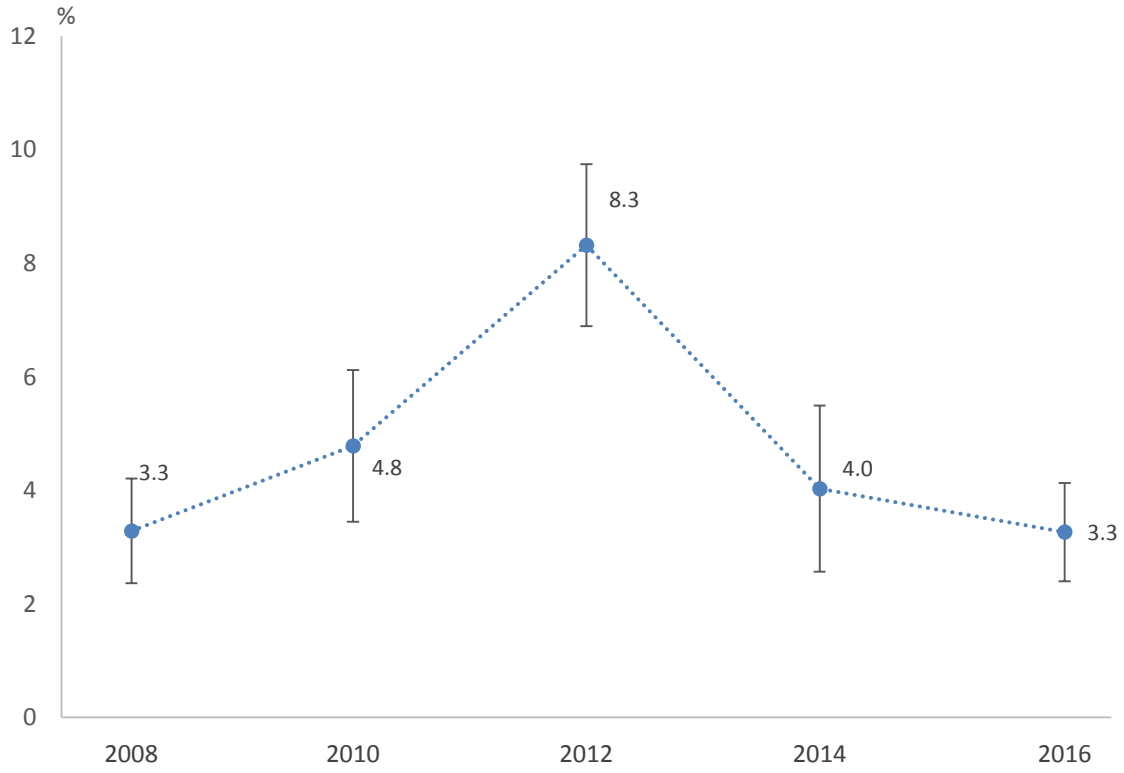


Figure 5-28 Experience going without or an unpaid bill because someone spent too much on gambling, in the last year

Base = all respondents

Profile of those who reported ‘going without’ because of gambling

Ethnicity and number of gambling activities participated in were important predictors of someone in their household ‘going without’ because too much money was spent on gambling. Table 5-19 shows that the rate of ‘going without’ among Māori (19%) was significantly higher than those in the European/Other group of ethnicity (6.4%).

Table 5-19: Predictors of going without because of someone's gambling in the household

	Value	95% CI of value		Odds ratio	95% CI of odds ratio	
		Lower	Upper		Lower	Upper
Overall	7.7%	6.5%	8.9%			
Ethnicity						
Māori	19%	15%	23%	**3.48*** **	2.41	5.01
Pacific	7.6%	3.3%	12%	1.33	0.65	2.73
Asian	3.5%	0%	7.23%	0.63	0.14	2.84
European/Other	6.4%	5.0%	7.8%	Reference		
Number of gambling activities participated in (mean out of possible 12)						
	2.30	1.98	2.62	**1.21*** **	1.09	1.34

*Base = all respondents (excluding don’t know/refused; n = 3,808), *** p < 0.001; outcome variable: someone had to go without something they needed or bills weren’t paid because too much was spent on gambling by another person (1 = yes, 0 = no)*

The number of gambling activities participated in was also associated with a greater probability of ‘going without’. For each additional gambling activity participated in, the likelihood of someone in their household going without increased (Figure 5-29).

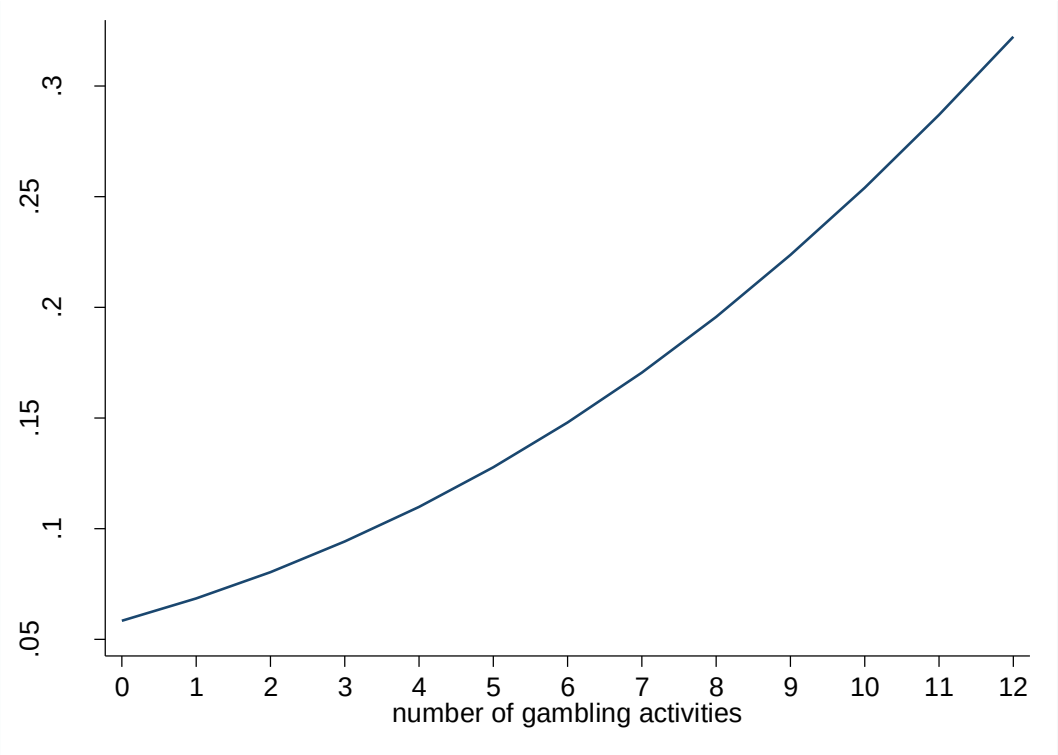


Figure 5-29: Predicted probability of 'going without' due to gambling by number of activities participated in

Gambling activities related to household harm

Overall, 6% of adults reported experiencing at least one household harm (an argument or going without due to gambling) in the past 12 months (*n* = 259). This equates to an estimated 214,000 people.

To provide further contextual information, respondents who had experienced at least one household harm in the past 12 months were also asked about the type of gambling activities these events occurred most with. Figure 5-30 shows that the most commonly mentioned form of gambling activity associated with household harm was gaming machines in pubs/clubs (48%). A further 17% mentioned gaming machines at a casino.

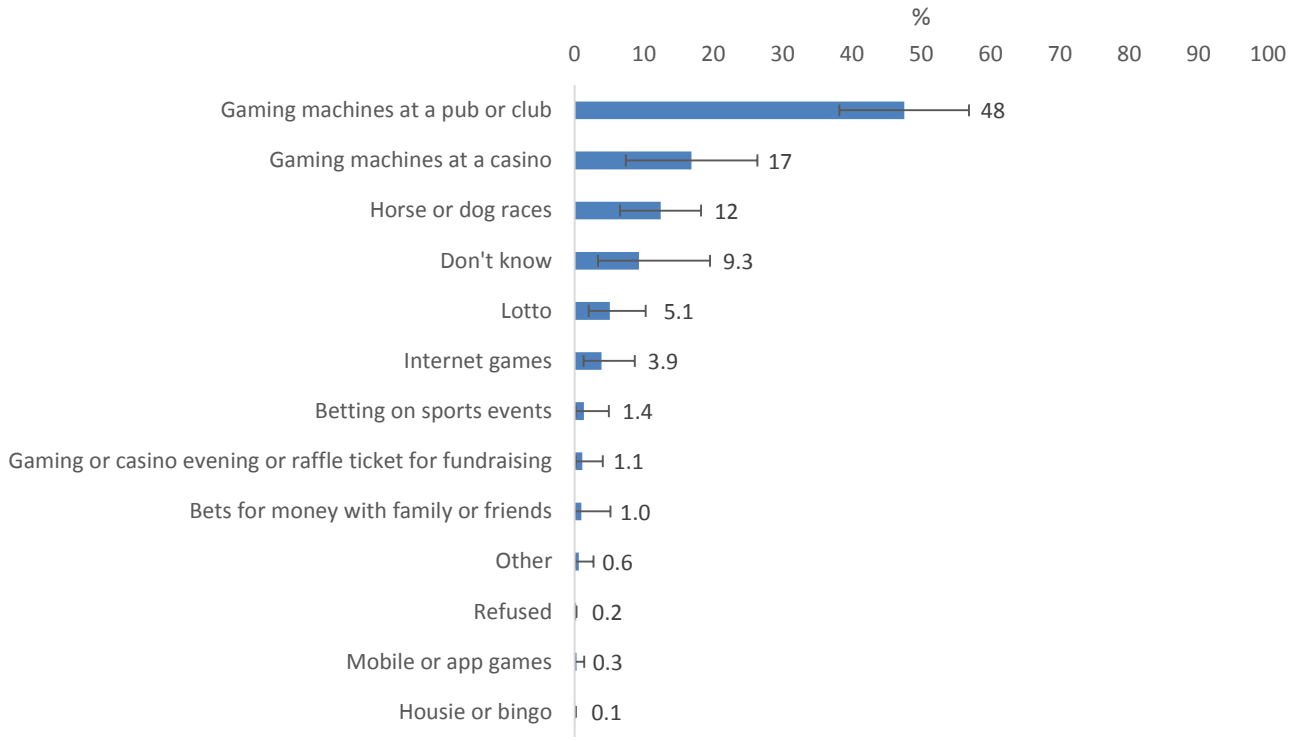


Figure 5-30: Gambling activities most often related to household harm in the past 12 months, 2016
Base = respondents who reported experiencing household harm as a result of gambling in the last 12 months (n = 259)

5.3 GAMBLING HARM RELATED KNOWLEDGE

5.3.1 Potentially harmful gambling activities

Some forms of gambling are associated with harm more than others. Continuous forms in which money can be rapidly reinvested are particularly associated with problem gambling risk (Abbott, 2001). In New Zealand surveys, pokies are the most commonly cited cause of gambling problems (Health Promotion Agency, 2015; Rossen, 2015; Tu & Puthipiroj, 2015). Other continuous forms of gambling include track betting, casino table games and some internet games.

Whether some types of gambling are more harmful than others

In 2016, 78% of respondents said they thought that some forms of gambling were potentially more harmful than others. This is significantly lower than the proportion in 2010 (87%), but not significantly different to 2014 (71%)

Profile of those who think some gambling activities are more harmful than others

Predictors for holding the belief that some types of gambling are more harmful than others were ethnicity and number of gambling activities participated in by the respondent over the past year. Table 5-20 shows that Māori (84%) and people of European/Other ethnicity (84%) were more likely to think that some types of gambling are more likely to "attract people into playing more often, or for more money than they should", compared with Pacific (75%) and Asian (69%) people.

Table 5-20: Predictors for respondents who believed that some types of gambling were more harmful than others

	Value	95% CI of value		Odds ratio	95% CI of odds ratio	
		Lower	Upper		Lower	Upper
Ethnicity						
Māori	84%	81%	87%	0.99	0.74	1.34
Pacific	75%	69%	80%	**0.58****	0.40	0.83
Asian	69%	62%	77%	**0.46*****	0.31	0.68
European/Other	84%	82%	87%	Reference		
Number of activities participated (mean out of possible 12)						
	1.86	1.72	2.00	**1.10***	1.01	1.19

Base = all respondents (excluding neutral responses; n = 3,652)

*** ≤ 0.01, *** p < 0.001*

Outcome variable: Do you think some types of gambling are more likely to attract more people than other (1= yes, 0= no)

The number of gambling activities participated in by the respondent was also associated with a greater probability of holding the belief that some types of gambling are more harmful than others. For each additional gambling activity that was participated in, the likelihood that the respondent would believe that some forms of gambling are more harmful than others increased (Figure 5-33).

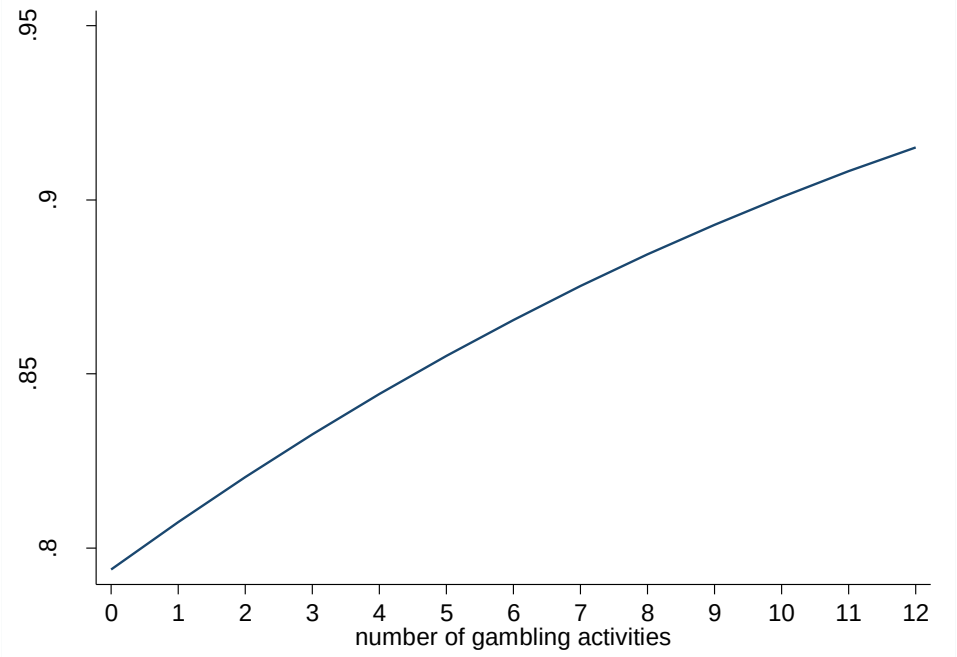


Figure 5-31: Predicted probability of holding the belief that some types of gambling are more harmful than others, by number of gambling activities participated in

Types of gambling activities which are more harmful

Pokies in pubs and clubs were most frequently thought to be a particularly harmful gambling activity. In 2010 and 2014, around 68% of respondents believed that playing pokies at a pub or club is more harmful than other forms of gambling. This dropped to 60% in 2016.

The second and third most harmful activities were Lotto tickets (including Keno, Strike, Powerball and Instant Kiwi/scratch tickets, 57%) and gaming machines at casinos (48%). The opinion that pokies in casinos are harmful has been decreasing in prevalence, from 58% in 2010 to 48% in 2016.Table games in casinos were also being seen as a less harmful activity than they were in 2010 (33% in 2010 and 23% in 2016).

The question was only included in the 2010, 2014 and 2016 surveys. The activities that respondents mentioned in 2016 are largely similar to 2014. For example, there was negligible difference in the view that buying lotto tickets is a harmful activity; 56% of respondents thought it was harmful in 2014 and 57% in 2016. Similarly, around 40% of respondents thought that internet games for money were harmful in 2014 and 2016.

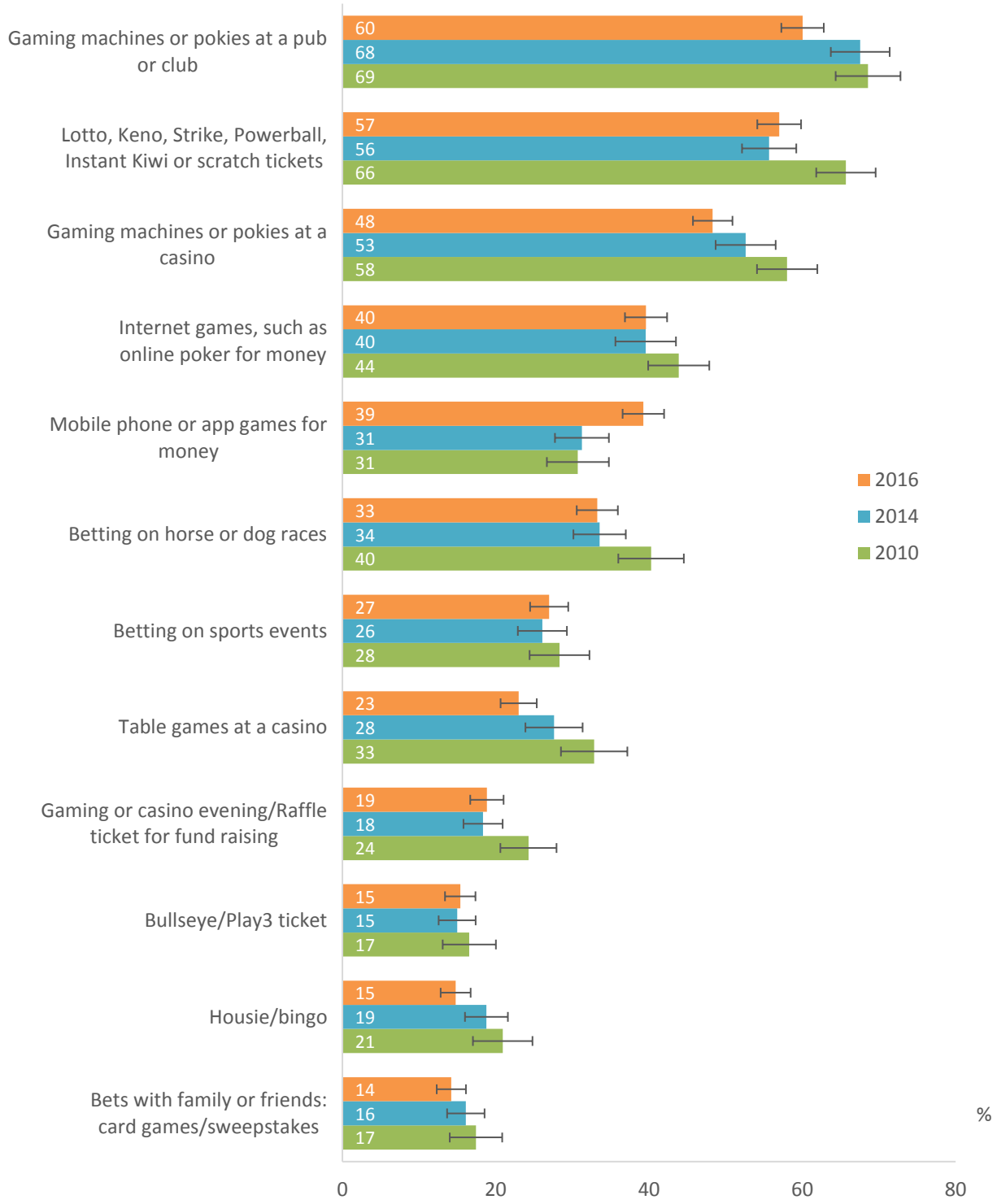


Figure 5-32: Types of gambling that are seen as more harmful than others, 2010, 2014 and 2016

Base = respondents who said that some forms of gambling were potentially more harmful than others

Note: Play 3 tickets were not included as an answer option before 2016 because they were first introduced in 2014

5.3.2 Early signs of harmful gambling

All respondents (*n* = 3,854) were read out a list of five things that can happen when people gamble, and asked whether they thought each was an early sign that a person's gambling was becoming risky. The list included three items that are early signs of risky gambling and two items that were *not* signs of risky gambling. More details are provided in Section 3.8.10.

Recognition of early signs of harmful gambling

Over 9 in 10 respondents accurately recognised the three signs of risky gambling (marked by an asterisk in Table 5-21).

Over 6 in 10 (62%) respondents said that setting aside a certain amount of money to spend on gambling is an early sign of gambling becoming risky. But this can also be a strategy to keep control of the amount spent, and to avoid gambling becoming risky, particularly when playing continuous gambling activities. Finally, 3 in 10 (31%) respondents mistakenly thought that going to a casino with their friends for a birthday celebration is an early sign of gambling becoming risky.

Table 5-21: Recognition of the early signs of gambling harm, 2016

Statement	%	95% CI
They go back to the pub to try win back last night's losses*	95	94 - 96
Their gambling sometimes causes them stress*	94	93 - 95
They don't want anyone else to know they are gambling*	92	91 - 94
They set aside money for gambling	62	59 - 64
They go to a casino with friends for a birthday celebration	31	29 - 33

Base = all respondents (n = 3,854)

**sign of risky gambling*

Profile of those who identified the early signs of harmful gambling

To evaluate how well respondents could identify the early signs of risky gambling, they were each given a score out of five. They scored one point for each of the three early signs of risky gambling that they identified. For the two items that were not early signs of risky gambling, respondents were given one point if they identified that they were *not* early signs of risky gambling. More details of this scale are addressed in Section 3.8.10. The mean score out of five for all participants was 3.7.

A linear regression model was fitted to find the predictors for those who can correctly identify the early signs of harmful gambling. Important predictors are presented in

Table 5-22.

Table 5-22: Predictors for accurate identification of early signs of harmful gambling

	Mean score	95% CI of mean		Coefficient	95% CI of coefficient	
		Lower	Upper		Lower	Upper
Overall	3.7	3.7	3.8			
Gender						
Male	3.8	3.7	3.8	Reference		
Female	3.7	3.6	3.7	**-0.10***	-0.19	-0.01
Ethnicity						
Māori	3.7	3.6	3.8	-0.08	-0.19	0.02
Pacific	3.3	3.1	3.4	**-0.47*****	-0.62	-0.32
Asian	3.2	3.0	3.4	**-0.62*****	-0.80	-0.45
European/Other	3.9	3.8	3.9	Reference		
Education						
None	3.3	3.2	3.5	Reference		
Secondary school	3.8	3.7	3.9	**0.47*****	0.31	0.63
Trade/Certificate	3.7	3.6	3.8	**0.25*****	0.10	0.40
Undergraduate	3.8	3.7	3.9	**0.48*****	0.31	0.65
Postgraduate	3.9	3.8	4.0	**0.58*****	0.40	0.76
Number of activities participated in						
	-	-	-	**0.10*****	0.08	0.13

Base = all respondents (n = 3,854)

** p < 0.05, *** p < 0.001*

Outcome variable: "please can you identify any of the following is an early sign of risky gambling eg, gambling that causes stress (score 0 to 5)

When other significant factors were controlled for, females were slightly less likely to correctly identify early signs of gambling harm compared with male respondents.

Pacific and Asian groups were less likely to correctly identify early signs of gambling harm compared with both Māori and the European/Other ethnicity groups.

Knowledge of the early signs of gambling harm tended to increase as the education level increased. Respondents who had no formal qualification were less likely to identify the early signs correctly compared with all other education groups.

The number of gambling activities participated in was positively associated with the knowledge of early signs of gambling harm (Figure 5-34). The more gambling activities that respondents had participated in, the better they could identify the early signs of harmful gambling.

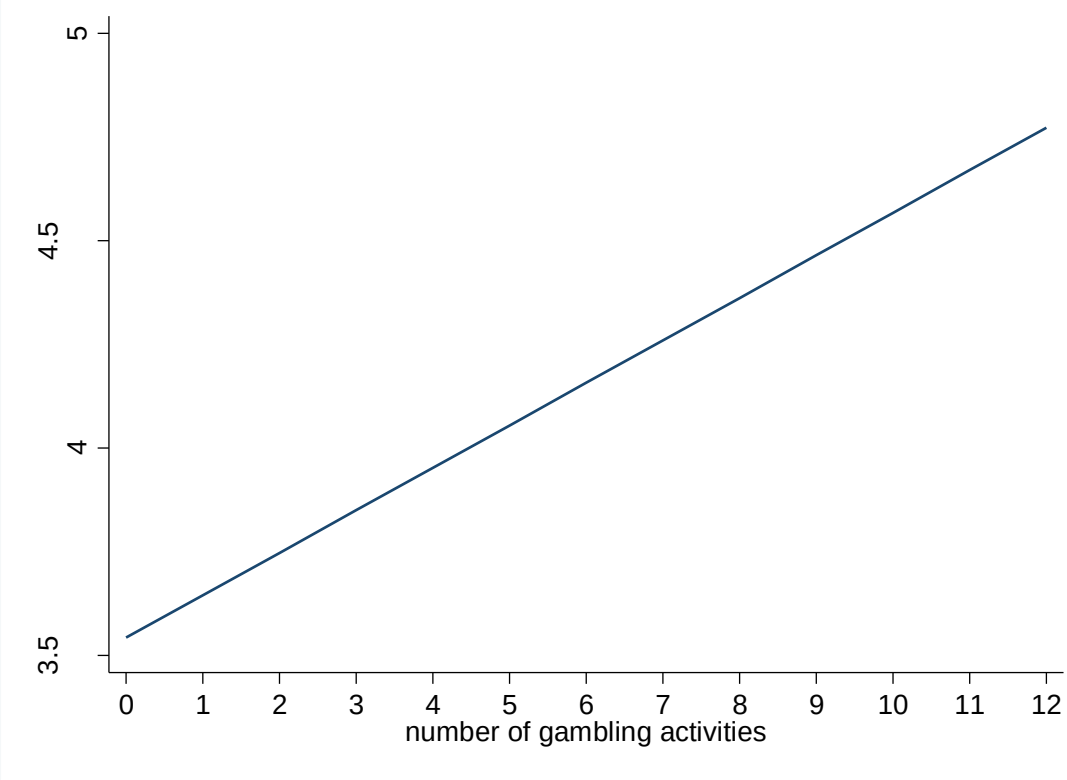


Figure 5-33: Linear prediction of early signs gambling harm score by number of gambling activities

5.3.3 Knowledge of how to get help for a friend or family member who gambles too much

All respondents (*n* = 3,854) were asked 'Do you know what you could do to help a friend or family member who was gambling too much?' Over half (56%) of respondents reported that they knew what they could do to help.

Profile of those who know how to help someone who gambles too much

A logistic regression model was fitted to find predictors for knowing how to get help for a friend or family member who gambled too much. The results revealed that number of gambling activities participated in was the only factor significantly associated with this outcome. For each additional gambling activity participated in, the odds of knowing where to find help increased (OR=1.25; 95% CI = 1.16, 1.34) (Figure 5-35).

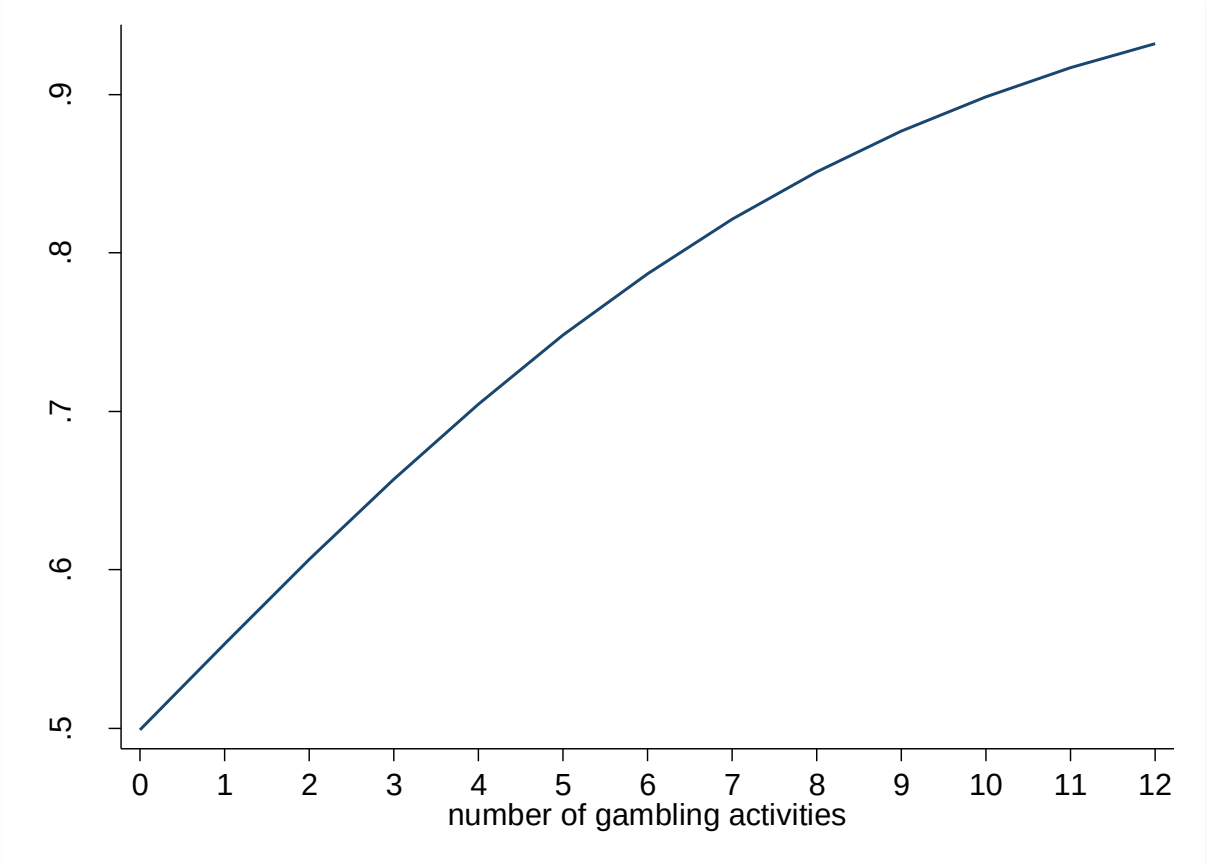


Figure 5-34: Predicted probability of knowing how to help friend or family member who gambled too much, by number of gambling activities participated in

Changes over time

There is a significant decreasing time trend of the proportion of respondents who reported knowing how to help a friend or family members who are gambling too much (Figure 5-35). The proportion dropped significantly from 71% in 2006/07 to 56% in 2016. There has not been a significant change between 2014 and 2016.

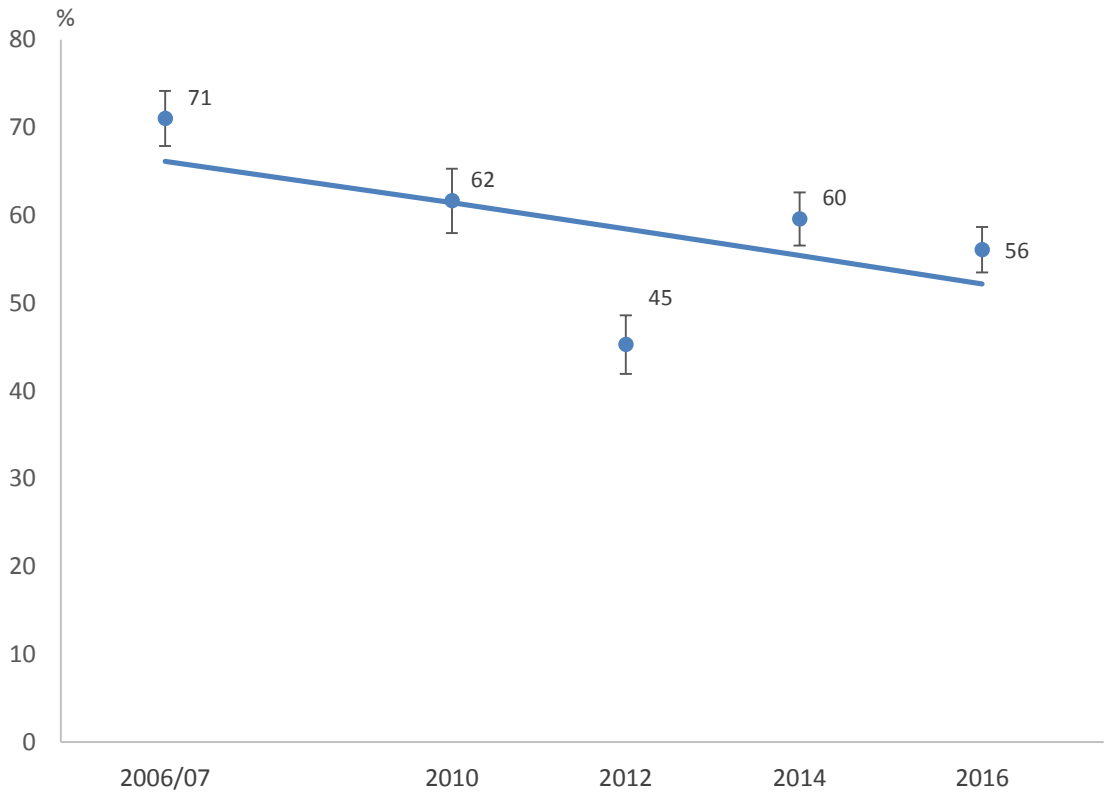


Figure 5-35: Knowledge of how to help a friend or family member who was gambling too much, 2006/07 to 2016

Base = all respondents

Strategies/actions to help someone who is gambling too much

Respondents who reported that they knew what they could to do to help a friend or family member who was gambling too much (*n* = 2,149), were then asked what that strategy or action was. Respondents were not probed, and could give multiple responses.

Table 5-23 presents the list of actions and strategies identified by respondents. Over half (55%) indicated that they would talk to the person who is gambling too much, and make them aware of the dangers of gambling too much. One third (34%) indicated they would tell them to get help or seek professional advice.

Table 5-23: Actions and strategies identified to help someone who gambles too much (multiple responses allowed), 2016

Response	%	95% CI
Talk to them / make them aware of dangers	55	52 - 58
Tell them to get help / help them seek professional help	34	31 - 37
Be supportive / listen to them	26	23 - 29
Ring / direct them to a helpline	25	22 - 28
Refer them to Gamblers Anonymous	11	9.6 - 13
Search online / direct them to a website	10	8.2 - 12
Involve family / friends	8.3	6.6 - 10
Stop / discourage gambling	8.0	6.2 - 9.8
Help them with money management	7.0	5.4 - 8.6
Cut off / control their money for them	6.7	5 - 8.4
Get medical help	5.3	3.9 - 6.6
Offer alternative activities	5.1	3.7 - 6.6
Don't bail them out / don't lend money	4.3	3.1 - 5.5
Exercise tough love	4.1	2.9 - 5.3
Text / direct them to a text helpline service	3.2	2.2 - 4.3
Other	3.0	1.8 - 4.2
Give them brochures / show ads	2.8	1.7 - 3.8
Pray for them / invite to church	2.4	1.4 - 3.3
Encourage them to talk to bar staff	1.9	1 - 2.8
Refer them to a community leader	1.8	1.1 - 2.5

Base = respondents who knew of strategies or actions to help someone who gambles too much (n = 2,149)

5.3.4 Knowledge of support services for gambling harm

To assess knowledge of support services for gambling harm, all respondents (*n*=3,854) were presented with a list of the types of services (see Table 5-24) to help people who gamble too much, and asked which of the services they had heard of before. Multiple responses were permitted.

A total of 84% of respondents had heard of at least one service. Two-thirds (65%) had heard of an 0800 telephone helpline, one-third (35%) had heard of Gamblers Anonymous, and one-third (34%) had heard of other support groups. Comparatively fewer people had heard of internet self-help websites (16%). Sixteen percent of respondents had not heard of any support service.

Table 5-24: Gambling help services recognised (multiple responses allowed), 2016

Response	%	95% CI
0800 telephone helpline	65	63 - 67
Gamblers Anonymous	35	33 - 37
Support groups	34	31 - 36
Free counselling / treatment service	31	28 - 33
Salvation army	28	25 - 30
Help from a GP or health professional	21	19 - 23
Citizens Advice Bureau	18	16 - 20
None	16	14 - 18
Internet site	16	14 - 17
Paid / private treatment	15	13 - 17
Māori health service	13	11 - 14
Church or community leader	13	11 - 14
Text a helpline service	12	11 - 14
Pacific health service	8.4	7.2 - 9.5
Asian health service	5.0	4.1 - 6
Don't know	1.2	0.8 - 1.7
Other	0.3	0.1 - 0.5
Refused	0.1	0 - 0.6

Base = all respondents (n = 3,854)

Table 5-25: shows the proportion of respondents in each PGSI group who recognised each of the gambling help services asked about.

Table 5-25: Services recognised by PGSI group (multiple responses allowed), 2016

Response	Non-gambler %	Non-problem gambler %	Low-risk gambler %	Moderate risk/Problem gambler %
0800 telephone helpline	51 (46-55)	71 (68-74)	70 (59-81)	81 (67-96)
Gamblers Anonymous	23 (19-26)	40 (37-43)	42 (31-53)	58 (38-79)
Free counselling / treatment service	24 (21-28)	33 (30-35)	34 (24-44)	45 (23-68)
Support groups	24 (20-28)	38 (35-41)	31 (20-41)	43 (21-66)
Salvation army	19 (16-23)	31 (29-34)	22 (14-31)	38 (15-65)
Internet site	12 (9.3-15)	17 (14-19)	14 (6.9-25)	32 (10-63)
Help from a GP or health professional	15 (12-18)	24 (21-26)	26 (16-35)	31 (9-63)
Paid / private treatment	9.2 (6.9-11)	17 (15-19)	17 (9.4-26.9)	22 (2.9-60)
Citizens Advice Bureau	12 (9.2-14)	21 (18-23)	18 (10.3-27.2)	22 (2.6-60)
Text a helpline service	9.6 (7.2-12)	13 (11-15)	15 (8.7-23)	13 (5.4-26)
Māori health service	9.7 (7.4-12)	14 (12-16)	12 (6.7-20)	12 (5.2-23)
Church or community leader	12 (8-15)	14 (11.7-16)	7 (2.9-15)	12 (3.5-28)
None	27 (22.4-31)	12 (9-14)	15.1 (6.6-28)	11 (1.7-33)
Pacific health service	7.1 (5.1-9.2)	9 (7.6-10)	8 (3.1-16.4)	3.8 (1.1-9.2)
Asian health service	5.1 (3.3-7)	5.1 (4-6.2)	4.1 (0.9-11)	1 (0.2-2.7)
Don't know	2.7 (1.4-4)	0.6 (0.3-1.1)	0.4 (0-2.1)	0
Other	0.3 (0.1-0.5)	0.3 (0.1-0.7)	0.6 (0-3.2)	0
Refused	0.4 (0-1.9)	0	0	0

Base = all respondents (n = 3,854)

Knowledge of support services for gambling harm: Changes over time

Awareness of gambling help services has a significant decreasing time trend between 2006/07 and 2016, but the decrease is only slight (Figure 5-36). In 2006/07, the proportion of respondents who were aware of any of the listed services (85%) was at its highest. It remained fairly constant between 2006/07 and 2010 and dropped to its lowest value in 2012 (76%). It rose again in 2016 to 83%, which is significantly higher than 2014 (78%) but not significantly different to 2006/07.

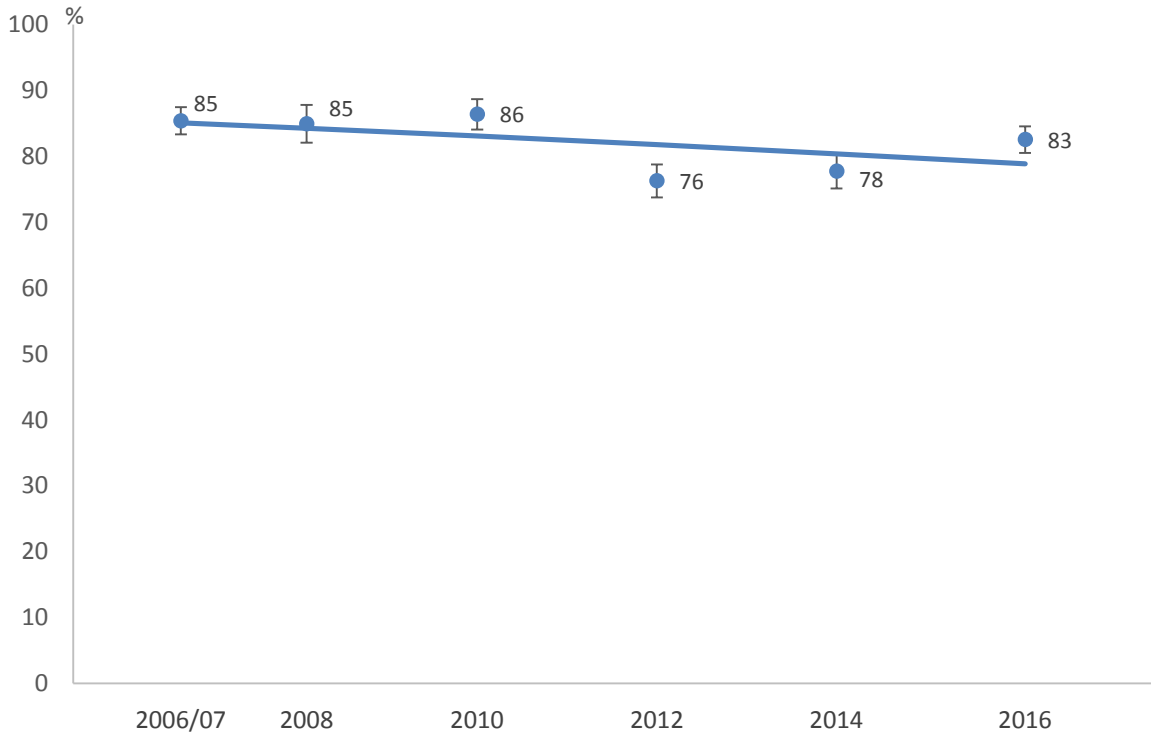


Figure 5-36: Heard of at least one type of service to help with people who gamble too much, 2006/07 to 2016

Base = all respondents

5.4 VIEWS ON GAMBLING

5.4.1 'Socially undesirability' of gambling activities

All respondents were shown a list of gambling activities and asked whether they thought any of those activities were 'socially undesirable'. If the respondent was unsure of the meaning of 'socially undesirable', the interviewer would elaborate with 'you wouldn't want this activity in your community'. Just over half (55%) of respondents said some forms of gambling were socially undesirable.

This belief was more common among those who had participated in fewer gambling activities in the past year, compared with those who had participated in several.

For each additional gambling activity participated in, the likelihood of thinking that any of the activities were socially undesirable decreased (OR=0.92; 95%CI = 0.87, 0.97) (Figure 5-38).

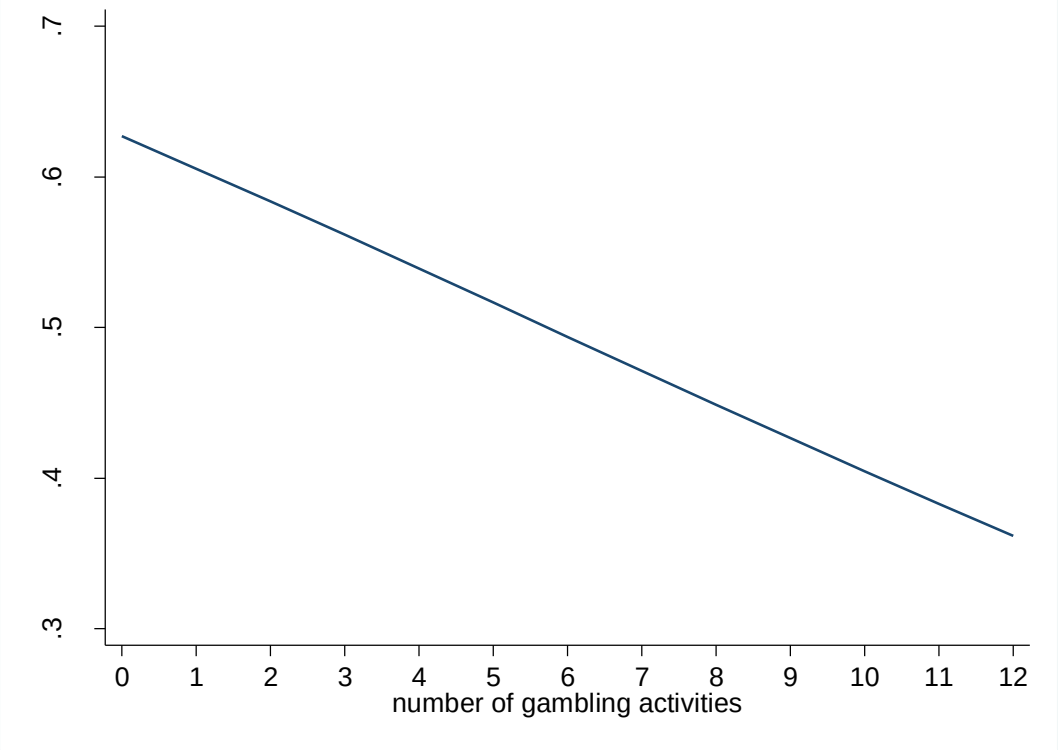


Figure 5-37: Predictive probability of holding the belief that some gambling activities are 'socially undesirable' by number of gambling activities participated in

Changes over time

In 2016, 55% of respondents said that some forms of gambling were socially undesirable. There is an overall decreasing time trend in the belief that some forms of gambling were socially undesirable, and this is driven by a high proportion in 2010 (64%, see Figure 5-38). The proportion in 2016 is significantly lower than 2010, but not significantly different to 2014 (53%).

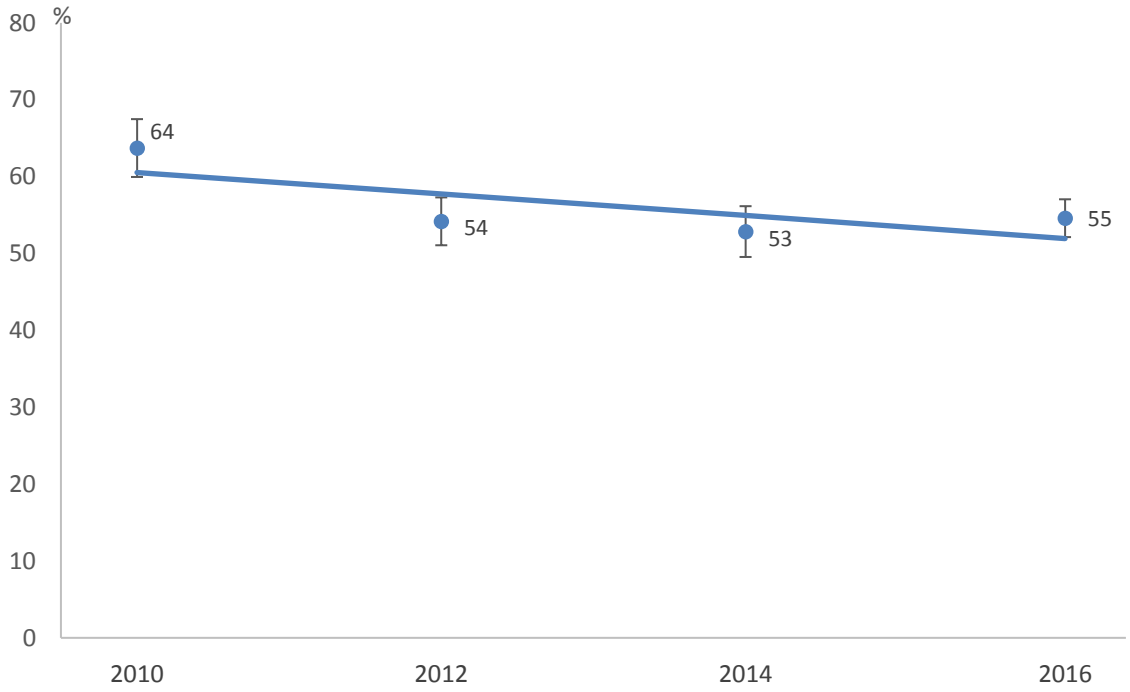


Figure 5-38: Belief that some forms of gambling are socially undesirable, over time

Base = all respondents

Types of gambling activity considered socially undesirable

Of those who thought some forms of gambling were socially undesirable, 59% considered gaming machines at a pub or club be socially undesirable. The next most socially undesirable activities were gaming machines at a casino (50%) or mobile phone games for money (31%). Note that this is the proportion of respondents who thought at least one activity was socially undesirable.

Responses regarding which gambling activities respondents viewed as socially undesirable were collected in 2010, 2012, 2014 and 2016. The 2016 responses are largely similar to 2014 (see Figure 5-39). For example, there has been virtually no change in the view that pokies in casinos is a socially undesirable activity since 2012; the prevalence has been around the 2016 value of 50%. However, there was a substantial increase between 2010 (when the proportion was 34%) and 2012.

There is a steady trend over all four years of decreasing prevalence of the opinion that pokies in pubs or clubs is a socially undesirable activity. The prevalence has dropped from 74% in 2010 to 59% in 2016.

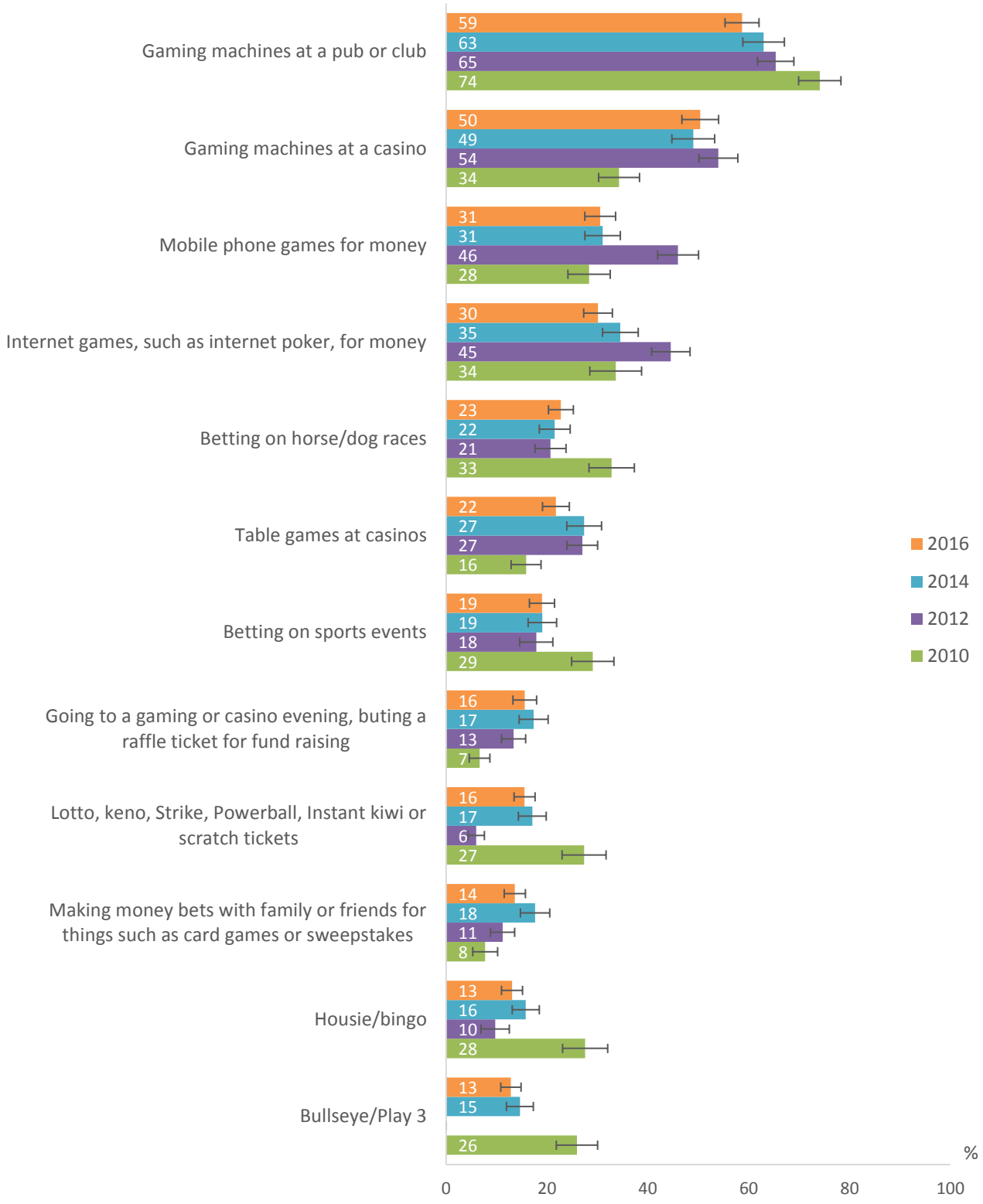


Figure 5-39: Belief that some forms of gambling are socially undesirable, over time

Base = respondents who thought at least one of the activities were socially undesirable

Note: "Bullseye tickets" was not listed as an answer option on the showcard in 2012. Play 3 tickets were launched in 2014 so were not included in the answer options before 2016.

5.4.2 Whether fundraising from gambling does more harm than good

All participants (*n* = 3,854) were asked 'Do you think raising money through gambling does more good than harm, or more harm than good, in the community?' Five response options ranged from 'does a lot more good than harm' to 'does a lot more harm than good' (see Figure 5-41). Almost half (46%) of respondents thought that raising money through gambling did *more harm* than good in the community. One-quarter of respondents (24%) thought that gambling in the community did equal good and harm, while 24% thought it did *more good* than harm.

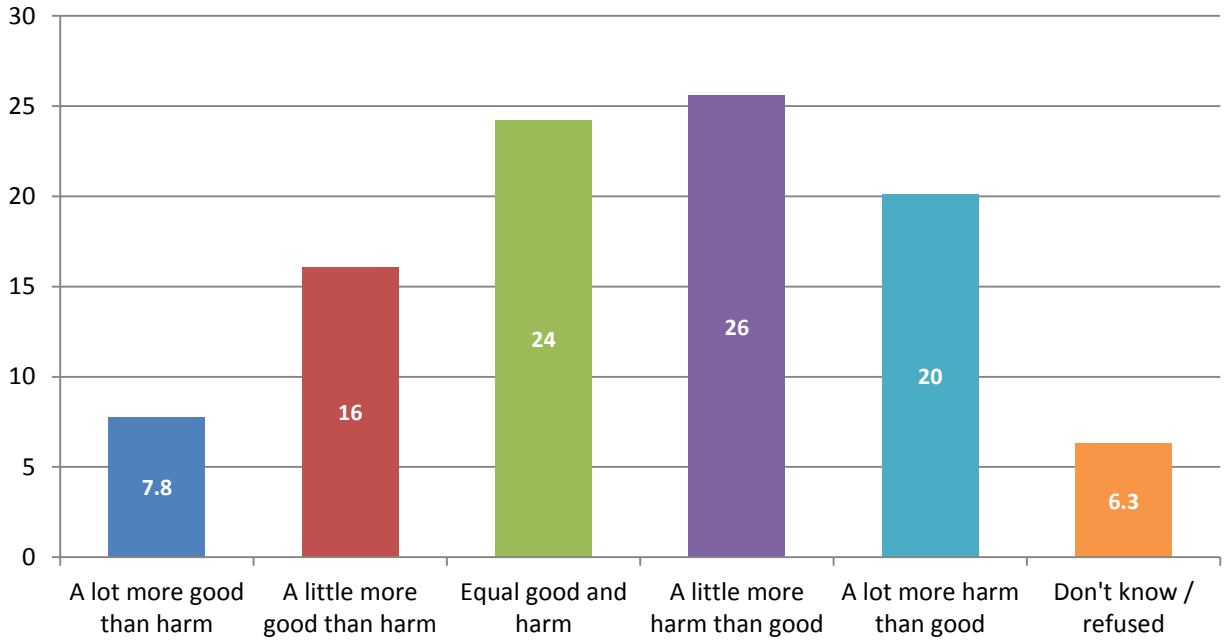


Figure 5-40: Views about effects on a community from raising funds through gambling, 2016

Base = all respondents (n = 3,854)

Whether fundraising from gambling does more harm than good: Changes over time

The proportion of respondents who believe that raising money through gambling does more harm than good in the community is decreasing over time, as can be seen in Figure 5-41. However, the proportion of respondents who believe it does more good than harm is also decreasing with time, at the same rate. This is because of an increasing time trend of neutral responses (*does equal good and harm* or *don't know*), from 20% in 2006/07 to 30% in 2016. This indicates there is decreasing awareness of the role of raising money through gambling in the community.

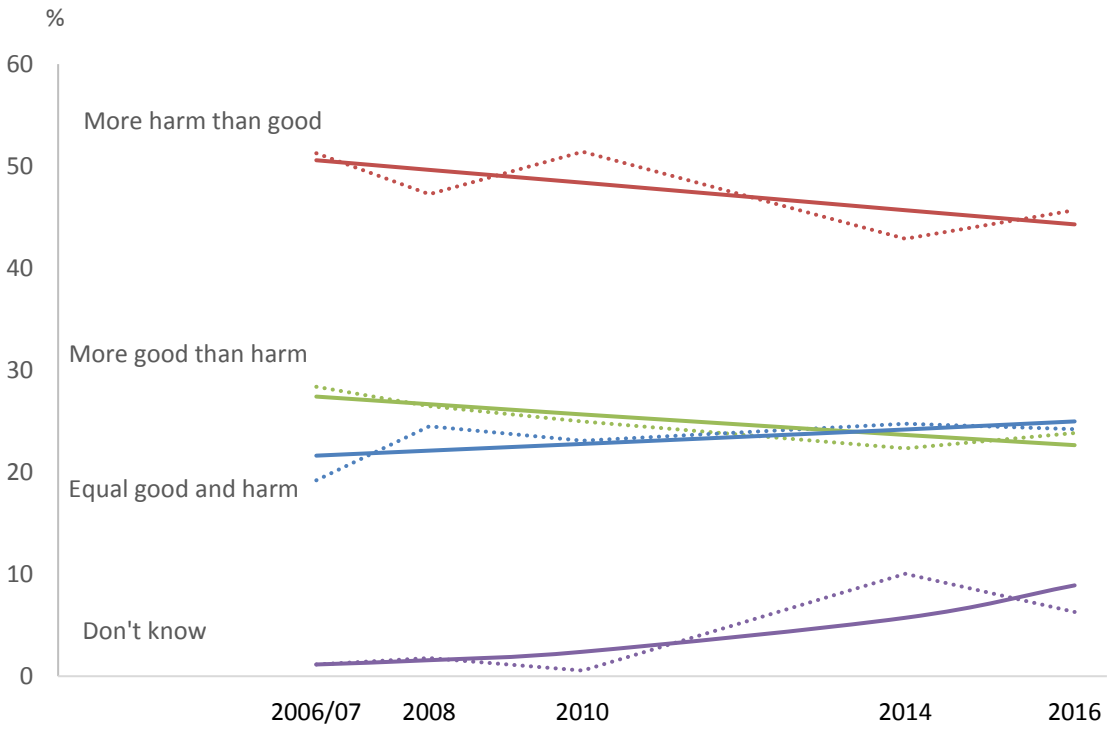


Figure 5-41: Views about effects on a community from raising funds through gambling, 2006/07 to 2016

Base = all respondents

Table 5-26 shows the proportions over time and significant differences between 2016/2014 and 2016/2006.

Table 5-26: Views about effects on a community from raising funds through gambling, 2006/07 to 2016

Year	More Harm than good %	Equal good and harm %	More good than harm %	Don't know %
2006/07	51 (47 - 55)	19 (17 - 22)	28 (25 - 31)	1.2 (0.6 - 2.0)
2008	47 (43 - 51)	25 (21 - 28)	27 (23 - 30)	1.8 (0.9 - 3.2)
2010	51 (48 - 55)	23 (20 - 26)	25 (22 - 28)	0.6 (0.3 - 1.0)
2014	43 (40 - 46)	25 (22 - 28)	22 (20 - 25)	10.0 (8.0 - 12.1)
2016	46* (43 - 48)	24* (22 - 26)	24* (22 - 26)	6.3*† (5.1 - 7.4)

Base = all respondents

** Significant difference between 2016 and 2006/07*

† Significant difference between 2016 and 2014

Profile of those who believe that gambling does more harm than good

Views on fundraising from gambling differ by age, education level, ethnicity and deprivation index (as seen in Table 5-27). Respondents aged between 18 and 24 years (79%) and those aged between 25 and 44-years-old (72%) were more likely to agree that raising money through gambling is harmful than those aged 45 and over (58%).

A significantly lower proportion of respondents who had no school qualification (54%) thought that raising money through gambling does more harm than good, compared with those who had higher education levels (secondary: 68%; Trade/Certificate/Other: 62% Undergraduate: 73%).

The rates of agreement with the statement "raising money through gambling does more harm than good" among Māori (71%), Pacific (84%) and Asian (80%) people were significantly higher compared with European/Other (60%). Respondents in areas of medium deprivation were less likely to believe that raising money through gambling does more harm than good than respondents in low deprivation areas (62% versus 68%).

Table 5-27: Predictors for respondents who agreed that raising money through gambling does more harm than good

	Proportion	95% CI of Proportion		Odds ratio	95% CI of Odds ratio	
		Lower	Upper		Lower	Upper
Overall	66%	63%	69%			
Age						
15-17 years	71%	56%	86%	1.56	0.72	3.42
18-24 years	79%	72%	86%	**2.37*** **	1.45	3.87
25-44 years	72%	67%	76%	**1.58*** **	1.20	2.07
45+ years	58%	54%	61%	Reference		
Education						
None	54%	47%	61%	Reference		
Secondary	68%	63%	73%	**1.48***	1.03	2.14
Trade/Certificate/Other	62%	57%	68%	**1.52***	1.05	2.19
Undergraduate	73%	68%	78%	**1.93****	1.26	2.94
Postgraduate	65%	57%	73%	1.51	0.93	2.45
Ethnicity						
Māori	71%	66%	75%	**1.58****	1.17	2.13
Pacific	84%	78%	89%	**3.17*** **	1.96	5.13
Asian	80%	73%	87%	**2.23*** **	1.36	3.64
European/Other	60%	57%	64%	Reference		
Deprivation						
Low	68%	63%	73%	Reference		
Mid	62%	57%	67%	**0.72***	0.52	0.99
High	69%	65%	74%	0.90	0.64	1.29

*Base: all respondents (excluding neutral responses; n = 2,708); * p < 0.05, ** p < 0.01, *** p < 0.001; Outcome variable: raising money through gambling does more harm than good (1= more harm, 0= more good)*

5.4.3 Concern with the level of gambling in the community

All respondents (*n*=3,854) were asked “How concerned are you about the level of gambling in your community?” Half of respondents (50%) were ‘not at all concerned’ with the level of gambling in their community, while 6% were ‘very concerned’ (see Figure 5-43).

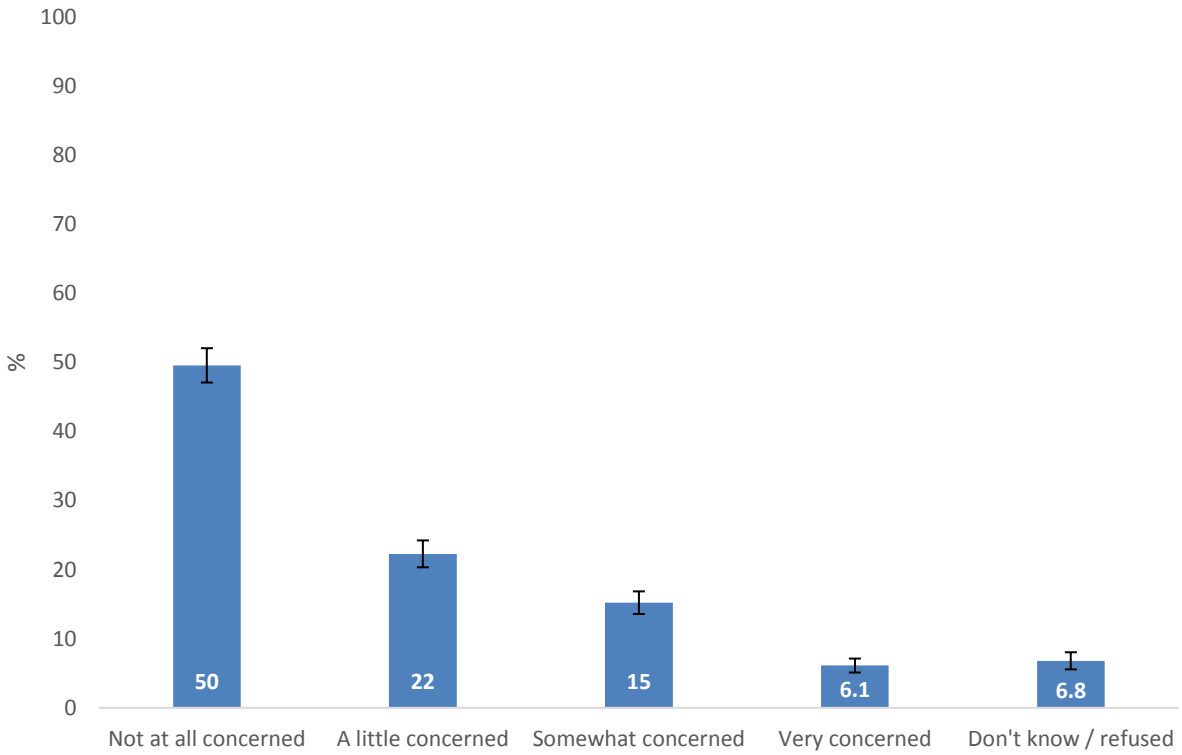


Figure 5-42: Level of concern about gambling in the community, 2016

Base = all respondents (n = 3,854)

Changes over time

In 2016, a significantly higher proportion of respondents (50%) were not at all concerned with the level of gambling in their community than in 2012 (40%) or 2014 (38%) (see Figure 5-43). On the other hand, there was a significantly lower proportion of respondents who were somewhat concerned (15% in 2016 and 21% in 2014) and very concerned (6% in 2016 and 11% in 2014). There were no significant changes in the proportion of those who were a little concerned.

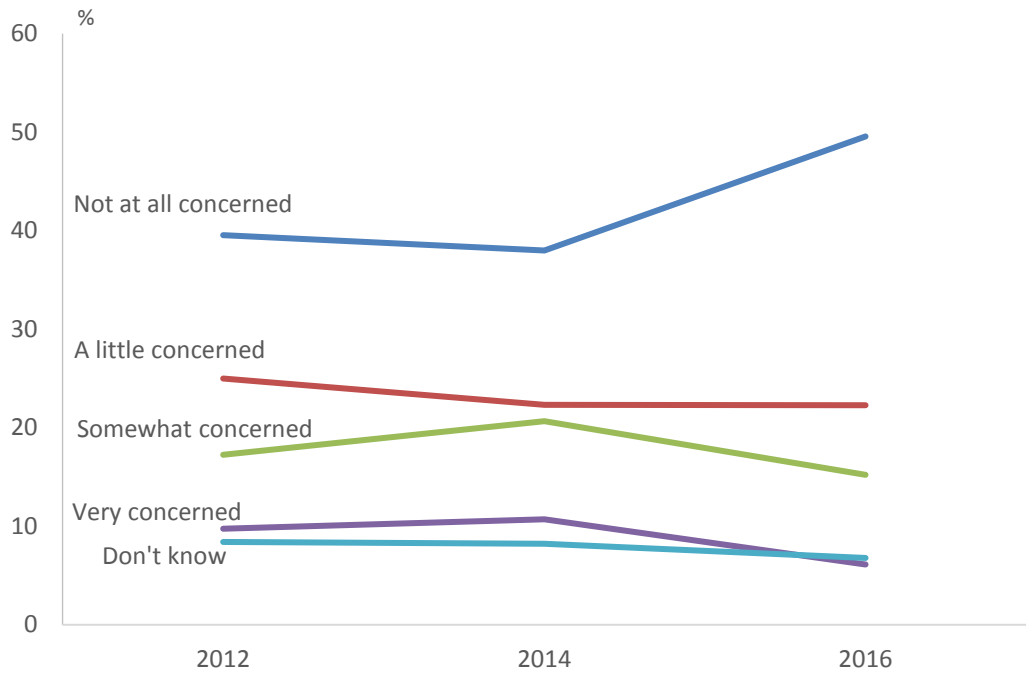


Figure 5-43: Level of concern about gambling in the community, 2012 to 2016

Base = all respondents

Profile of those who are concerned about the level of gambling in their community

The degree of concern with the level of gambling in the community varies depending on respondent ethnicity, education level, and neighbourhood deprivation (see Table 5-28).

Respondents who had an undergraduate (54%) or postgraduate (53%) degree were more likely to express their concern about the level of gambling in their community compared with those who had no formal qualifications (41%).

Māori (52%) and Pacific (60%) were more likely to be concerned about the level of gambling in their community compared with those of European/European/Other ethnicity (44%).

Those who live in areas of high deprivation (51%) were more likely to be concerned about the level of gambling in their community compared with those who live in areas of low deprivation (43%).

Table 5-28: Predictors of reporting concern about the level of gambling in a respondents' community

	Proportion	95% CI of proportion		Odds ratio	95% CI of Odds ratio	
		Lower	Upper		Lower	Upper
Overall						
	47%	44%	49%			
Education						
None	41%	36%	47%	Reference		
Secondary	43%	38%	47%	1.13	0.84	1.54
Trade/Certificate/Other	47%	42%	52%	1.36	0.98	1.88
Undergraduate	54%	48%	60%	**1.90*** **	1.34	2.70
Postgraduate	53%	46%	60%	**1.84** **	1.25	2.70
Ethnicity						
Māori	52%	47%	57%	**1.44** **	1.15	1.80
Pacific	60%	53%	68%	**1.98*** **	1.41	2.79
Asian	50%	42%	58%	1.14	0.79	1.63
European/Other	44%	41%	47%	Reference		
Deprivation						
Low	43%	38%	47%	Reference		
Mid	47%	43%	52%	1.24	0.96	1.60
High	51%	46%	55%	**1.37***	1.06	1.79

*Base: all respondents (excluding don't know/refused; n = 3,584); * p < 0.05, ** p < 0.01, *** p < 0.001; Outcome variable: How concerned are you about the level of gambling in your community (0 = not at all, 1= a little concerned to very concerned)*

5.5 RESPONSES TO HARMFUL GAMBLING

5.5.1 Strategies to avoid gambling too much

Past-year gamblers (*n*=2,686) were shown a list of strategies and asked whether they had used any of these ways to avoid gambling too much in the past 12 months. Most respondents (93%) said that they had not used, or not needed to use, any strategies to avoid gambling too much.

The most commonly used strategy was setting a dollar figure before starting, reported by 4% of all past-year gamblers. Very few (2.5%) reported using self-control, or knowing when to stop gambling. Around 1% of past-year gamblers reported using the following strategies: don't spend money if they don't have it, prioritising spending/household budgeting/spend money on other things, stop gambling and keep busy with other activities (see Table 5-29).

Table 5-29: Strategies used to avoid gambling too much (multiple responses allowed), 2016

Response	%	95% CI
None / I haven't had to	93	91 - 94
Set a dollar figure before starting	4.0	2.8 - 5.2
Self-control / know when to stop	2.5	1.5 - 3.6
Don't spend money if I don't have it	1.4	0.6 - 2.1
Prioritise spending / household budgeting / spend money on other things	1.0	0.5 - 1.5
Stop gambling	0.8	0.4 - 1.3
Keep busy with other activities	0.7	0.4 - 1.1
Avoid gambling places	0.5	0.3 - 0.8
Set a time limit	0.5	0.2 - 1.1
Only buy if the prize is big	0.4	0.1 - 1.1
Leave ATM and credit cards at home	0.4	0.2 - 0.7
Separate money for betting from other money	0.4	0.2 - 0.8
Aware of gambling addictions / problems	0.4	0.1 - 1.1
Get someone you trust to manage the money	0.3	0.1 - 0.8
Play games or apps that don't win you money	0.3	0.1 - 0.7
Don't know	0.3	0.1 - 0.7
Gambling with a friend / family member	0.2	0.1 - 0.5
Have yourself excluded from a gambling venue	0.1	0 - 0.2
Budgeting advice service	0.1	0 - 0.4
Buy to support charity / good cause	0.1	0 - 0.4
Block or restrict gambling websites on your computer	0.0	

Base: past-year gamblers (n = 2,686)

Strategies to avoid gambling too much: Changes over time

The proportion of past-year gamblers who used at least one strategy to avoid gambling too much has significantly decreased from 2012 when it was 12%, to 7% in 2016. There is no significant difference between 2016 and 2014 (5%).

5.5.2 'Checking in' about your gambling

To assess whether respondents had 'checked in' with themselves about their gambling, past-year gamblers (*n*=2,686) were asked whether, in the last 12 months, they had had an occasion where they thought about whether their gambling was still just for fun. About 1 in 20 past-year gamblers (4.6%) reported that they had 'checked in' about their gambling in the past 12 months (see Figure 5-44).

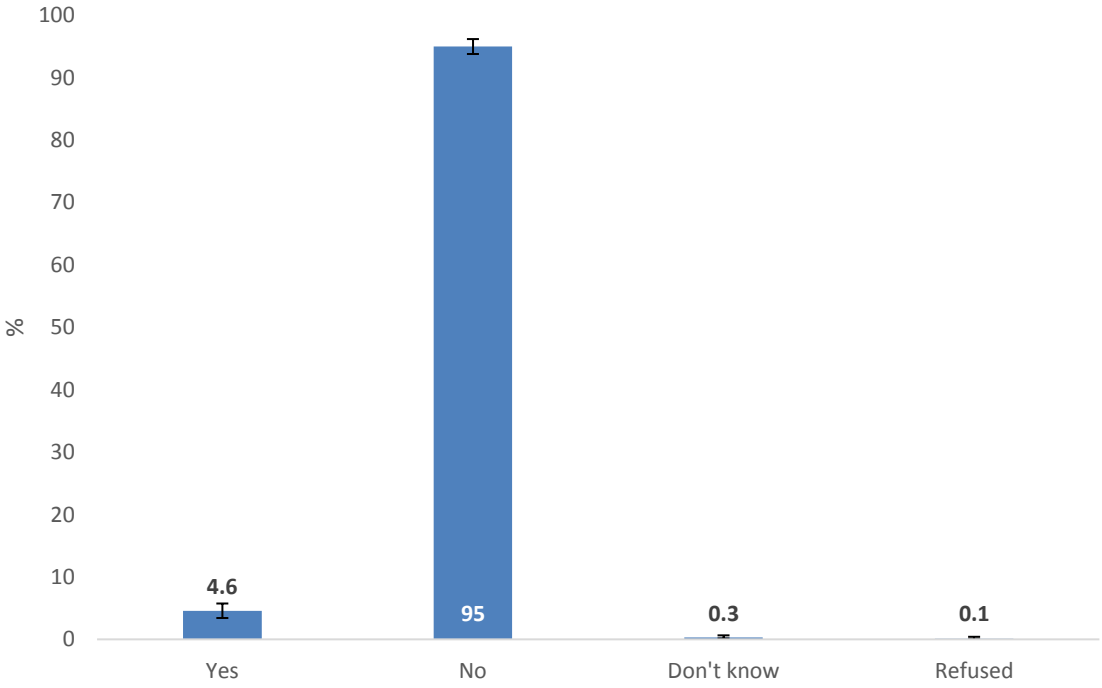


Figure 5-44: 'Checking in' about whether the respondents' gambling is still just for fun, 2016

Base = past-year gamblers (n = 2,686)

Figure 5-45 shows the proportion of past-year gamblers who reported 'checking in' about whether their gambling was still just for fun, split by gambling harm/PGSI:

- Moderate-risk/problem gamblers were much more likely (71%) to report that they had 'checked in' about whether their gambling was still just for fun compared with non-problem gamblers (19%) and low-risk gamblers (2%).
- Low-risk gamblers were more likely to report that they had 'checked in' about whether their gambling was still just for fun compared with non-problem gamblers.

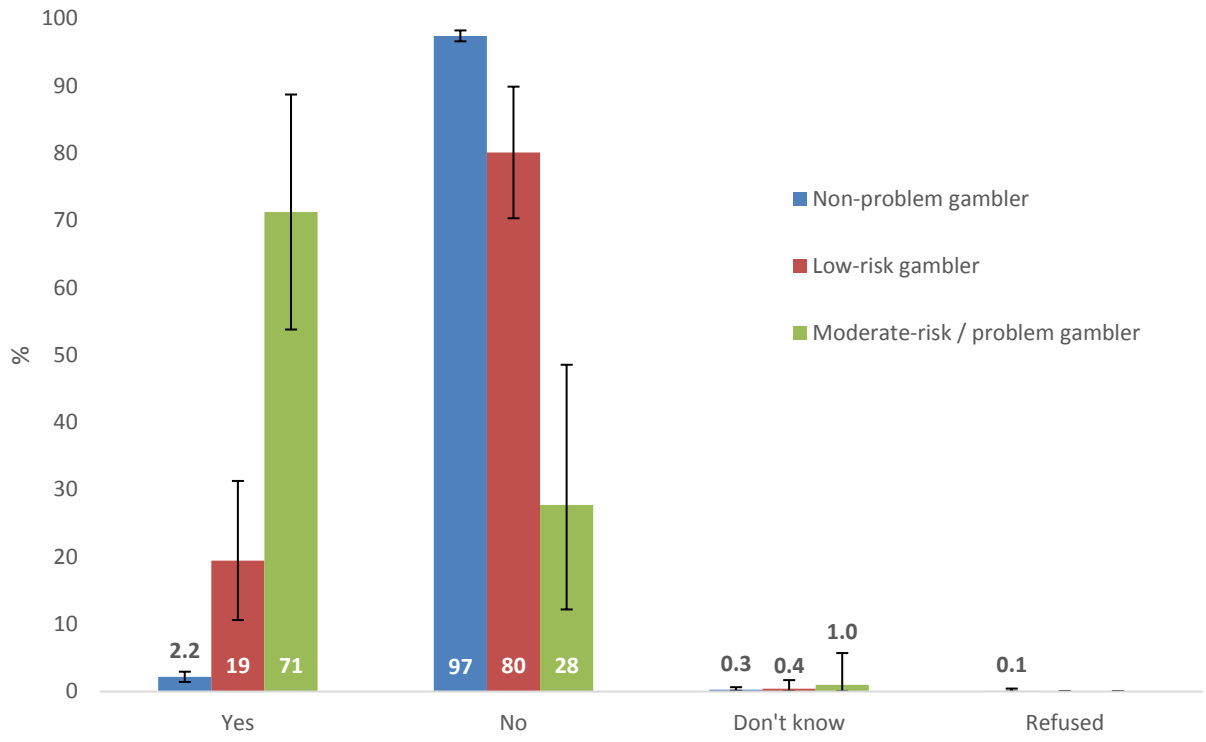


Figure 5-45: 'Checking in' about whether the respondents' gambling is still just for fun, by PGSI, 2016

Base: past-year gamblers (n = 2,686)

Profile of respondents who had 'checked in' about their gambling

There were two significant predictors of respondents' 'checking in' about their gambling. These were PGSI score and number of gambling activities participated in. A high PGSI score was associated with a greater probability that a respondent had 'checked in' about their gambling. For each PGSI score point increase, the odds that a respondent 'checked in' about their gambling increased by approximately 2.6 times (OR=2.63; 95% CI = 1.98, 3.54). For PGSI scores between 1 and 8, the probability of 'checking in' increased substantially (**Figure 5-46**). All problem gamblers had a very high probability of 'checking in' about their gambling, regardless of PGSI score.

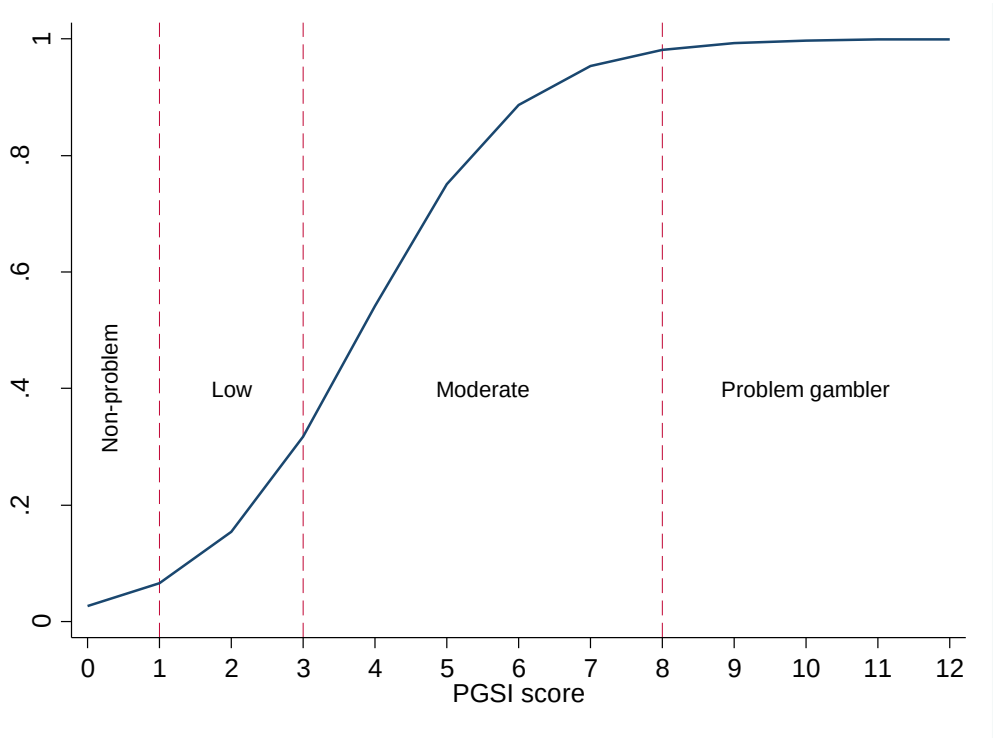


Figure 5-46: Predicted probability that respondents had 'checked in' with themselves about their gambling, by PGSI score

The number of gambling activities participated in over the past year was also associated with a greater probability that respondents had 'checked in' about their gambling. For each additional gambling activity participated in, the odds of 'checking in' increased by 31% (OR=1.31; 95% CI = 1.07, 1.61) (Figure 5-47).

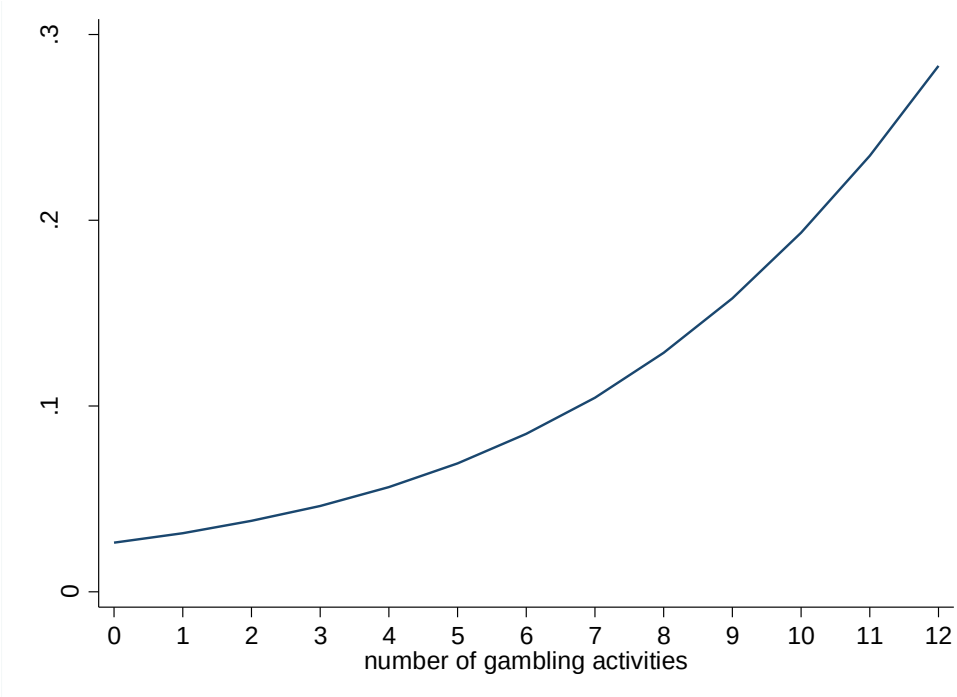


Figure 5-47: Predicted probability that respondents had 'checked in' with themselves about their gambling, by number of activities participated in

5.5.3 Actions taken if concerned about own gambling

Respondents who had gambled in the past-year (*n*=2,686) were asked, “If you were concerned about your own gambling, what would you do?” Respondents were not probed, and multiple responses were allowed. Only 11% said that they would do nothing, and 11% said that they didn’t know that they would do. The most likely action reported by past-year gamblers was talk to family/friends (29%), followed by ringing an 0800 helpline (17%) (see Table 5-30).

Table 5-30: Actions and strategies reported by individual if they were concerned about their own gambling (multiple responses allowed), 2016

Response	%	95% CI
Talk to family / friends	29	26 - 32
Ring an 0800 helpline	17	15 - 19
Stop gambling	15	13 - 17
Don't know	11	8.7 - 13
Nothing	11	8.6 - 13
Seek help from a GP or health professional	7.8	6.3 - 9.3
Get face-to-face counselling	7.3	5.9 - 8.6
Look on the internet for support	5.9	4.6 - 7.3
Seek community support groups	5.9	4.6 - 7.2
Avoid places that have gambling as an attraction	5.2	3.9 - 6.5
Other	3.9	2.9 - 4.9
Get someone you trust to manage the money	3.8	2.6 – 5.0
Look on the internet for self-help	3.2	2.1 - 4.3
Keep busy with other activities	3.0	1.9 - 4.1
Text a help service	2.1	1.2 - 3.1
Seek medical help	1.8	1.1 - 2.4
Go to church / pray	1.7	0.9 - 2.6
Contact budgeting advice service or similar	1.6	0.8 - 2.5
Have yourself excluded from a gambling venue	1.3	0.6 - 1.9
Set a dollar figure before starting	1.1	0.7 - 1.7
Talk to staff at gambling venue	1.1	0.6 - 1.9
Leave ATM and credit cards at home	0.9	0.5 - 1.5
Set a time limit	0.9	0.5 - 1.4
Block or restrict times on gambling websites	0.8	0.2 - 1.8
Separate money for betting from other money	0.7	0.3 - 1.3
Refused	0.1	0.0 - 0.4

Base = past-year gamblers (n = 2,686)

5.5.4 Contact made with support services

The majority of respondents (84%) had heard of at least one service to help people who gamble too much (see Section 5.3.4). Those who had heard of any of the support services listed were asked if they had ever accessed any of the services for themselves or someone else.

It was found that 96% of all respondents had never accessed any of the services for themselves or someone else and 3.2% had accessed at least one service (see Table 5-31). The most frequently mentioned support services were an 0800 telephone helpline (1.3%), free counselling/treatment service (1.2%), Gamblers Anonymous (0.8%) and support groups (0.8%).

Table 5-31: Accessed gambling help services for themselves or others (multiple responses allowed), 2016

Response	%	95% CI
None	96	95 - 97
At least one support service	3.2	2.4 – 3.9
0800 telephone helpline	1.3	0.8 - 1.9
Free counselling/treatment service	1.2	0.7 - 1.6
Gamblers Anonymous	0.8	0.5 - 1.2
Support groups	0.8	0.4 - 1.1
Salvation Army	0.7	0.4 - 1.1
Help from a GP/other health professional	0.7	0.3 - 1
Don't know	0.6	0.2 - 1
Māori health service	0.5	0.2 - 0.8
Private / paid treatment	0.4	0.1 - 0.6
Church or community leader	0.4	0.2 - 0.6
Other	0.3	0.1 - 0.5
Text helpline service	0.2	0.1 - 0.4
Internet site - self-help	0.2	0.1 - 0.4
Citizens Advice Bureau	0.2	0.1 - 0.3
Pacific health service	0.2	0 - 0.4
Refused	0.1	0 - 0.3
Asian health service	0.1	0 - 0.2

Base: all respondents (n = 3,854)

Profile of gambling support service users

Factors that predict whether someone uses a problem gambling support service were: age, ethnicity, deprivation index, education and PGSI score.

Table 5-32 shows that people 45 years and over (4.0%), Māori (7.3), those in high deprivation areas (4.3%), those with postgraduate education (4.5%) and those who gamble with some level of risk (8.2%) are most likely to contact a gambling support service.

Table 5-32: Predictors for those who contact gambling problem services

	Proportion	95% CI of proportion		Odds ratio	95% CI of odds ratio	
		Lower	Upper		Lower	Upper
Overall	3.2%	2.5%	3.9%			
Age						
15-17 years	0.9%	0%	2.7%	**0.16****	0.08	0.32
18-24 years	1.2%	0%	2.6%	0.19	0.02	1.62
25-44 years	3.1%	2.0%	4.2%	**0.63***	0.40	0.98
45+ years	4.0%	2.9%	5.0%	Reference		
Ethnicity						
Māori	7.3%	4.1%	10.6%	**3.14****	1.66	5.93
Pacific	3.6%	1.4%	5.8%	1.21	0.58	2.52
Asian	1.1%	0.1%	2.0%	0.31	0.09	1.07
European/Other	2.8%	1.9%	3.6%	Reference		
Deprivation						
Low	2.0%	1.1%	2.9%	Reference		
Mid	3.3%	2.0%	4.6%	1.79	0.96	3.33
High	4.3%	3.0%	5.6%	**2.19***	1.14	4.22
Education						
None	3.4%	1.9%	4.9%	Reference		
Secondary	2.9%	1.8%	4.0%	1.48	0.78	2.83
Trade/Certificate/Other	2.7%	1.5%	3.8%	1.02	0.49	2.12
Undergraduate	3.2%	1.7%	4.6%	1.95	0.87	4.37
Postgraduate	4.5%	2.0%	7.1%	**2.69***	1.10	6.61
PGSI						
Non-gamblers	2.7%	1.6%	3.8%	1.09	0.62	1.91
Non-problem gamblers	3.0%	2.3%	3.8%	Reference		
Some-risk gamblers	8.2%	3.0%	13.4%	**2.46***	1.16	5.23

*Base: all respondents (n = 3,854); * p < 0.05, ** p < 0.01, *** p < 0.001; Outcome variable: had used a gambling support service (1= yes, 0= no)*

5.6 ADVERTISING

5.6.1 Awareness of advertising about addressing gambling harm

All respondents (*n* = 3,854) were asked “In the last three months, have you seen or heard any advertising about harmful gambling and what you can do about it?” They were given four response options: ‘yes’, ‘no’, ‘don’t know’ or ‘refused’. In 2016, 1 in 2 (50%) respondents reported that they had seen advertising about addressing gambling harm in the past three months.

Location of advertising about gambling harm

Respondents who had seen or heard any advertising related to gambling harm (*n* = 1,901) were asked to identify where they had seen or heard that advertising. Advertising was predominantly reported as seen on television (87%), followed by being heard on the radio (20%) (see Table 5-33).

Table 5-33: Where advertising on gambling harm was seen or heard (multiple responses allowed), 2016

Response	%	95% CI
Television	87	85 - 89
Radio	20	17 - 23
Internet	8.8	6.6 - 11
Gambling venues	6.6	4.9 - 8.4
Social media (eg, Facebook)	6.0	4.2 - 7.8
Posters	5.8	4.3 - 7.2
National newspapers	5.7	4.1 - 7.2
Public signs or billboards	4.5	2.9 - 6
Pamphlets	3.3	2.3 - 4.2
Community centre, healthcare centre	3.3	2.2 - 4.4
Community newspapers	3.1	1.9 - 4.3
Workplace	2.3	1.3 - 3.3
Other	1.0	0.5 - 1.7

Base = respondents who had seen or heard any advertising related to gambling harm (n = 1,901)

Profile of who is seeing advertising about harmful gambling

Having seen or heard advertising about gambling harm was predicted by ethnicity, age and number of gambling activities participated in.

Table 5-34 shows that the rates of who has seen or heard gambling harm advertisement among Pacific (43%) and Asian people (26%) were lower than the rates for both Māori (56%) and people of European/Other ethnicity (55%). Compared with those aged 45 years and over (49%), people aged between 25 and 44 years (56%) were more likely to have seen or heard advertising.

Table 5-34: Predictors for respondents who have seen/heard a gambling harm advertisement

	Value	95% CI of value		Odds ratio	95% CI of Odds ratio	
		Lower	Upper		Lower	Upper
Overall	51%	48%	53%			
Ethnicity						
Māori	56%	51%	61%	0.99	0.77	1.27
Pacific	43%	36%	49%	**0.62****	0.46	0.84
Asian	26%	19%	33%	**0.31*****	0.21	0.46
European/Other	55%	52%	58%	Reference		
Age						
15-17 years	50%	35%	65%	1.49	0.82	2.71
18-24 years	45%	36%	54%	1.05	0.71	1.56
25-44 years	56%	52%	60%	**1.55*****	1.26	1.91
45+ years	49%	46%	52%	Reference		
Number of activities participated in (mean out of possible 12)						
	2.03	1.85	2.21	**1.24*****	1.16	1.32

*Base = all respondents (excluding don't know/refused; n = 3,778), * p < 0.05, ** ≤ 0.01, *** p < 0.001; Outcome variable: In the last three months, have you seen or heard any advertisement about harmful gambling (1= yes, 0= no)*

The number of gambling activities participated in was also associated with a greater probability of having seen or heard advertising about harmful gambling (Figure 5-48).

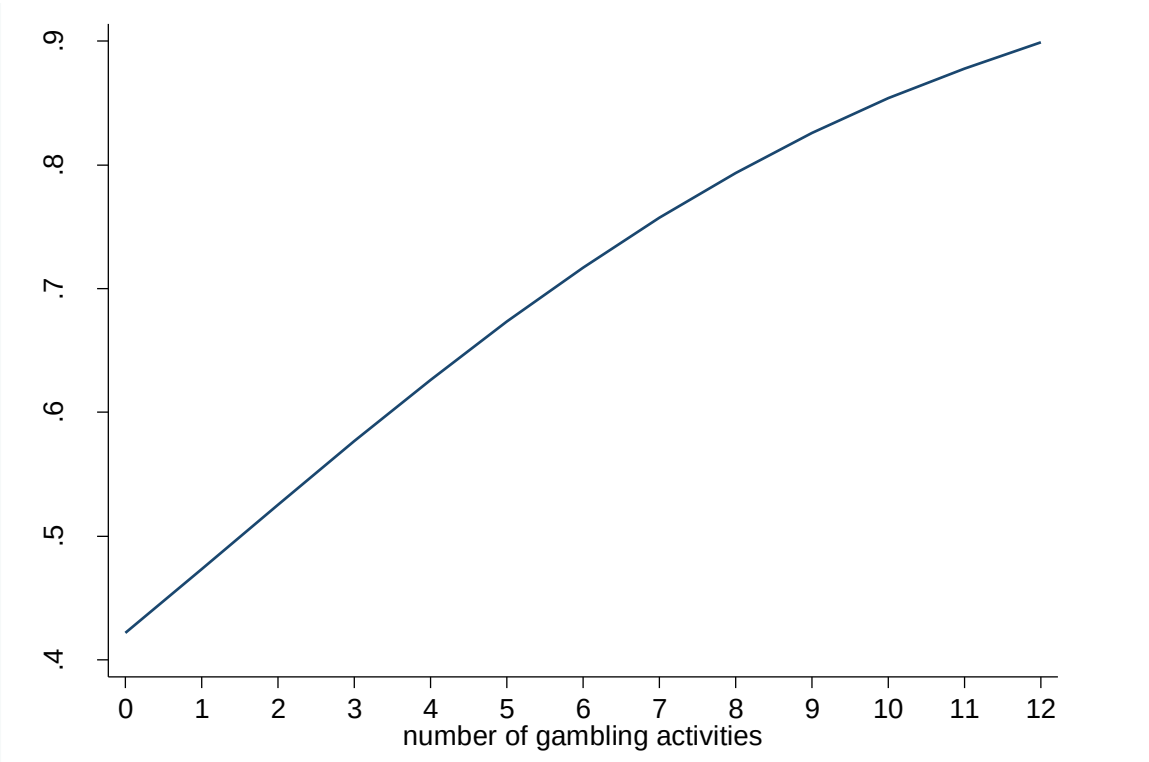


Figure 5-48: Predicted probability of seeing/hearing a gambling harm advertisement by the number or gambling participated in

5.6.2 Advertising of gambling activities

All respondents (*n* = 3,854) were shown a list of gambling activities (other than New Zealand Lotteries products) and asked which they had seen any advertising or promotion for in the last 12 months. In 2016, nearly half (45%) of respondents had not seen advertising for any of the activities (see Figure 5-49). The most commonly seen advertising or promotion was around internet games (27%), followed by betting on horse or dog races (24%) and betting on sports events (24%). Key findings were:

- Awareness of advertising of internet games has steadily increased since 2010, from 17% to 27% in 2016.
- Awareness of advertising about gaming machines and table games at casinos both dropped after 2010, but did not change much between 2014 and 2016.
- Awareness of advertising about gaming machines at a pub or club dropped between 2014 and 2016; from 13% in 2010 and 2014, to 10% in 2016.

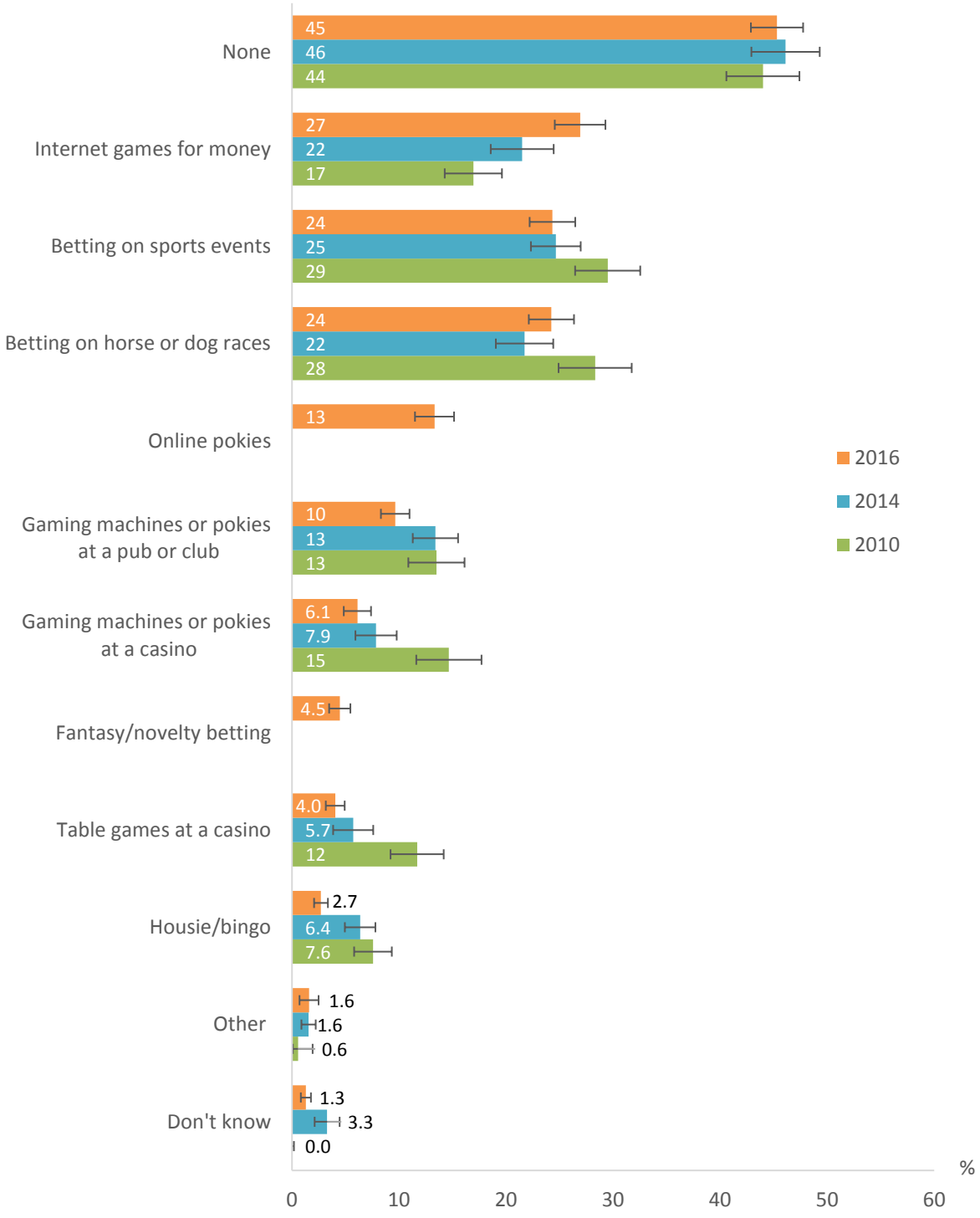


Figure 5-49: Awareness of advertising for gambling activities, 2010 to 2016

Base = all respondents

Note: The response options 'Online pokies' and 'Fantasy/novelty betting' were introduced for the first time in 2016

5.6.3 Response to Lotto advertising

Respondents who had bought New Zealand Lotteries products (Lotto, Strike, Powerball, Big Wednesday tickets; Instant Kiwi or scratch tickets; or Keno or Bullseye tickets) in the past year (*n* = 2,343) were asked 'In the last 12 months, have you bought more Lotto tickets or spent more on Lotto products as a result of seeing Lotto advertising or promotion for a big jackpot or prize draw? Just under half (46%) said yes.

Past-year gamblers (*n* = 2,686) were also asked whether they gambled, or gambled more often, on activities *other than* Lotto as a result of seeing or hearing any advertising or promotion for Lotto products. One-in-ten (11%) past-year gamblers reported that advertising or promotion for Lotto products had led them to gamble more, on activities other than Lotto.

Profile of buying more Lotto tickets as a result of advertising for big draws

Table 5-35: shows buying more Lotto tickets as a result of advertising for big draws was predicted by age, gambling type, and number of gambling activities participated in. Note that respondents aged between 15 to 17-years-old were excluded from this analysis due to low numbers in this group. Compared with those aged 45 years and over (43%), people aged between 25 and 44 years (55%) were more likely to buy more Lotto tickets as a result of advertising for big draws.

Infrequent gamblers were significantly more likely to buy more Lotto tickets as a result of advertising for big draws (50%) than non-continuous gamblers (37%) and continuous gamblers (38%). The number of gambling activities participated in was also associated with a greater probability of buying more Lotto tickets as a result of advertising for big draws. For each additional gambling activity participated in, the odds of buying more Lotto tickets increased by 12%.

Table 5-35: Predictors for buying more Lotto tickets as a result of seeing or hearing advertising for big draws

	Value	95% CI of value		Odds ratio	95% CI of Odds ratio	
		Lower	Upper		Lower	Upper
Overall (proportion)	46%	43%	50%			
Age (proportion)						
18-24 years	36%	22%	49%	0.58	0.32	1.06
25-44 years	55%	50%	60%	**1.36***	1.05	1.74
45+ years	43%	40%	47%	Reference		
Gambling type (proportion)						
Infrequent gambler	50%	46%	54%	Reference		
Non-continuous gambler	37%	32%	42%	**0.54*****	0.41	0.72
Continuous gambler	38%	26%	51%	**0.51***	0.29	0.89
Number of activities participated (mean out of possible 12)						
	2.66	2.50	2.81	**1.12****	1.04	1.22

Base = buyers of New Zealand Lotteries products aged 18+ who had seen Lotto advertising (n=2,290); outcome variable: bought more Lotto tickets as a result of advertising for big draws (1=yes, 0=no)

Profile of those who gamble more on other activities as a result of advertising for Lotto products

Table 5-36 shows that only ethnicity was significantly associated with gambling, or gambling more often on activities other than Lotto as a result of seeing or hearing any advertising or promotion for Lotto products. Māori (15%) were more likely to be influenced by Lotto advertising than those of European/Other ethnicity (10%).

Table 5-36: Predictors for gambling on activities *other than* Lotto as a result of seeing or hearing any advertising or promotion for Lotto

	Proportion	95% CI of proportion		Odds ratio	95% CI of odds ratio	
		Lower	Upper		Lower	Upper
Overall	11%	9.3%	13%			
Ethnicity						
Māori	15%	11%	20%	**1.68***	1.13	2.49
Pacific	14%	8.3%	20%	1.50	0.87	2.57
Asian	14%	6.9%	22%	1.53	0.79	2.98
European/Other	10%	7.7%	12%	Reference		

Base = past-year gamblers who had seen Lotto advertising (n=2,584); outcome variable: gambled more on other activities as a result of Lotto advertising (1=yes, 0=no)

6. CLASS 4 VENUES AND ELECTRONIC GAMING MACHINES ('POKIES')

Electronic gaming machines (or pokies) are found to be the gambling activity most associated with harm in the literature (Abbott et al, 2014; Rossen, 2015; Tu & Puthipiroj, 2015). Gaming machines are installed in casinos as well as in some pubs and clubs, known as Class 4 venues. There are currently 1,180 Class 4 venues with pokies in New Zealand (Department of Internal Affairs, 2017). Under the Gambling (Harm Prevention and Minimisation) Regulations 2004, a person trained in gambling harm minimisation must be present when machines are available; however, venue staff may experience barriers to identifying and approaching potential problem gamblers (Armstrong, 2014). Further, drinking and gambling may be connected for some people as harmful gambling is associated with other potentially addictive behaviours such as hazardous drinking (Abbott et al, 2014; Rossen, 2015).

This section reports on a series of questions that were first introduced to the HLS in 2014 around pokies in pubs and bars. For comparison purposes, some data around gaming machines in casinos is also included.

6.1 PARTICIPATION IN POKIES

In the past year, 1 in 10 New Zealand adults (374,000; 10%) had played a gaming machine at a pub or club. Only 5% had played gaming machines at a casino.

Participation in pokies in pubs or clubs has been decreasing rapidly over time (see Figure 6-1 and Table 6-1). The proportion of respondents who reported playing pokies in pubs or clubs in the past year has dropped significantly from 19% in 2006/07 to 10% in 2016. The proportion in 2016 is also significantly lower than in 2014 (13%).

Participation in pokies at casinos has also been declining, from 9% in 2006/07 to only 5% in 2016. However, the proportion in 2016 is not significantly lower than 2014.

Section 4.2.3 looked at participation of gambling activities by geographic region. It was found that Auckland has a lower rate of participation of pokies in pubs or clubs (6%) than the other regions, which all have a similar rate (around 12%). The regions considered were: Auckland, Wellington, the North Island excluding Auckland and Wellington, Canterbury, and the South Island excluding Canterbury.

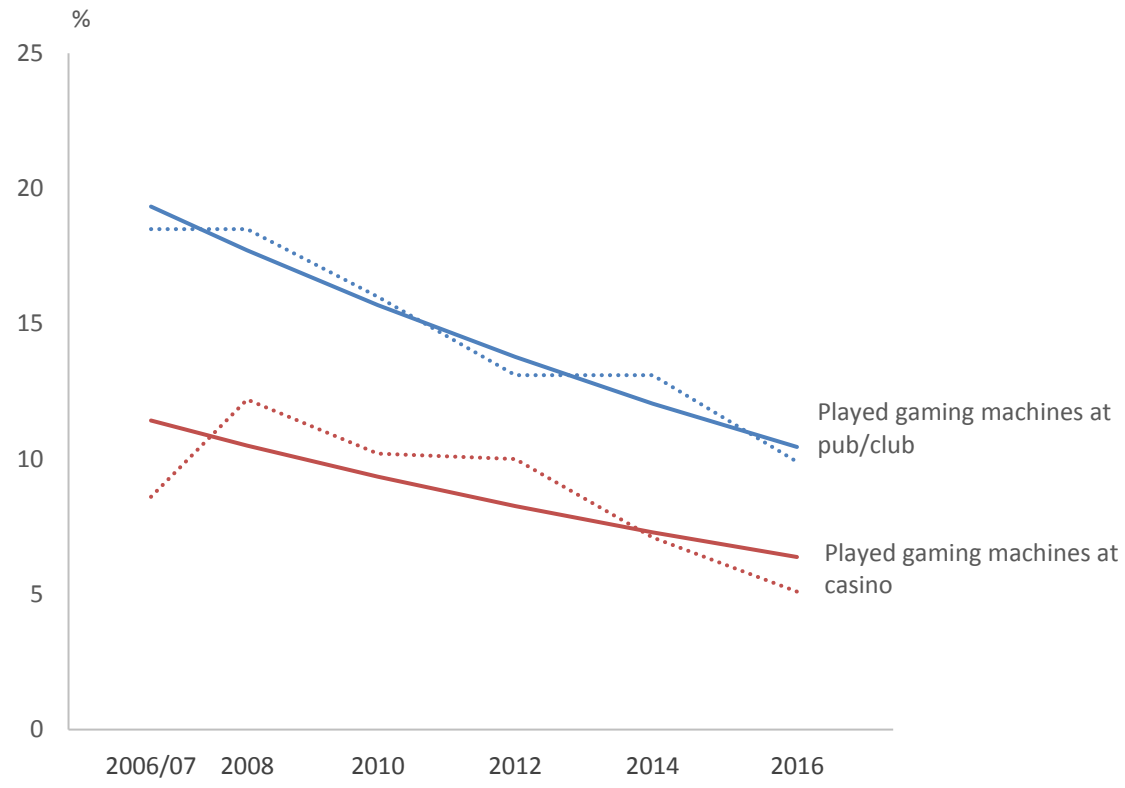


Figure 6-1: Participation in pokies in pubs/clubs, and in casinos, 2006/07 to 2016

Base = all respondents

Table 6-1: Participation in pokies in pubs/clubs, and in casinos, 2006/07 to 2016

Year	Played gaming machines at pub or club %	Played gaming machines at casino %
2006/07	19 (16 - 21)	8.6 (6.6 - 10.7)
2008	19 (16 - 21)	12.2 (9.6 - 14.8)
2010	16 (13 - 19)	10.2 (7.9 - 12.5)
2012	13 (11 - 16)	10.0 (7.7 - 12.3)
2014	13 (11 - 15)	7.1 (5.3 - 8.9)
2016	10*† (8.5 - 11)	5.1* (4.0 - 6.1)

Base = all respondents

** Significant difference between 2016 and 2006/07*

† Significant difference between 2016 and 2014

6.1.1 Mean age of pokie players

In 2016, the mean age of people who play pokies in pubs or clubs at least monthly was 47 years. Those who play less often than monthly were a little younger at 38 years (see Table 6-2). At least monthly players were usually older than those who played less often than monthly, but the difference was only significant in 2010 and 2016.

There were no significant differences in the mean age of men and women who play pokies in any of the survey years. Similarly, there are no significant differences between the average age of players between 2016 and any previous year. This was true regardless of frequency of participation.

Table 6-2: Mean age of people who play pokies in pubs/clubs, 2010 to 2016

Year	At least monthly players (age in years)	Less often than monthly players (age in years)	Sample size (at least monthly players)
2010	51 (48 - 55)	39 (36 - 43)	122
2012	42 (38 - 47)	44 (40 - 48)	124
2014	44 (37 - 51)	39 (36 - 41)	102
2016	47 (43 - 51)	38 (36 - 41)	137

6.1.2 Frequency of playing pokies at pubs or clubs

The frequency of participation in playing gaming machines at pubs or clubs, by subgroups, is shown in Table 6-3. Analyses of those who took part in this gambling activity at least once a week show that:

- Participating in pokies at a pub or club on a weekly basis, or at least once a month, was not reported by those aged 15 to 24 years.
- Participation in pokies at a pub or club on a weekly basis was not reported by Asian people.
- Moderate-risk/problem gamblers were more likely than non-problem gamblers to participate in gaming machines at a pub or club on a weekly basis, as well as on a monthly basis.

Table 6-3: Frequency of playing gaming machines in pubs and clubs, by subgroups, 2016

Frequency	Gender		Age group (in years)				Prioritised ethnicity			
	Male (%)	**Female (%)**	**15 - 17 (%)**	**18 - 24 (%)**	**25 - 44 (%)**	**45+ (%)**	**Māori (%)**	**Pacific (%)**	**Asian (%)**	**European /Other (%)**
At least once a week	0.9 (0.5-1.4)	0.6 (0.3-1.3)	0 (0-3.2)	0.8 (0.1-3.1)	0.6 (0.2-1.1)	0.9 (0.5-1.5)	1.7 (0.6-3.8)	1.4 (0.4-3.3)	0 (0-1.1)	0.7 (0.4-1.1)
At least once a month	2.3 (1.3-3.3)	1.5 (0.9-2.1)	0 (0-3.2)	2 (0.8-4.1)	2 (0.8-3.2)	1.9 (1.2-2.6)	3.7 (2.1-5.3)	3.5 (1.6-6.5)	0.7 (0-4.3)	1.6 (0.9-2.3)
Less often than monthly	7.1 (5.1-9.1)	7.4 (5.9-8.9)	2.4 (0.2-8.9)	11.3 (6.4-16.2)	10 (7.8-13)	4.5 (3.4-5.6)	14 (10-17)	5.5 (2.6-10)	3.9 (0.8-10.6)	6.8 (5.5-8.2)
Did not participate	90 (87-92)	90 (89-92)	98 (91-100)	86 (81-91)	87 (84-90)	93 (91-94)	81 (77-85)	90 (85-94)	95 (91-100)	91 (89-92)
Sample size (n)	1,575	2,279	83	336	1,338	2,097	930	615	325	1,984

Frequency	PGSI				Deprivation			Total
	Non-gambler (%)	**Non-problem gambler (%)**	**Low-risk gambler (%)**	**Moderate-risk/problem gambler (%)**	**Low (%)**	**Mid (%)**	**High (%)**	**(%)**
At least once a week	0	0.3 (0.1-0.6)	5.9 (2.4-12)	23 (10-42)	0.4 (0.1-0.9)	1 (0.5-1.8)	0.7 (0.4-1.2)	**0.8 (0.5-1.1)**
At least once a month	0	1.8 (1.1-2.4)	10 (5.1-19)	23 (9-43)	1 (0.4-2.1)	2.2 (1.3-3.2)	2.4 (1.2-3.6)	**1.9 (1.3-2.4)**
Less often than monthly	0	9.4 (7.8-11)	21 (12-29)	26 (5.5-60)	6.9 (4.6-9.1)	7.7 (5.7-9.8)	7.1 (5.1-9)	**7.3 (6.1-8.5)**
Did not participate	100	88 (87-90)	63 (53-73)	28 (12-43)	92 (89-94)	89 (87-91)	90 (87-92)	**90 (89-92)**
Sample size (n)	1,168	2,449	148	89	878	1,347	1,629	**3,854**

Base = all respondents (n = 3,854)

6.1.3 Reported expenditure on gaming machines or pokies

To estimate personal expenditure on gaming machines or pokies, respondents who reported engaging in this gambling activity in either pubs or clubs, or casinos, in the last 12 months were asked how much, on average, they had spent at each session (see Figure 6-2). The most commonly reported (38%) average spend category was $11 to $25 per session.

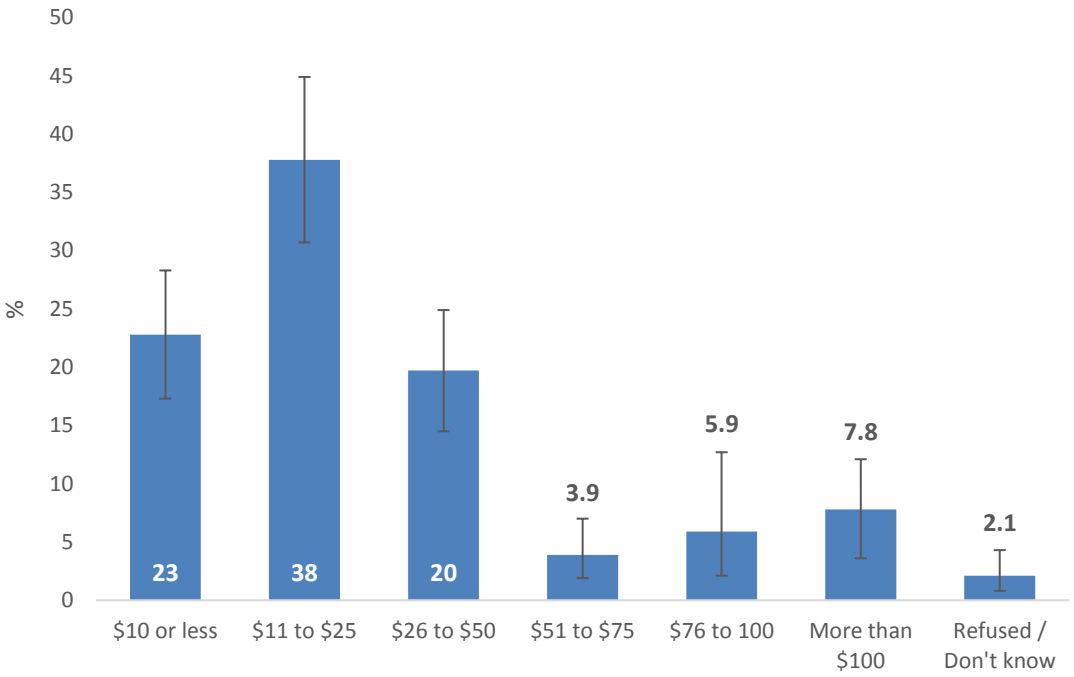


Figure 6-2: Reported average spend per session on gaming machines/pokies, 2016

Base = respondents who had played gaming machines/pokies in the past year (n = 495)

6.1.4 Attitudes towards pokies

Nearly half of New Zealand adults (46%) believed that pokies in pubs or clubs were harmful and over one-third (35%) believed they are socially undesirable.

The opinion that pokies are potentially harmful (ie, likely to attract people into playing more often, or for more money than they should) and socially undesirable is becoming less prevalent over time (Figure 6-3). More respondents thought that pokies in pubs and clubs were potentially harmful than pokies in casinos, but the time trend for both activities is declining; 60% of respondents thought that pokies in pubs/clubs were harmful in 2010, and this dropped to 46% in 2016. In 2010, 51% of respondents thought that pokies in casinos were harmful and this dropped to 37% in 2016.

Similarly, the opinion that pokies in pubs/clubs are socially undesirable is declining over time. In 2010, 47% thought that pokies in pubs/clubs were socially undesirable and this dropped to 35% in 2016.

On the other hand, the opinion that pokies in casinos are socially undesirable is becoming more prevalent, and catching up with attitudes to pokies in pubs/clubs. In 2010, only 21% of respondents thought pokies in casinos were socially undesirable, and this increased to 31% in 2016.

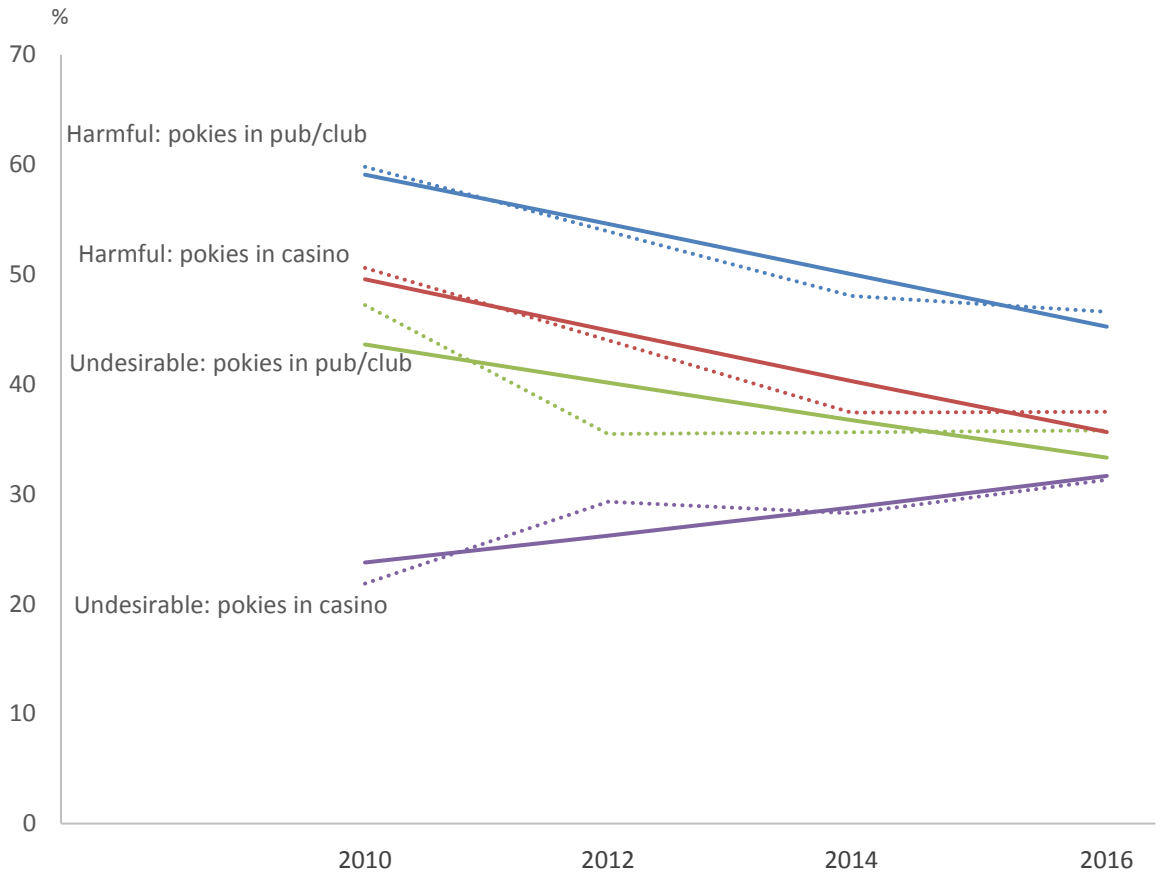


Figure 6-3: Views on whether pokies in pubs or clubs of pokies in casinos are seen as socially undesirable, and whether they are seen as potentially harmful, 2010 to 2016

Base = all respondents

6.2 POKIES AND ALCOHOL

Views on pokies in pubs and bars

All respondents (*n* = 3,854) were asked how much they agree or disagree with the statement "Pokie machines make a pub or bar more enjoyable to spend time at." Around 1 in 8 (12%) respondents 'agreed' or 'strongly agreed' with this statement, while 59% reported they 'disagreed' or 'strongly disagreed' with it (Figure 6-4).

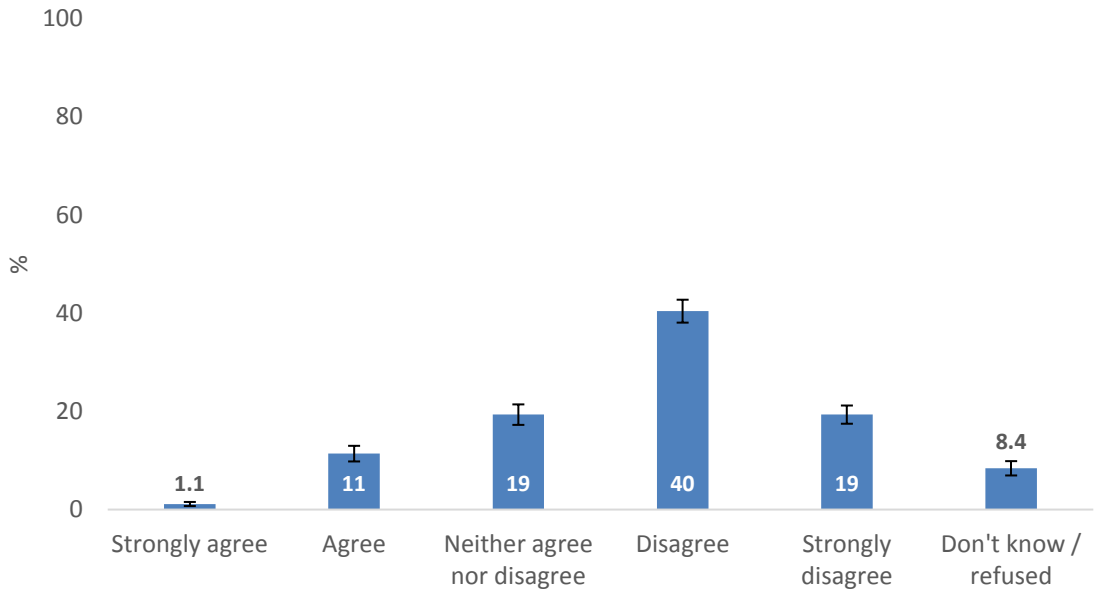


Figure 6-4: Opinion on whether pokie machines make a pub or club more enjoyable to spend time at, 2016

Base = all respondents (n = 3,854)

Profile of those who think pokie machines make a pub more enjoyable

Table 6-4 shows important predictors for respondents who agreed that pokie machines make pubs more enjoyable to spend time at were: ethnicity, neighbourhood deprivation index and the number of gambling activities participated in.

Table 6-4: Predictors for agreement with the statement "pokie machines make pubs more enjoyable"

	Value	95% CI of value		Odds ratio	95% CI of odds ratio	
		Lower	Upper		Lower	Upper
Overall (proportion)	17%	15%	19%			
Ethnicity (proportion)						
Māori	20%	16%	24%	1.30	0.95	1.79
Pacific	27%	20%	34%	**1.93****	1.23	3.03
Asian	28%	19%	37%	**2.50****	1.46	4.30
European/Other	14%	12%	17%	Reference		
Deprivation (proportion)						
Low	12%	8.4%	15%	Reference		
Mid	19%	15%	22%	**1.62***	1.09	2.42
High	22%	18%	27%	**2.00****	1.30	3.09
Number of activities participated (mean out of possible 12)						
	2.09	1.84	2.35	**1.20*****	1.09	1.31

*Base = all respondents (excluding neutral responses; n = 2,799), * p < 0.05, ** ≤ 0.01, *** p < 0.001; Outcome variable: pokie machines make a pub or bar more enjoyable to spend time at (1= agree, 0= disagree)*

The rate of agreement with the statement "pokie machines make pubs more enjoyable" among Asian people (28%) was significantly higher than the rates among Māori (20%) and the European/Other ethnicity (14) group. Also, the rate among Pacific people (27%) was significantly higher compared with people of European/Other ethnicity.

Regarding deprivation status, those who lived in the medium (19%) or high (22%) deprivation areas were more likely to agree with the statement, compared with those respondents who lived in areas with low deprivation score (12%).

The number of gambling activities participated in was also associated with a greater probability of agreeing with "pokie machines make a pub or bar more enjoyable to spend time at" (Figure 6-5).

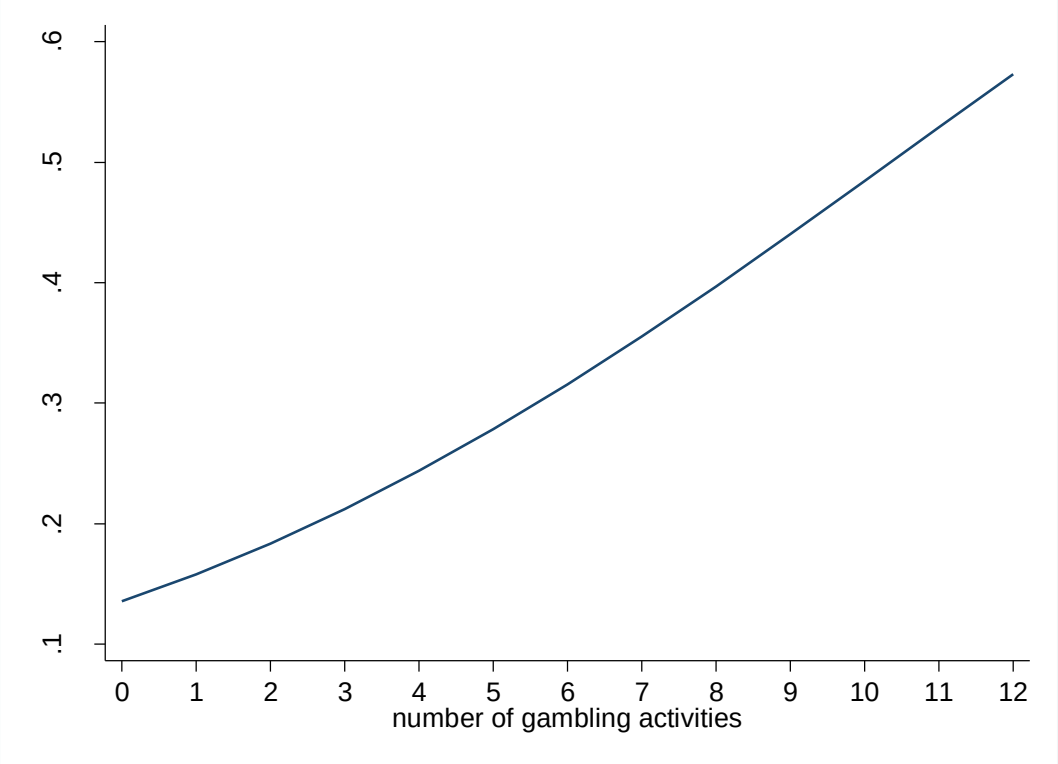


Figure 6-5: Predicted probability of agreement that pokie machines make a pub or bar more enjoyable by the total number of gambling activities participated in

Preference for venues without pokie machines

All respondents (*n* = 3,854) were also asked about their agreement level with the statement “I prefer to drink in pubs or bars that do not have pokie machines”. Over 2 in 5 (42%) respondents agreed or strongly agreed with the statement, while 1 in 7 (14%) disagreed or strongly disagreed (see Figure 6-6).

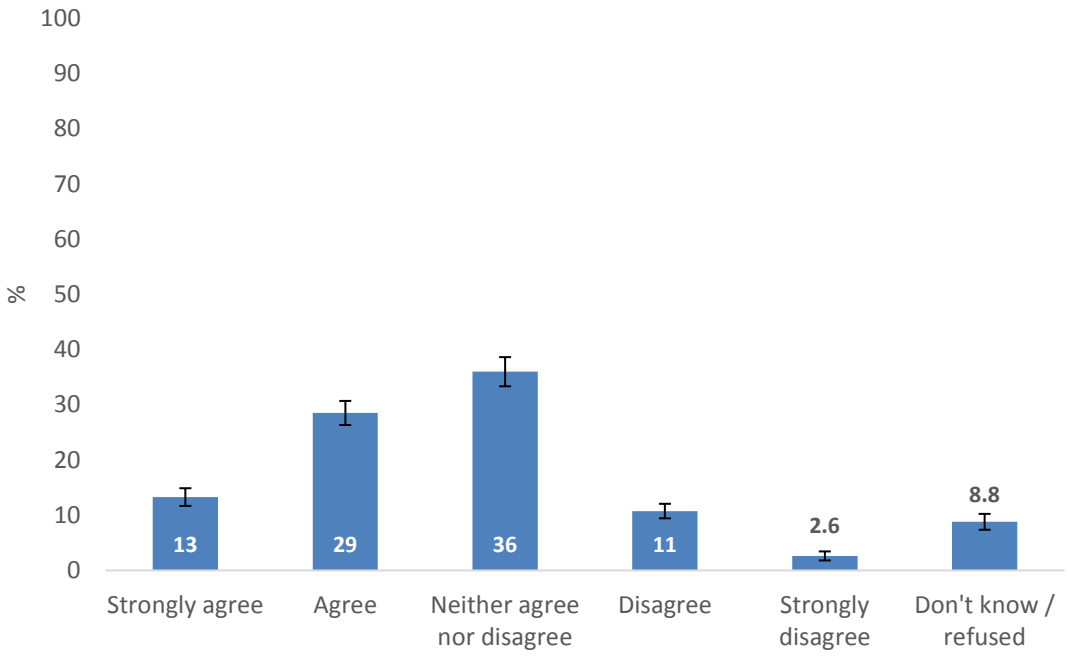


Figure 6-6: Preference to drink in pubs and bars that do not have pokie machines, 2016

Base = all respondents (n = 3,854)

The only significant predictor of preferring to drink in pubs or bars without pokie machines was whether or not the respondent had played pokies in the past year. Respondents who did not play gambling machines or pokies had over four times the odds (OR = 4.19; 95% CI = 2.76, 6.40) or preferred to drink in pubs and bars that do not have pokie machines, compared with those who had played pokies in a pub or club (78% versus 46%).

Spending on pokies when drinking alcohol

All respondents who had played pokies either at pub or club and casino (*n* = 495), were asked to identify if they spend more on the pokies when they drink alcohol. Around 1 in 3 (29%) answered ‘yes’, 8% of respondents were non-drinkers, 2% answered ‘don’t know’ and the remaining 61% responded ‘no’ to this question.

Factors that predict if respondents were likely to report that they spent more on the pokies when they drink alcohol were PGSI score and the number of gambling activities they participated in. Out of those who played pokies at pubs, clubs or casinos in the past year (*n* = 495), each PGSI score increase of one was associated with a clear increase in the odds that respondents would spend more on pokies when they drink alcohol (OR = 1.38; 95% CI = 1.13, 1.70) (Figure 6-7).

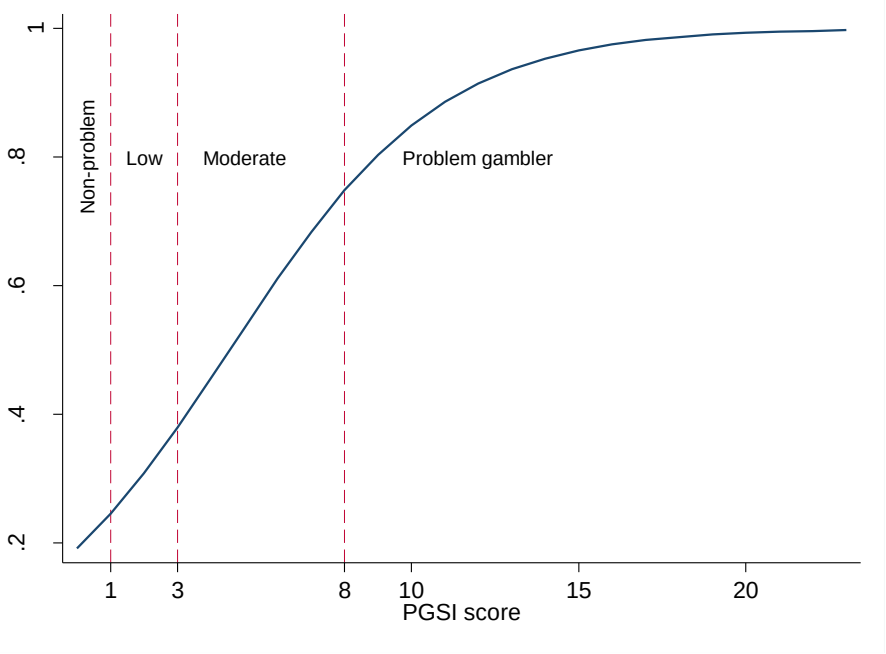


Figure 6-7: Predicted probability of spending more on pokies when drinking alcohol by PGSI score

The number of gambling activities participated in was also positively associated with spending more on pokies while drinking. For each additional gambling activity participated in, the odds of spending more on pokies while drinking increased (OR = 1.26; 95% CI = 1.05, 1.52) (Figure 6-8).

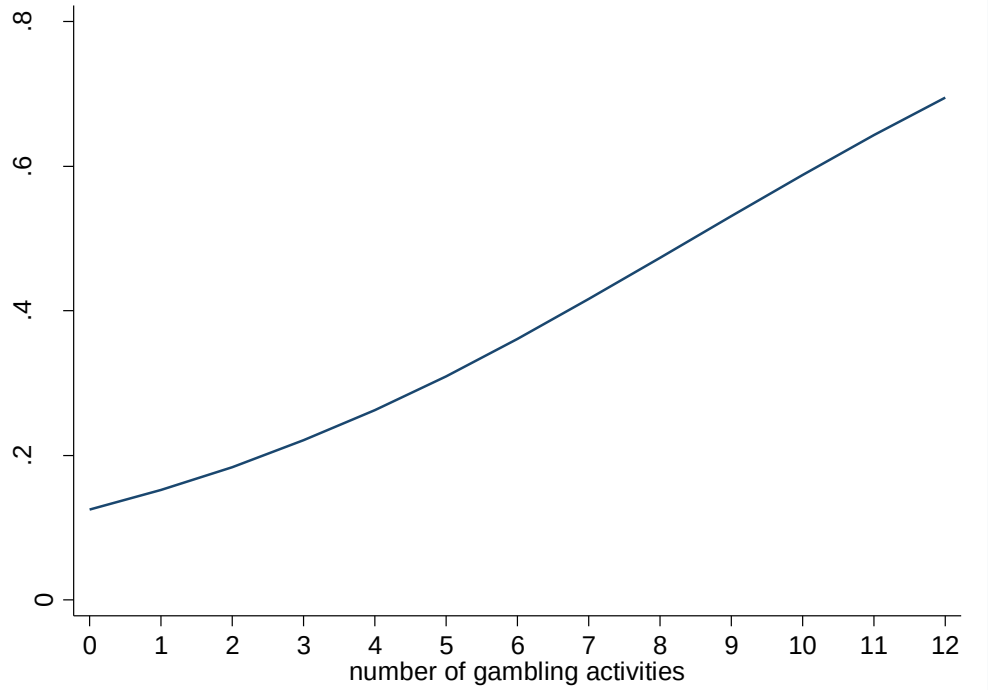


Figure 6-8: Predicted probability of spending more on pokies with drinking, by number of gambling activities participated in

6.3 POKIE VENUES AND STAFF INTERACTION

Pokie players (in pubs, clubs or casinos; *n* = 495) were also asked about their interaction with staff in gambling venues. Among those who reported some interactions with venue staff, multiple responses relating to the type of interaction were allowed. Half (49%) of pokie players reported that they had not had any interaction with staff members (see Figure 6-9). This is an improvement from the 2014 HLS in which 70% of pokie players reported no interaction with staff members. Just under one-third (29%) of pokie players reported that they interacted with staff when changing coins, 1 in 10 (12%) said 'they have a general chat with me', and 1 in 10 (12%) pokie players were aware that staff members knew their name or recognised them. Only 0.3% reported that staff had spoken to them with a concern about their gambling and no respondents reported that staff had given them a leaflet on gambling support services.

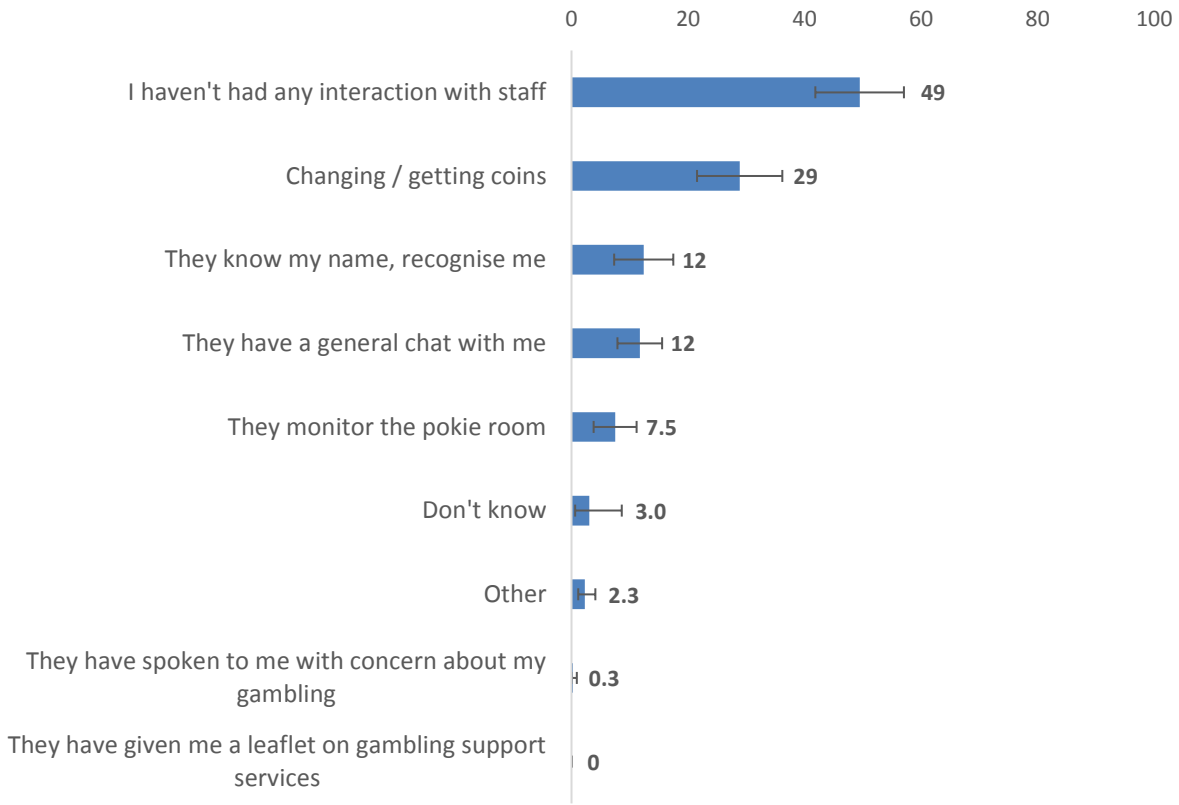


Figure 6-9: Interaction with staff at pokie venues when there to gamble, 2016

Base = pokie players (n = 495)

6.4 HELP SERVICES ADVERTISED AT POKIE VENUES

The questionnaire also included two questions specifically around help services advertised at pokie venues. Respondents who had played pokies in the past 12 months (*n* = 495) were first asked whether they had seen help services advertised at pokie venues. Those who had seen help

services advertised (*n*=303) were then asked about how they responded to these advertisements. Fully 2 in 3 pokie players in the previous 12 months (66%) said that they had noticed advertising about help for gambling problems at a venue. Of these, most said that they ignored the information because it was not relevant to them (53%), or that they read it and did not think it was relevant to them (27%) (see Figure 6-11). Only 1 in 50 (2%) said that they read the information and thought about changing their behaviour, and 16% reported that they read it and thought that it would be useful for others.

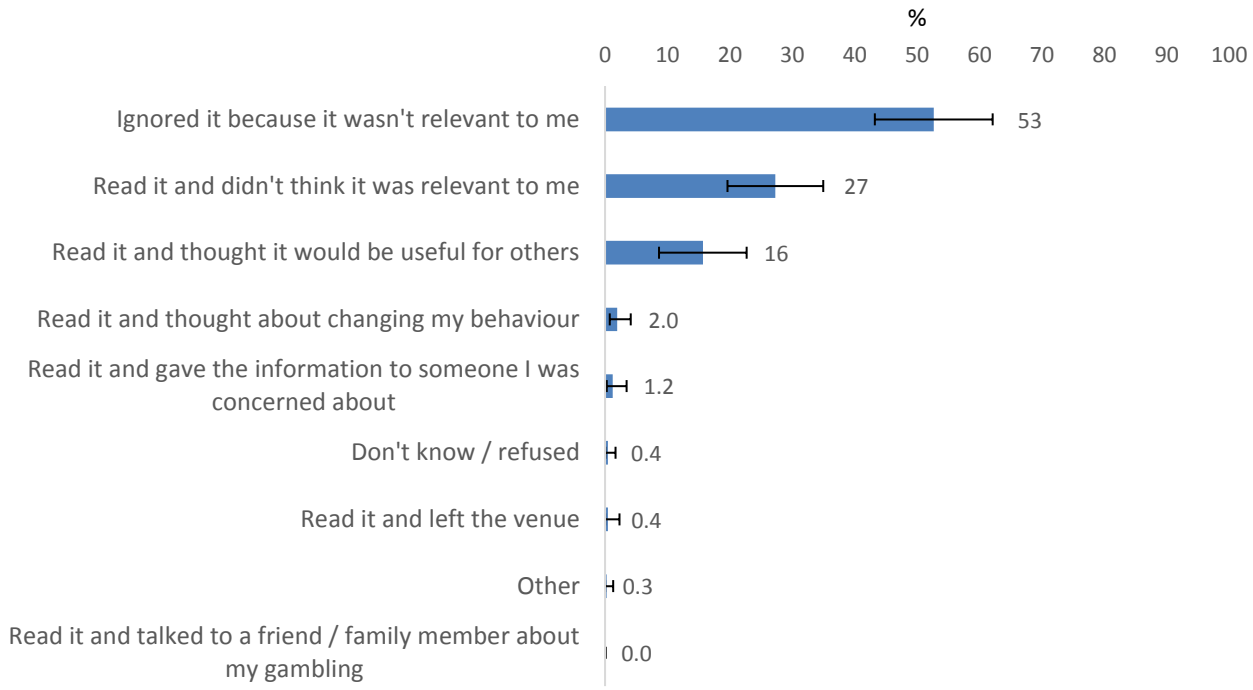


Figure 6-10: Response to gambling help-service advertising at pokie venues, 2016

Base = pokie players who reported noticing information about gambling help-services at pokie venues (n = 303)

6.5 KNOWLEDGE OF HOST RESPONSIBILITY REQUIREMENTS

In 2016, 76% of respondents said that venues with pokie machines should do something to prevent their customers' gambling from becoming harmful. This was significantly higher than in 2014 (72%). The proportion of respondents who knew that venues with pokie machines are required, by law, to prevent their customers' gambling from becoming harmful did not significantly change from 32% in 2014 to 35% in 2016 (see Table 6-5).

Table 6-5: Knowledge that venues with pokie machines are lawfully required to prevent their customers' gambling form becoming harmful

	Yes %	No %	Don't know %
2014	32 (29 - 35)	18 (16 - 21)	50 (46 - 53)
2016	35 (33 - 37)	20 (18 - 22)	45 (42 - 48)

Base = all respondents (n = 3,854 in 2016)

Knowledge among pokie players that venues with pokie machines are lawfully required to prevent their customers' gambling from becoming harmful is shown in Figure 6-11. Over 2 in 5 pokie players (43%) knew that venues with pokie machines are required, by law, to prevent their customers' gambling from becoming harmful, one-quarter (24%) responded 'no', and a third (34%) did not know.

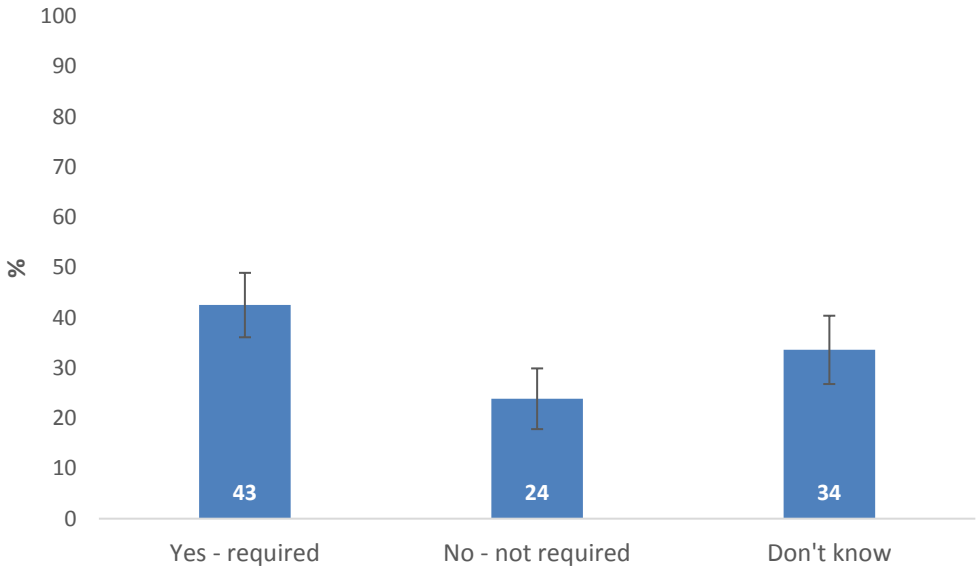


Figure 6-11: Awareness of legal requirement for venues with pokie machines to prevent their customers' gambling from becoming harmful among pokie players, 2016

Base = past-year pokie players (495)

7. DISCUSSION

While the majority of New Zealanders gamble infrequently and without harm, a significant minority gamble in a way that puts them at risk of harm. The 2016 HLS findings show that 3.3% of New Zealanders aged 15 years and over met the PGSI criteria for low-risk gambling; 1.5% for moderate-risk gambling; and 0.1% for problem gambling. Using an estimated population of people aged 15 years and over in New Zealand of 3.773 million, these figures represent around 125,000 low-risk gamblers, 55,000 moderate-risk gamblers, and 6,000 problem gamblers in New Zealand. It is important to note that low-risk gamblers are not in a zero-risk state. By definition, low-risk gamblers may be experiencing some degree of harm or negative consequences from their gambling.

These proportions in the general population are largely comparable to those reported in other jurisdictions including Australia (Dowling et al 2016; Sprotson et al 2012; Productivity Commission, 2010) and worldwide (Gowing et al 2011). Hodgins and colleagues (2016) estimate that gambling disorders affect 0.2% to 5.3% of adults worldwide, although they note that the estimates should be treated with caution due to the varying screening instruments and methods used, and availability and accessibility of gambling opportunities. The prevalence rate of problem gambling found in the 2016 HLS was lower than that reported in the National Gambling Study (Abbott et al, 2014) and significantly lower than the rate found in the 2010 HLS (0.8%). There was no significant change in the HLS estimates between 2012 and 2016.

While the prevalence of risky gambling is relatively low at a general population level, a different picture emerges when we look at the incidence of gambling harm amongst those who regularly play. Schull (2014) points out that many find it misleading to measure the problem within the *general* population, given the percentage of people experiencing harm amongst the *gambling* population is a good deal higher, and higher still among regular or repeat gamblers. Almost half (49%) of people who gamble on gaming machines in pubs or clubs pokies at least monthly were found to be at risk. Also at risk are 1 in 4 people (26%) who bet on sports or racing events at least monthly.

While HPA is interested in minimising harm from all modes of gambling, some forms of gambling are associated with harm more than others. Continuous forms in which money can be rapidly reinvested are particularly associated with problem gambling risk (Abbott, 2001). 'Problem gambling' has previously been strongly linked to participation in several types of gambling activities, and in particular to continuous gambling activities such as electronic gaming machines (pokies) (Abbott et al, 2014). The 2010 HLS findings showed a similar association between frequency and type of gambling and risk of 'problem gambling' (Devlin & Walton 2012).

In New Zealand surveys, pokies are the most commonly cited cause of gambling problems (Holland et al, 2017; Rossen, 2015; Tu & Puthipiroj, 2017). Other continuous forms of gambling include track betting, casino table games and some internet games. As noted, the 2016 HLS findings indicate that approximately half (49%) of the people who played pokie machines in pubs or

clubs at least once a month reported at least some level of risk of gambling harm, as assessed by the PGSI. Over one quarter (26%) of people who bet on races or sports at least monthly had at least some level of gambling harm.

In the current study, 78% of respondents reported they thought that some forms of gambling were potentially more harmful than others. This is significantly lower than the proportion in 2010 (87%), but not significantly different to 2014 (71%). Predictors for holding the belief that some types of gambling are more harmful than others were ethnicity and number of gambling activities participated in by the respondent over the past year. Māori (84%) and people of European/Other ethnicity (84%) were more likely to think that some types of gambling are more likely to "attract people into playing more often, or for more money than they should", compared with Pacific (75%) and Asian (69%) people.

The number of gambling activities participated in by the respondent was also associated with a greater probability of holding the belief that some modes of gambling are more harmful than others.

Gambling more than intended was associated with gender (male) and being a person with a high PGSI score, and one who has participated in several gambling activities. Moderate-risk/problem gamblers were more likely to have participated in four or more gambling activities when compared with non-problem and low-risk gamblers. These findings are consistent with previous surveys.

The findings of the 2016 HLS mirror those of earlier work (MoH, 2009; Holland et al, 2017; Abbott et al, 2014) which found that people living in more deprived areas, Māori and Pacific ethnicities were at greater risk of 'problem gambling' than those of other ethnicities. Māori and Pacific peoples are more highly represented in neighbourhoods of high deprivation.

More Māori respondents than non-Māori had experienced someone close to them gambling more than intended, but there has been a decline over time for both groups. The proportion for Māori has dropped significantly from 60% in 2006/07 to 25% in 2016, but has not changed significantly from 2014.

Among those who reported that someone close to them had gambled more than intended in the previous 12 months, two-thirds (65%) reported the person had done so on gaming machines or pokies. This included 53% of those who mentioned gaming machines or pokies at a pub or club, and 12% who mentioned gaming machines or pokies at a casino.

Respondents who lived in areas of moderate deprivation (13%) and those who lived in areas of high deprivation (14%) were significantly more likely to report that they were impacted by someone else's gambling compared with those who lived in low deprivation (8%).

The predictors of household arguments about time or money spent on betting or gambling were gender, ethnicity, PGSI and number of gambling activities the respondent had participated in. Females (11%) tended to report experiencing arguments about gambling issues more than males (9%).

Not unexpectedly, moderate-risk and problem gamblers were significantly more likely (49%) to report that they had experienced an argument in their household about gambling, when compared with non-gamblers (7%).

To provide further contextual information, respondents who had experienced at least one household harm in the past 12 months were also asked about the type of gambling activities these events occurred most with. The most commonly mentioned form of gambling activity associated with household harm was gaming machines in pubs/clubs (48%).

Overall, 6% of participants reported experiencing at least one household harm (eg, an argument or going without due to gambling) in the past 12 months. This equates to an estimated 214,000 people, which is clearly a significant impact.

As with the 2014 HLS findings, risk of gambling problems is strongly associated with smoking status. Current smokers were significantly more likely to gamble with some level of risk compared with those who reported never smoking. The rate of risky gambling among past-smokers was also significantly higher compared with those who had never smoked.

In 2016, 4 in 5 people were aware of gambling help services in 2016. The awareness of gambling help services has a significant decreasing time trend between 2006/07 and 2016, but the decrease is only slight. In 2006/07, the proportion of respondents who were aware of any of the listed services (85%) was at its highest. It remained fairly constant between 2006/07 and 2010 and dropped to its lowest value in 2012 (76%). It rose again in 2016 to 83%, which is significantly higher than 2014 (78%) but not significantly different to 2006/07.

There is an overall decreasing time trend in the belief that some forms of gambling were socially undesirable, and this is driven by a high proportion in 2010 (64%). The proportion in 2016 is significantly lower than 2010, but not significantly different to 2014 (53%). Responses regarding which gambling activities respondents viewed as socially undesirable were collected in 2010, 2012, 2014 and 2016. There has been virtually no change in the view that pokies in casinos is a harmful activity since 2012; the prevalence has been around the 2016 value of 50%. However, there was a substantial increase between 2010 (when the proportion was 34%) and 2012. There has been a steady decreasing trend in the opinion that pokies in pubs or clubs is a socially undesirable activity. The prevalence of this opinion decreased from 74% in 2010 to 59% in 2016.

In 2010 and 2014, around 68% of respondents believed that playing pokies at a pub or club is more harmful than other forms of gambling. This belief dropped to 60% in the 2016 HLS. The second and third most harmful activities were believed to be Lotto tickets including Keno, Strike, Powerball and Instant Kiwi/scratch tickets, (57%) and gaming machines at casinos (48%).

The proportion of respondents who believe that raising money through gambling does more harm than good in the community has decreased over time. However, the proportion of respondents who believe it does more good than harm is also decreasing with time, at the same rate. This is because of an increasing time trend of neutral responses (*does equal good and harm* or ***don't***

know), from 20% in 2006/07 to 30% in 2016. This suggests there is decreasing awareness of the role of raising money through gambling in the community.

Views about raising money through gambling varied by age, education level, ethnicity, and deprivation index. Those aged 18-24 years (79%) and those aged 25-44 years old (72%) were more likely to agree that raising money through gambling is harmful than those aged 45 years and over. Māori (71%), Pacific (84%) and Asian peoples (80%) were significantly more likely to think that raising money through gambling was harmful than European/other (60%). Those in low deprivation areas were more likely than those in moderate deprivation areas to think that it was harmful.

The 2016 findings show that there was a significantly higher proportion of respondents (50%) who were not at all concerned with the level of gambling in their community. The degree of concern varies with respect to ethnicity, education level, and neighbourhood deprivation. Those with higher education levels were more likely to express concern; as were Māori and Pacific peoples. Those in high deprivation areas were also more likely to be concerned.

The HPA's behaviour change programme encourages at-risk gamblers to check their gambling. 'Checking in' about gambling (ie, considering whether gambling was still "just for fun") was significantly predicted by the PGSI score and the number of gambling activities participated in. At-risk gamblers are more likely to check in about their gambling than non-problem gamblers: 19% of low-risk gamblers and 71% of moderate-risk/problem gamblers reported that they had 'checked in' about their gambling. People with involvement in many gambling activities were also more likely to 'check in' about their gambling.

When asked what action they would take if concerned about their own gambling, 29% said they would talk to family/friends, followed by calling an 0800 helpline (17%). The majority of respondents (84%) had heard of at least one service to help people who gamble too much. Accessing gambling support services was predicted by age (over 45 years), ethnicity, high deprivation index, high level of education, and those who gamble with some level of risk.

In 2016, 1 in 2 respondents (50%) reported that they had seen advertising about gambling harm. Most of these respondents reported that they saw the advertising on television (87%), followed by radio (20%), internet (9%) gambling venues (7%), and social media (6%). Those of Māori and European/Other ethnicity were more likely to have seen or heard gambling advertisements. The number of gambling activities participated in was also associated with greater probability of having seen or heard advertising about harmful gambling.

Respondents were also asked whether they had seen any advertising that promoted gambling. In 2016, internet games were the most commonly recalled forms of pro-gambling advertising (increased from 17% in 2010 to 27% in 2016), followed by advertising for betting on horse or dog races, and betting on sports events. Infrequent gamblers were significantly more likely to buy more Lotto tickets as a result of advertising for big draws. This potentially has policy implications relating to gambling advertising. These findings accord with previous research that indicates that although

advertising is not highly cited as the main trigger for problematic gambling, it can increase already high levels of gambling or make it difficult for gamblers to cut back (Binde, 2009).

The findings of this report support the current focus of the HPA's education, awareness, and behaviour change programme towards communities that are at particular risk of gambling harms (at-risk gamblers and concerned others) as well as continuing to engage the wider New Zealand population.

8. LIMITATIONS

As with previous work of this type, a principal limitation of the study is that the population prevalence of those categorised as "problem gamblers" or "moderate-risk" gamblers is low. This limits the type of statistical analyses that can reliably be performed, particularly when sub-populations are of interest. The "problem gambler" and "moderate-risk" gamblers were grouped together to increase statistical power for subgroup analyses. It may, however, be the case that "moderate-risk" and "problem gambling" groups differ in systematic ways.

Future studies may be required to profile the characteristics, experience, attitudes and behaviours of problem gamblers to inform future health promotion and intervention development. A potential issue when comparing responses from the HLSs and the GBAS may be that surveys framed as 'gambling surveys' (as the GBAS was) may elicit different reports of harm to those framed as 'health surveys' (Williams and Volberg, 2009). Not least, this is because those choosing not to respond to gambling surveys may systematically differ from those not responding to broader health surveys (eg, non-respondents to gambling surveys might disproportionately be those with gambling problems, or alternatively with minimal interest in gambling).

It is also the case that many of the estimated values in the report have wide confidence intervals, so the point estimates should be interpreted with caution.

9. CONCLUSION

This report provides some encouraging results around the decline in the proportion of New Zealand adults who reported experiencing individual and household-level gambling-related harm in the past 12 months. The point estimate for prevalence of problem gambling is lower than in previous years. It is recommended that a meta-analysis including other New Zealand gambling reports be undertaken to provide greater statistical power and produce a more precise estimate.

While declines in gambling-related harm have been seen at the population level, ethnic disparities in experience of harm remain even after controlling for other demographic factors. Harm amongst

people who regularly play (at least monthly) continuous forms of gambling such as pokies, racing or sports betting is notably high. The questions included in the 2016 survey, particularly those around pokie machines, and emerging online gambling, provide new knowledge and have important implications for health promotion strategies.

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APPENDIX A

Table 10-1 presents the factors that were considered for inclusion in the regression models. See Section 3.9.4 for more information on how the regression models were built.

Table 10-1: Factors considered when fitting multivariate regression models

Variable	Description
Gender	0=male, 1=female
Age	1= 15-17 years old, 2= 18-24 years old, 25-44 years old, 45+ years old
Prioritised ethnicity	1=Māori, 2= Pacific, 3=Asian, 4= Other
Employment status	Employment definition 1: 1=full-time, 2=part-time, 3=homemaker, 4=other (including student, beneficiary, looking for a job, retired and other)
Education	0=none, 1= secondary, 2=trade/certificate/other, 3=undergraduate, 4 = postgraduate
Residential location (area)	1= Upper North Island, 2 = Lower North Island, 3= South Island
Deprivation index	1= score 1-3, 2= score 4-7, 3=score 8-10
Household composition	1=single, 2=couple without children, 3=family with 0-16 yrs old children, 4=other
Household size	1=1-2 people, 2=3-4 people, 3=5+ people
Smoking status	1=never smoked, 2=current smoker, 3= used to smoke
Drinking status	The amount of alcoholic drink that respondents had on one occasion in the last four weeks (0=non-risky drink; 1=risky drinker) • female risky drinker was defined as those who had ***five or more*** drinks • male risky drinker was defined as those who had ***six or more*** drinks