



AUT GAMBLING & ADDICTIONS RESEARCH CENTRE

COMPARING AN ADDITIONAL HIGH-RISK GAMBLER COHORT WITH NATIONAL GAMBLING STUDY HIGH-RISK GAMBLERS

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EXECUTIVE SUMMARY

Background and purpose

The number of moderate-risk and problem gamblers in the National Gambling Study is small

The number of moderate-risk and problem gamblers recruited into the nationally representative National Gambling Study (NGS) was 148. This relatively small number means that some sub-group statistical analyses cannot be performed, which in turn means that we cannot find out about some possibly important aspects to help us to understand risky gambling behaviours and how to reduce associated harms.

An additional group of moderate-risk and problem gamblers was recruited

A group of 106 adult (18 years and older) moderate-risk and problem gamblers was recruited from a casino and via website advertisements in the Auckland, Christchurch, Hamilton and Wellington regions. Self-identified regular gamblers were sought for initial screening. Participants were interviewed in 2014/15 and we were able to re-contact and re-interview 70 one year later in 2015/16.

The purpose of this study is to see if the additional group of moderate-risk and problem gamblers is similar to the moderate-risk and problem gambler group in the NGS

In the interviews, the additional group of participants (the MR/PG cohort) was asked the same questions that were asked of participants in the NGS, and in the same manner (i.e. face-to-face using Computer Assisted Personal Interviewing, generally in their homes). This means that the findings from the two studies can be directly compared to see if there are any differences. If the two groups are similar enough, this means that data can be combined from both the MR/PG cohort and the NGS, which will allow for additional statistical analyses to be performed to help in the understanding of risky gambling behaviours.

Results

The study found that...

There were some differences in the demographic profile of participants based on recruitment methods

One-fifth (19.8%) of the participants were recruited from a casino. The remainder were recruited via website advertisements. Casino recruited participants were more likely to be male (90.5%) than the website recruited participants (67.1%), and were also more likely to identify as Asian (52.4%) compared with website recruited participants (7.1%). Thus, the recruitment method introduced some biases into the MR/PG cohort for the casino recruited participants. Participants recruited via websites were more similar to the population representative NGS moderate-risk/problem gamblers.

The MR/PG cohort were all self-identified regular gamblers. When they were compared with NGS regular moderate-risk/problem gamblers (i.e. those who gambled weekly or more often), the gender distribution was similar though still included more Asian participants.

The MR/PG cohort was similar to the NGS moderate-risk and problem gamblers for most health-related conditions and level of deprivation

The MR/PG cohort was similar to moderate-risk and problem gamblers in the NGS for number and types of major life events experienced, hazardous alcohol consumption, drug use, physical and mental health, psychological distress, quality of life, and individual level of deprivation.

The MR/PG cohort was also similar to the NGS moderate-risk and problem gamblers for most gambling behaviours

The MR/PG cohort was similar to moderate-risk and problem gamblers in the NGS for number of gambling activities participated in, pattern of gambling participation, gambling expenditure, methods to stop gambling too much and help-seeking for gambling problems.

The MR/PG cohort was less likely to smoke tobacco than the NGS moderate-risk and problem gamblers

A larger proportion of the MR/PG cohort did not currently smoke, compared with moderate-risk and problem gamblers in the NGS. The MR/PG cohort were also less likely to have ever smoked 100 cigarettes, ever smoked daily or ever tried to get help to stop smoking.

The MR/PG cohort gambled more frequently than NGS moderate-risk and problem gamblers

Almost all (92.7%) of the MR/PG cohort gambled once a week or more often compared with NGS moderate-risk/problem gamblers of whom less than half (46.1%) gambled this frequently.

The MR/PG cohort was more likely to gamble on certain activities than the NGS moderate-risk and problem gamblers

Differences in participation prevalence in some gambling activities appeared to be due to the MR/PG cohort recruitment methods and self-selection into the study, compared with the population representative NGS moderate-risk/problem gamblers. The MR/PG cohort (website and casino recruited participants) appeared to favour casino gambling, with the website recruited gamblers also reporting a higher preference for betting on horse/dog races at a TAB in person and gambling on non-casino EGMs.

The MR/PG cohort was less likely to change risk level over time than moderate-risk and problem gamblers in the NGS

Over time, participants in the MR/PG cohort were more likely to stay as moderate-risk and problem gamblers than those in the NGS, so fewer transitioned into different risk levels, particularly lower risk levels. Those who transitioned to a lower risk level were more likely to only move one level, and none stopped gambling, compared with moderate-risk and problem

gamblers in the NGS where transitions across more than one risk level were more evident and some stopped gambling.

However, when compared against NGS regular moderate-risk/problem gamblers the two cohorts were similar.

Conclusion

The MR/PG cohort was broadly similar to the NGS moderate-risk/problem gamblers in a majority of gambling behaviours and health-related aspects. There were a few differences in participation on certain gambling activities, as well as in tobacco smoking, and ethnicity. Some of the differences disappeared when the MR/PG cohort was compared with NGS regular gamblers (i.e. those who gambled weekly or more often). This means that there was a recruitment bias based on the selection request for self-identified regular gamblers for the MR/PG cohort. The recruitment one-fifth of the sample from a casino led to a higher proportion of Asian participants in the MR/PG cohort.

Based on our findings, we conclude that it is feasible to combine the MR/PG cohort with the NGS moderate-risk/problem gamblers in order to conduct sub-group analyses, as the two cohorts are similar in the majority of respects. However, as there are some differences between the cohorts, dependent on the analyses being undertaken, weightings may have to be applied to the MR/PG cohort to make it more representative of the general population moderate-risk and problem gamblers.



1 BACKGROUND

The New Zealand National Gambling Study (NGS) is a nationally representative longitudinal survey of adults aged 18 years and older. The purpose of the NGS is to provide information on the prevalence, incidence, nature and effects of gambling in New Zealand. Participants in the NGS were recruited in 2012 (Wave 1), and then re-interviewed annually in 2013 to 2015 (Waves 2 to 4). It is important to note that in 2013 (Wave 2), due to budgetary constraints, attempts were only made to re-contact 5,266 (84%) of the original 6,251 participants meaning that 985 participants (16%) were lost to the study because no re-contact attempt was made. In 2012, there were 148¹ moderate-risk and problem gamblers amongst the 6,251 participants. Subsequently, the number was 75, 55 and 57 in 2013, 2014 and 2015 respectively.

As the number of moderate-risk and problem gamblers in the NGS is relatively small (about two percent of participants), this limits the extent of statistical analyses that can be performed, especially when sub-group analyses are required. Therefore, an additional cohort of 106² adult (aged 18 years and older) moderate-risk and problem gamblers was recruited from gambling venues and via advertisements in 2014/15, and re-assessed in 2015/16.

The cohort was a self-selected convenience sample recruited in Auckland, Christchurch, Hamilton and Wellington from August 2014 to July 2015. From September 2015 to July 2016, 70 participants were re-contacted and re-interviewed (66% response rate). Participants were sought via advertisements placed in the jobs section of a national auction and classifieds website, advertisements on a national employment website (in the volunteer section) and via gambling venues (casino and Class 4³ venues). The four cities were selected as they are the major cities in New Zealand with a range of available gambling opportunities.

The questionnaires used for the additional cohort were the same as those used in Wave 1 (2012) and Wave 2 (2013) of the NGS, so that additional cohort data could be used to supplement NGS data. The questionnaire incorporated a range of measures on gambling participation, gambling strategies and cognitions, gambling attitudes, problem gambling, health and well-being, psychological status, substance use/misuse, life events, social capital/support and demographic information.

Findings from the NGS study to date have been published in a series of six reports. The Wave 1 results are presented in three reports covering an overview of gambling and gambling participation findings (Abbott, Bellringer, Garrett, & Mundy-McPherson, 2014a), gambling harm and problem gambling (Abbott et al., 2014b), and attitudes towards gambling (Abbott et al., 2015a). The Wave 2, Wave 3 and Wave 4 results are detailed in three further reports (Abbott et al., 2015b; Abbott et al., 2016, Abbott et al., 2018).

This report is the seventh in the series. As the results from the additional cohort are compared with data from NGS Wave 1 and Wave 2 data, this report should be read in conjunction with those reports, in particular, report number 1 (Abbott et al, 2014a), report number 2 (Abbott et al., 2014b) and report number 4 (Abbott et al., 2015b).

¹ Numbers weighted for 2013 Census data to make them population representative.

² The target was to recruit 100 moderate-risk and problem gamblers as, combined with the NGS moderate-risk and problem gamblers, this would increase the sample by two-thirds.

³ A Class 4 venue is a gambling venue with electronic gaming machines that is not a casino (e.g. pub and club).

2 STUDY AIM

The purpose for recruiting an additional cohort of moderate-risk and problem gamblers is that they could potentially be combined with the NGS moderate-risk and problem gamblers, giving greater statistical power for the conduct of more robust sub-group analyses than are currently possible from the limited numbers in the NGS.

The main aim of this study was to see if the additional group of moderate-risk and problem gamblers is similar to the moderate-risk and problem gambler group in the NGS.

3 RESEARCH METHODS

3.1 Ethical approval

The Health and Disability Ethics Committees granted ethical approval for the original New Zealand National Gambling Study (NGS) and subsequent amendments. On 29 May 2014 and 13 November 2014 the Committees granted additional approval for the recruitment of the additional cohort of moderate-risk and problem gamblers from gambling venues and via advertisements (Reference: NTY/11/04/040/AM05 and NTY/11/04/040/AM06).

All participants were allocated a code by the research team to protect their identity, and personal identifying information has not been reported. Participants were informed that taking part in the research was voluntary and that they could withdraw at any time, prior to data reporting.

3.2 Survey instrument

The questionnaires⁴ used for the cohort were the same as those used in Wave 1 (2012) and Wave 2 (2013) of the NGS and included:

1. Leisure activities and gambling participation (29 gambling activities)
2. Problem gambling
 - Problem Gambling Severity Index
The nine-item Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001) was used to measure severity of gambling problems in a past 12 month time frame.
 - South Oaks Gambling Screen
The South Oaks Gambling Screen-Revised (SOGS-R) was used to measure lifetime gambling problems (Abbott & Volberg, 2006; Lesieur & Blume, 1987).
 - Help-seeking behaviours
 - Gambling in households
3. Major life events (from checklist of 18 events)
4. Mental health
 - General psychological distress
The Kessler-10 (K-10) questionnaire was included to provide a continuous measure of general psychological distress that is responsive to change over time. It produces a summary measure indicating probability of currently experiencing an anxiety or depressive disorder (Kessler & Mroczek, 1994).
 - Quality of life
Quality of life was assessed by the WHOQoL-8, an eight item version of a widely used measure. This short form has been used in a number of countries and overall performance is strongly correlated with scores from the original WHOQoL instrument (Schmidt, Muhlan & Power, 2005).

⁴ Available from the Gambling and Addictions Research Centre, Auckland University of Technology website: www.aut.ac.nz/garc

5. Alcohol use/misuse
To identify hazardous alcohol consumption or active alcohol use disorders (including alcohol abuse or dependence), a brief version (AUDIT-C, three-item scale) of the Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 1993) was administered.
6. Substance use/misuse
 - Tobacco
 - Other drugs
7. General health conditions (individual questions)
8. New Zealand Individual Deprivation Index (NZiDep)
The New Zealand Index of socio-economic deprivation for individuals was used (eight item index) (Salmond, Crampton, King, & Waldegrave, 2006).
9. Demographics.

3.3 Participant recruitment and interviewing

3.3.1 Recruitment

A convenience sample of participants (adults aged 18 years or older) was sought from gambling venues (casino and Class 4⁵ venues) in Auckland (Central, West and South), and via advertisements in the Auckland, Christchurch, Hamilton and Wellington sections of both a national employment website, and a national auction and classifieds website.

Permission to approach gamblers at casino and Class 4 gambling venues was sought directly from the gambling venue managers and, in the case of Class 4 venues, also from the relevant societies⁶. Where permission was granted, gamblers were approached by researchers in the foyer of the venue or immediately outside the venue. They were informed about the study and if they self-identified as regular gamblers⁷, that they were potentially eligible to take part in the study. Posters advertising the study, with researcher contact details, were also placed in Class 4 venues.

Initially, the plan was to recruit only from gambling venues. However, as this proved to be more difficult than anticipated, the decision was taken to include recruitment via website advertisements.

Advertisements for participants who gambled regularly, were placed in the 'jobs' section of the auction and classifieds website, and in the 'volunteer' section of the employment website. Gamblers interested in taking part in the study, directly contacted the researchers by telephone.

Gamblers who were interested in participating in the study were assessed for gambling risk level via the Problem Gambling Severity Index (PGSI), either face-to-face with a researcher at

⁵ A Class 4 venue is a gambling venue with electronic gaming machines that is not a casino (e.g. pub and club).

⁶ Societies own and operate the electronic gaming machines in venues.

⁷ This criterion was to ensure that only gamblers most likely to be moderate-risk/problem gamblers would undergo the initial assessment.

the site of recruitment (i.e. gambling venue) or by telephone (recruited via advertisement or poster). Participants scoring three or more on the PGSI (i.e. moderate-risk/problem gamblers) were classified as eligible and were invited to take part in the study.

3.3.2 Interviewing

Eligible gamblers who agreed to participate in the study were contacted and interviewed using the same process as in the NGS. Twelve-months after the initial interview, a second interview was completed with participants who had agreed to be, and could be, re-contacted. The procedure is detailed in Report number 1 of the New Zealand National Gambling Study (Abbott, Bellringer, Garrett, & Mundy-McPherson, 2014a). In brief, the main aspects of the interview process were that:

- Interviews were conducted face-to-face with respondents at a location of their choice (e.g. in their homes or in public places such as a library or café).
- Interviews were conducted using Computer-Assisted Personal Interviewing (CAPI) software (i.e. interviewers used laptop computers to administer the interview).
- The initial interview duration ranged from 31 minutes to 155 minutes. The follow-up interview duration was between 24 and 195 minutes.
- A \$40 recompense was given to participants on completion of each interview.

3.4 Survey population

3.4.1 Sample size

From August 2014 to July 2015, a self-selected convenience sample of 106 moderate-risk/problem gamblers (the MR/PG cohort) was interviewed face-to-face. From September 2015 to July 2016, 70 participants were re-contacted and re-interviewed (66% response rate).

3.4.2 Sample composition by recruitment site

Three-quarters (78.3%) of the MR/PG cohort were recruited from the auction and classifieds website, and one-fifth (19.8%) from a casino. Two percent were recruited from the employment website. Attempted recruitment at Class 4 venues did not lead to participation by any gamblers (Table 1).

Table 1: Recruitment site

	2014/15	
	n	(%)
National auction and classifieds website	83	(78.3)
Casino	21	(19.8)
National employment website	2	(1.9)
Class 4 venue	0	-
<i>Total</i>	<i>106</i>	

3.4.3 Sample composition by gambling risk level

Of the 106 participants, slightly more than half (55.7%) were problem gamblers and slightly less than half (44.3%) were moderate-risk gamblers (Table 2).

Table 2: Gambling risk level of participants in 2014/15 and 2015/16

Gambling risk level	2014/15	
	n	(%)
Non-problem gambler	-	
Low-risk gambler	-	
Moderate-risk gambler	47	(44.3)
Problem gambler	59	(55.7)
<i>Total</i>	<i>106</i>	

3.4.4 Sample composition by gender and age groups

Almost three-quarters (71.7%) were male and slightly more than one-quarter (28.3%) were female. A majority (72.6%) of the participants were aged 18 to 39 years, about one-fifth (18.9%) were aged 40 to 59 years, and the remainder were aged 60 or more years (8.5%) (Table 3).

Table 3: Gender and age of participants in 2014/15 and 2015/16

Gender and age	2014/15	
	n	(%)
Gender		
Male	76	(71.7)
Female	30	(28.3)
<i>Total</i>	<i>106</i>	
Age groups[†]		
18 - 39 years	77	(72.6)
40 - 59 years	20	(18.9)
60+ years	9	(8.5)
<i>Total</i>	<i>106</i>	

[†] Age recorded in 2014/15

3.4.5 Sample composition by ethnicity

Slightly more than half identified as European/Other (53.8%). Māori comprised 23.6% of the sample. The proportions of Pacific and Asian participants were lower at 6.6% and 16%, respectively (Table 4).

Table 4: Ethnicity of participants in 2014/15 and 2015/16

Ethnic group [†]	2014/15	
	n	(%)
European/Other	57	(53.8)
Māori	25	(23.6)
Pacific	7	(6.6)
Asian	17	(16.0)
<i>Total</i>	<i>106</i>	

[†] Prioritised ethnicity - respondents who identified with more than one of the four broad ethnic groups have been included in only one ethnic group using a prioritisation of Māori then Pacific then Asian then European/Other.

3.5 Data analysis

3.5.1 Attrition analyses

Attrition analyses were conducted by examining 2014/15 characteristics with frequencies and proportions, then examining subsequent participation for 2015/16. Pearson chi squared test for association (and resulting P-value) between participants and non-participants for 2015/16 are displayed in Appendix 1.

3.5.2 Descriptive statistics

Data analysis includes stratified results among moderate-risk gamblers and problem gamblers, as well as combined results. Percentages and 95% confidence intervals, using a logit transformation, were calculated.

Findings from the MR/PG cohort are reported with commentary on the similarities or differences from moderate-risk/problem gamblers in the NGS. The comparison is made between the baseline data from the MR/PG cohort and the baseline (Wave 1) NGS data because the two participant cohorts completed the same questionnaire. Where changes over time are reported, the comparison is made between the two waves of the MR/PG cohort and with Wave 1 and Wave 2 NGS data, again because the same questionnaires were used.

For some of the analyses, comparisons are made not only between the MR/PG cohort and moderate-risk/problem gamblers in the NGS but also between the MR/PG cohort and *regular* moderate-risk/problem gamblers in the NGS. Regular gamblers are those who gamble once a week or more often. This latter comparison was made if differences were identified between the MR/PG cohort and NGS moderate-risk/problem gamblers, to see if the differences were due to the frequency of gambling. The majority of the MR/PG cohort were regular gamblers as they were only invited to participate if they self-identified as such⁸.

For other analyses, in order to ascertain if recruitment method accounted for observed differences, the MR/PG cohort was split into participants who were recruited from a casino and participants who were recruited via website advertising, and compared with moderate-risk/problem gamblers in the NGS. This comparison was made if differences were found between

⁸ This criterion was to ensure that only gamblers most likely to be moderate-risk/problem gamblers would undergo the initial assessment.

the overall MR/PG cohort and the NGS where the difference was not explained by frequency of gambling.



4 RESULTS

For ease of reading this chapter, comparison NGS tables have not been included if they are present in a previous NGS report. If they were to be presented in the current report they would almost double the number of presented tables and the length of the report, making it unwieldy and unfriendly for the reader. Those NGS results tables are presented in report numbers 1 and 2 of the NGS (Abbott et al., 2014a, and Abbott et al., 2014b, respectively) and report number 4 (Abbott et al., 2015b), which should be read in conjunction with this report. Where relevant comparison NGS tables are not available in a previous NGS report, they are presented in the current report within appendices (unless detailed otherwise).

4.1 Attrition analyses

One-hundred and six participants were interviewed in 2014/2015 forming the MR/PG cohort, with 70 participants re-interviewed one year later in 2015/16. Attrition analyses were conducted to investigate sample differences in sociodemographic and gambling data, from 2014/15 to 2015/16 (Appendix 1). Chi squared tests showed no significant differential attrition meaning that the samples remained similar over time; however, the lack of a significant difference may have been due to the relatively small numbers of people in the sample.

The attrition rate for the MR/PG cohort was one-third (34%), which on face value appears better than the attrition rate for the NGS, which was almost half (49%). However, as previously mentioned, it is important to remember that in Wave 2 of the NGS, due to budgetary constraints, attempts were only made to re-contact 84% of the original participants meaning that 16% were lost to the study because no re-contact attempt was made.

4.2 Current and lifetime moderate-risk and problem gambling

4.2.1 Current and lifetime moderate-risk and problem gambling

Slightly more than half (55.7%) of the MR/PG cohort at baseline (2014/15) were *past year* (i.e. current) problem gamblers, and slightly less than half (44.3%) were past year moderate-risk gamblers, as measured by the Problem Gambling Severity Index (PGSI) (Table 5).

Table 5: Past year moderate-risk/problem gambling by Problem Gambling Severity Index

Gambling risk level	n	%	(95% CI)
Moderate-risk gambler	47	44.3	(35.0, 54.0)
Problem gambler	59	55.7	(46.0, 65.0)

When examined using the South Oaks Gambling Screen-Revised (SOGS-R), which provides *lifetime* estimates, three-quarters (76.4%) of the MR/PG cohort at baseline were probable pathological gamblers, 17% were problem gamblers and 6.6% were non-problem gamblers (Table 6).

Table 6: Life-time pathological and problem gambling by South Oaks Gambling Screen-Revised

Gambling risk level	n	%	(95% CI)
Non-problem gambler	7	6.6	(3.1, 13.4)
Problem gambler	18	17.0	(10.9, 25.5)
Probable pathological gambler	81	76.4	(67.3, 83.6)

These findings indicate that the MR/PG cohort sample was as intended, that is to say, experiencing higher levels of gambling problems with a majority experiencing high levels of problems in a longer timeframe than just the past year.

4.2.2 Current moderate-risk and problem gambling by gender and ethnicity

Gender

Overall, 71.7% of the MR/PG cohort at baseline was male and 28.3% was female. This gender distribution was similar for those participants who were moderate-risk gamblers as well as those who were problem gamblers (Table 7). The gender imbalance for moderate-risk/problem gamblers overall in the NGS was less distinct with a point estimate of 57.5% for males. However, confidence intervals overlapped between the MR/PG cohort and NGS indicating no real difference (Appendix 2).

When the NGS data were examined for only those moderate-risk/problem gamblers who gambled regularly (i.e. at least once a week), the gender distribution was similar to that for the MR/PG cohort with two-thirds (65.2%) being male and one-third being female (34.8%) (Appendix 2). Thus, the gender distribution for the MR/PG cohort was similar to that of the regular NGS moderate-risk/problem gamblers.

When gender data were examined by recruitment method (casino and website), it was clear that the majority of participants recruited from the casino were male (90.5%), whereas website recruitment was two-thirds male (67.1%) (Table 8). Again, however, confidence intervals overlapped indicating no real difference.

Ethnicity

Slightly more than half (53.8%) of the MR/PG cohort were of European/Other ethnicity; about one-quarter (23.6%) were Māori, 6.6% were of Pacific ethnicity and 16% were of Asian ethnicity. This ethnic distribution was broadly similar for those participants who were moderate-risk gamblers as well as those who were problem gamblers (Table 7). When compared with NGS moderate-risk/problem gamblers, although percentage point estimates varied, confidence intervals overlapped indicating no probable differences between the cohorts (Appendix 2). A similar finding was apparent when the MR/PG cohort was compared against the regular NGS moderate-risk/problem gamblers (Appendix 2).

When ethnicity data were examined by recruitment method, it was noticeable that more than half of the participants recruited from the casino were Asian (52.4%), compared with 7.1% from website recruitment (Table 8).

Thus, recruitment method introduced some biases into the MR/PG cohort. One-fifth of the participants were recruited from a casino and those participants were biased towards males and Asian people. Participants recruited via websites were more similar to the population representative NGS moderate-risk/problem gamblers.

Table 7: PGSI moderate-risk and problem gambling by gender and ethnicity

	Moderate-risk gambler			Problem gambler			Combined problem and moderate-risk gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Gender									
Male	36	76.6	(62.2, 86.7)	40	67.8	(54.7, 78.6)	76	71.7	(62.2, 79.6)
Female	11	23.4	(13.3, 37.8)	19	32.2	(21.4, 45.3)	30	28.3	(20.4, 37.8)
Ethnicity									
European/Other	28	59.6	(44.9, 72.7)	29	49.2	(36.5, 61.9)	57	53.8	(44.1, 63.2)
Māori	9	19.1	(10.2, 33.1)	16	27.1	(17.2, 40.0)	25	23.6	(16.4, 32.7)
Pacific	2	4.3	#	5	8.5	(3.5, 19.0)	7	6.6	(3.1, 13.4)
Asian	8	17.0	(8.6, 30.8)	9	15.3	(8.0, 27.0)	17	16.0	(10.1, 24.5)

Sample too small to enable meaningful confidence interval calculation

Table 8: PGSI combined moderate-risk/problem gambling by gender and ethnicity and recruitment method

	Casino recruitment			Website recruitment			Total sample		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Gender									
Male	19	90.5	(68.4, 97.7)	57	67.1	(56.2, 76.3)	76	71.7	(62.2, 79.6)
Female	2	9.5	#	28	32.9	(23.7, 43.8)	30	28.3	(20.4, 37.8)
Ethnicity									
European/Other	5	23.8	(10.1, 46.4)	52	61.2	(50.3, 71.1)	57	53.8	(44.1, 63.2)
Māori	3	14.3	(4.6, 36.6)	22	25.9	(17.6, 36.4)	25	23.6	(16.4, 32.7)
Pacific	2	9.5	#	5	5.9	(2.4, 13.5)	7	6.6	(3.1, 13.4)
Asian	11	52.4	(31.5, 72.4)	6	7.1	(3.2, 15.0)	17	16.0	(10.1, 24.5)

Sample too small to enable meaningful confidence interval calculation

4.3 Gambling participation

4.3.1 Engagement in different gambling activities

Data are shown in Table 9 and Table 10 for the MR/PG cohort and in Appendix 3 for the NGS moderate-risk/problem gamblers.

Table 9: Past year participation in gambling activities in past 12 months and weekly or more often

Gambling activity	Gambling participation					
	Past year			Weekly or more often		
	n	%	(95% CI)	n	%	(95% CI)
Cards for money (not in casino)	35	33.0	(24.6, 42.7)	11	10.4	(5.8, 17.9)
Poker for money/prizes (commercial venue in NZ)	16	15.1	(9.4, 23.4)	6	5.7	(2.5, 12.2)
Poker for money/prizes (friends/family private residence)	27	25.5	(18.0, 34.8)	2	1.9	#
Poker for money/prizes online	18	17.0	(10.9, 25.5)	6	5.7	(2.5, 12.2)
Bets with friends/workmates for money/prizes	46	43.4	(34.2, 53.1)	7	6.6	(3.1, 13.4)
Text game or competition	19	17.9	(11.7, 26.6)	8	7.5	(3.8, 14.5)
New Zealand raffle/lottery	55	51.9	(42.3, 61.4)	7	6.6	(3.1, 13.4)
Lotto online	18	17.0	(10.9, 25.5)	4	3.8	(1.4, 9.8)
Lotto from a store	83	78.3	(69.3, 85.2)	32	30.2	(22.1, 39.7)
Keno online	3	2.8	(0.9, 8.6)	1	0.9	#
Keno from a store	11	10.4	(5.8, 17.9)	3	2.8	(0.9, 8.6)
Instant Kiwi or other scratch tickets	80	75.5	(66.2, 82.8)	27	25.5	(18.0, 34.8)

Gambling activity	Gambling participation					
	Past year			Weekly or more often		
	n	%	(95% CI)	n	%	(95% CI)
Housie or bingo	10	9.4	(5.1, 16.8)	3	2.8	(0.9, 8.6)
Horse/dog race betting (at the track)	32	30.2	(22.1, 39.7)	0	-	-
Horse/dog race betting (TAB in person)	52	49.1	(39.5, 58.6)	19	17.9	(11.7, 26.6)
Horse/dog race betting (TAB telephone, online, interactive TV)	31	29.2	(21.3, 38.7)	15	14.2	(8.6, 22.3)
Horse/dog race betting (overseas TAB, organisation/ website)	10	9.4	(5.1, 16.8)	1	0.9	#
Sports betting (TAB at event)	27	25.5	(18.0, 34.8)	3	2.8	(0.9, 8.6)
Sports betting (TAB in person)	40	37.7	(28.9, 47.5)	16	15.1	(9.4, 23.4)
Sports betting (TAB telephone, online or interactive TV)	27	25.5	(18.0, 34.8)	9	8.5	(4.4, 15.7)
Sports betting (overseas TAB, organisation/ website)	10	9.4	(5.1, 16.8)	5	4.7	(1.9, 11.0)
Casino table games or EGMs (overseas)	22	20.8	(14.0, 29.7)	0	-	-
Casino table games or EGMs (NZ)	78	73.6	(64.2, 81.2)	25	23.6	(16.4, 32.7)
Casino table games (NZ)	44	41.5	(32.4, 51.2)	13	12.3	(7.2, 20.1)
Casino EGMs (NZ)	65	61.3	(51.6, 70.2)	15	14.2	(8.6, 22.3)
Pub EGMs	79	74.5	(65.2, 82.0)	41	38.7	(29.8, 48.4)
Club EGMs	50	47.2	(37.7, 56.8)	11	10.4	(5.8, 17.9)
Short-term speculative investments	7	6.6	(3.1, 13.4)	1	0.9	#
Overseas internet gambling for money/prizes	15	14.2	(8.6, 22.3)	7	6.6	(3.1, 13.4)

Sample too small to enable meaningful confidence interval calculation

Table 10: Past year participation in gambling activities in past 12 months by recruitment method

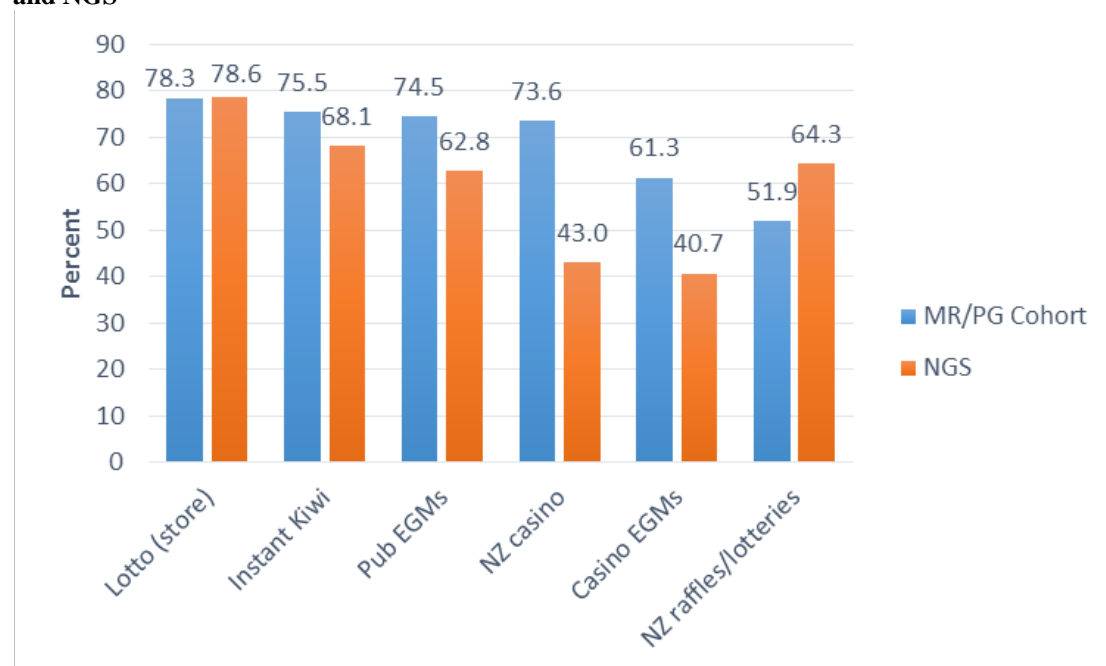
Gambling activity	Gambling participation in past year					
	Casino recruitment			Website recruitment		
	n	%	(95% CI)	n	%	(95% CI)
Cards for money (not in casino)	8	38.1	(20.1, 60.1)	27	31.8	(22.6, 42.5)
Poker for money/prizes (commercial venue in NZ)	2	9.5	#	14	16.5	(9.9, 26.1)
Poker for money/prizes (friends/family private residence)	5	23.8	(10.1, 46.4)	22	25.9	(17.6, 36.4)
Poker for money/prizes online	4	19.0	(7.2, 41.6)	14	16.5	(9.9, 26.1)
Bets with friends/workmates for money/prizes	8	38.1	(20.1, 60.1)	38	44.7	(34.4, 55.5)
Text game or competition	2	9.5	#	17	20.0	(12.7, 30.0)
New Zealand raffle/lottery	7	33.3	(16.6, 55.7)	48	56.5	(45.6, 66.7)
Lotto online	3	14.3	(4.6, 36.6)	15	17.6	(10.8, 27.4)
Lotto from a store	13	61.9	(39.9, 79.9)	70	82.4	(72.6, 89.2)
Keno online	0	-	-	3	3.5	(1.1, 10.6)
Keno from a store	1	4.8	#	10	11.8	(6.4, 20.7)
Instant Kiwi or other scratch tickets	9	42.9	(23.8, 64.4)	71	83.5	(73.9, 90.1)
Housie or bingo	2	9.5	#	8	9.4	(4.7, 17.9)
Horse/dog race betting (at the track)	1	4.8	#	31	36.5	(26.8, 47.4)
Horse/dog race betting (TAB in person)	4	19.0	(7.2, 41.6)	48	56.5	(45.6, 66.7)
Horse/dog race betting (TAB telephone, online, interactive TV)	1	4.8	#	30	35.3	(25.8, 46.2)
Horse/dog race betting (overseas TAB, organisation/ website)	0	-	-	10	11.8	(6.4, 20.7)
Sports betting (TAB at event)	3	14.3	(4.6, 36.6)	24	28.2	(19.6, 38.9)
Sports betting (TAB in person)	7	33.3	(16.6, 55.7)	33	38.8	(28.9, 49.7)
Sports betting (TAB telephone, online or interactive TV)	2	9.5	#	25	29.4	(20.6, 40.1)
Sports betting (overseas TAB, organisation/ website)	1	4.8	#	9	10.6	(5.5, 19.3)
Casino table games or EGMs (overseas)	4	19.0	(7.2, 41.6)	18	21.2	(13.7, 31.3)
Casino table games or EGMs (NZ)	20	95.2	(72.2, 99.4)	58	68.2	(57.5, 77.4)

Gambling activity	Gambling participation in past year					
	Casino recruitment			Website recruitment		
	n	%	(95% CI)	n	%	(95% CI)
Casino table games (NZ)	15	71.4	(48.8, 86.7)	29	34.1	(24.7, 45.0)
Casino EGMs (NZ)	8	38.1	(20.1, 60.1)	57	67.1	(56.2, 76.3)
Pub EGMs	10	47.6	(27.6, 68.5)	69	81.2	(71.3, 88.2)
Club EGMs	5	23.8	(10.1, 46.4)	45	52.9	(42.2, 63.4)
Short-term speculative investments	2	9.5	#	5	5.9	(2.4, 13.5)
Overseas internet gambling for money/prizes	3	14.3	(4.6, 36.6)	12	14.1	(8.1, 23.4)

Sample too small to enable meaningful confidence interval calculation

Gambling activities participated in by half or more of the MR/PG cohort at least once in the past year at baseline were Lotto, Instant Kiwi or other scratch tickets, pub electronic gaming machines (EGMs), New Zealand casino gambling (EGMs and table games), casino EGMs, and New Zealand (NZ) raffles/lotteries. This varied slightly from the NGS moderate-risk/problem gamblers; for that cohort, only about two-fifths gambled on NZ casino gambling (EGMs and table games) and casino EGMs (Figure 1). A similar finding was noted when the MR/PG cohort was compared against the NGS regular moderate-risk/problem gamblers.

Figure 1: Past year participation in the most common gambling activities for the MR/PG cohort and NGS



Higher percentages of the MR/PG cohort gambled on the following activities at least once in the past year compared with moderate-risk/problem gamblers in the NGS: online poker for money/prizes; online Lotto; horse/dog race betting at a Totalisator Agency Board venue (TAB) in person, at a TAB via telephone, online or interactive television, or at an overseas TAB, organisation or website; sports betting at a TAB in person, or at a TAB via telephone, online or interactive television; overseas casino table games/EGMs; NZ casino table games/EGMs; NZ casino table games; NZ casino EGMs; club EGMs; short-term speculative investments and overseas internet gambling for money/prizes. However, when the MR/PG cohort was compared against only regular NGS moderate-risk/problem gamblers, the differences were no longer apparent for online poker and online Lotto, and overseas casino gambling (Table 11).

Thus the MR/PG cohort differed from NGS moderate-risk/problem gamblers in regard to past year participation on some gambling activities notably online poker; online Lotto; horse/dog race betting in person at a TAB; remote horse/dog race betting and sports betting; overseas casino table games/EGMs gambling; NZ casino table games; NZ casino EGMs; club EGMs; short-term speculative investments and overseas internet gambling. However, when the MR/PG cohort was compared against regular NGS gamblers only those activities underlined in the previous list showed differences in participation prevalence.

Higher percentages of the MR/PG cohort also gambled on the same activities weekly or more often, compared with the NGS moderate-risk/problem gamblers, with the exception of online poker and online Lotto, remote horse/dog race betting, overseas casino gambling, club EGMs, and short-term speculative investments. Of note is that a higher proportion of the MR/PG cohort gambled weekly or more often on Instant Kiwi or other scratch tickets, and on remote sports betting, compared with the NGS moderate-risk/problem gamblers. However, when the MR/PG cohort was compared against only regular NGS moderate-risk/problem gamblers, the differences only remained for horse/dog race betting and sports betting at a TAB via telephone, online or interactive television; sports betting at a TAB in person and remotely; NZ casino gambling; NZ casino table games; NZ casino EGMs; and overseas internet gambling (Table 11).

Table 11: Comparing MR/PG cohort gambling activity participation with all and regular NGS moderate-risk/problem gamblers

Gambling activity	Past year gambling participation					
	Past year			Weekly or more often		
	MR/PG cohort	NGS	NGS regular	MR/PG cohort	NGS	NGS regular
Poker for money/prizes online	↑	↓	=			
Lotto online	↑	↓	=			
Instant Kiwi or other scratch tickets				↑	↓	=
Horse/dog race betting (TAB in person)	↑	↓	↓	↑	↓	=
Horse/dog race betting (TAB telephone, online, interactive TV)	↑	↓	=	↑	↓	↓
Horse/dog race betting (overseas TAB, organisation/ website)	↑	↓	↓			
Sports betting (TAB in person)	↑	↓	↓	↑	↓	↓
Sports betting (TAB telephone, online or interactive TV)	↑	↓	↓	↑	↓	↓
Sports betting (overseas TAB, organisation/ website)				↑	↓	↓
Casino table games or EGMs (overseas)	↑	↓	=			
Casino table games or EGMs (NZ)	↑	↓	↓	↑	↓	↓
Casino table games (NZ)	↑	↓	↓	↑	↓	↓
Casino EGMs (NZ)	↑	↓	↓	↑	↓	↓
Pub EGMs				↑	↓	=
Club EGMs	↑	↓	↓			
Short-term speculative investments	↑	↓	↓			
Overseas internet gambling for money/prizes	↑	↓	↓	↑	↓	↓

Table key

- ↑ Participation was higher for the MR/PG cohort than for the NGS and regular NGS moderate-risk/problem gamblers
- ↓ Participation was lower for the NGS and regular NGS moderate-risk/problem gamblers than for the MR/PG cohort
- = Participation was similar between the regular NGS moderate-risk/problem gamblers and the MR/PG cohort

There were also some differences due to the different recruitment methods and self-selection into the MR/PG cohort (Table 10). Almost all of the casino recruited MR/PG cohort (95.2%, n = 20 of 21) and two-thirds (68.2%) of the website recruited MR/PG cohort reported NZ casino gambling at least once in the past year. However, whilst 67.1% of the website recruited MR/PG cohort reported casino EGM gambling, only 38.1% of the casino recruited gamblers reported this. For casino table gambling the reverse was noted with 71.4% of casino recruited gamblers and 34.1% of website recruited gamblers reporting this. The website recruited MR/PG cohort were also more likely than the casino recruited gamblers to report horse/dog race betting at a TAB in person (56.5% vs. 19%), gambling on pub EGMs (81.2% vs. 47.6%) and gambling on Instant Kiwi or other scratch tickets (83.5% vs. 42.9%) (Figure 2).

When MR/PG cohort past year participation in the various gambling activities by casino or website recruitment was compared with NGS moderate-risk/problem gamblers, a larger proportion of website recruited gamblers, compared with NGS, bet on horse/dog races at a TAB in person (56.5% vs. 18.3%), and gambled on NZ casino EGMs (67.1% vs. 40.7%) and club EGMs (52.9% vs. 23.4%). Both casino and website recruited participants were more likely to gamble at NZ casinos (95.2% and 68.2% vs. 43.0%) and specifically on NZ casino table games (71.4% and 34.1% vs. 13.4%) (Figure 2). Thus, it appears that *the differences between the cohorts are due to the different recruitment methods and self-selection into the MR/PG cohort.*

Figure 2: Past year participation in gambling activities for the MR/PG cohort by recruitment method and NGS



There were no other notable differences in past year gambling between the MR/PG cohort and moderate-risk/problem gamblers in the NGS.

4.3.2 Number of gambling activities participated in

At baseline, a majority of the MR/PG cohort had gambled on four or more activities (87.8%) in the prior year; a few had gambled on two (2.8%) or three (9.4) activities. None of the MR/PG cohort gambled on only one activity (Table 12). This finding is similar to that noted in the profile of the NGS Wave 1 moderate-risk and problem gamblers whereby a majority also

gambled on four or more activities in the prior year (Report #2, Figure 6). However, in the NGS a small proportion of moderate-risk (3.0%) and problem gamblers (1.9%) also reported gambling on only one activity.

Table 12: Number of gambling activities participated in during past year

	n	%
1	0	-
2	3	2.8
3	10	9.4
4 - 6	27	25.5
7 - 9	46	43.4
10 or more	20	18.9

4.3.3 Gambling frequency

Almost three-quarters of the MR/PG cohort gambled very frequently during the prior year, two or three times a week (36.8%) or four or more times a week (36.8). A further fifth (19.1%) gambled once a week with the remaining participants (less than 10%) gambling less frequently than weekly (Table 13). *This profile of predominantly very frequent gambling differed slightly from the frequency profile of the NGS moderate-risk/problem gamblers of whom only one-quarter gambled very frequently (4.8% four or more times a week, 21.5% two or three times a week).* A similar proportion of the NGS moderate-risk/problem gamblers gambled weekly (19.8%) whilst *two-fifths (43.8%) gambled less frequently; this included 11.3% who gambled less often than monthly, a frequency which was not seen amongst the MR/PG cohort* (Table 13). The differences between the cohorts are expected based on the MR/PG recruitment criterion for self-reported regular gamblers.

Table 13: Gambling frequency during past year

	MR/PG cohort		NGS all moderate-risk/ problem gamblers	
	n	%	n	%
Four times a week or more	39	36.8	7	4.8
Two or three times a week	39	36.8	32	21.5
Once a week	18	19.1	44	19.8
Once every two weeks	7	6.6	19	12.8
Once every three weeks	1	0.9	11	7.3
Once a month	2	1.9	18	12.4
Less often than monthly	0	-	17	11.3

4.3.4 Pattern of gambling participation

Overall, a majority (85.8%) of the MR/PG cohort were regular continuous⁹ gamblers at baseline and much lower percentages were regular non-continuous gamblers¹⁰ or infrequent gamblers¹¹ (Table 14). This finding is similar to the NGS where, in Wave 1, higher proportions of regular continuous gamblers, compared with regular non-continuous gamblers, were moderate-risk or problem gamblers (Report #2, Table 17).

Table 14: Pattern of gambling participation in past year

Gambling pattern	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Infrequent	9	19.1	(10.2, 33.1)	3	5.1	(1.6, 14.9)	12	11.3	(6.5, 19.0)
Regular non-continuous	2	4.3	#	1	1.7	(0.2, 11.4)	3	2.8	(0.9, 8.6)
Regular continuous	36	76.6	(62.2, 86.7)	55	93.2	(83.1, 97.5)	91	85.8	(77.7, 91.4)

Sample too small to enable meaningful confidence interval calculation

4.4 Gambling expenditure

Overall, a majority (70.8%) of the MR/PG cohort at baseline spent more than \$500 on gambling in a typical month, and a further 27.4% spent between \$101 and \$500. There is some indication that a lower percentage of moderate-risk gamblers spent more than \$500 and a higher percentage spent between \$101 and \$500, compared with problem gamblers, although confidence intervals overlapped indicating that a real difference was unlikely (Table 15).

A low percentage (4.3%) of moderate-risk gamblers typically spent between \$51 and \$100 gambling per month; this finding was not noted for problem gamblers. None of the MR/PG cohort typically spent \$50 or less on gambling per month (Table 15).

In the NGS in Wave 1, the prevalence of moderate-risk and problem gamblers increased with increasing typical monthly gambling expenditure, and very few moderate-risk and problem gamblers typically spent \$50 or less per month (less than 1% in each of the expenditure categories less than \$50) (Report #2, Table 19). This indicates that expenditure by the MR/PG cohort followed a similar pattern to that expected from the NGS.

⁹ In this study, Lotto, other lotteries, raffles and making bets with friends or workmates were classified as non-continuous activities. All other activities were classified as continuous. Regular continuous gamblers were defined as people who took part in one or more continuous activities during the past week. They could also have taken part in non-continuous activities.

¹⁰ Regular non-continuous gamblers were defined as people who took part weekly or more often in one or more non-continuous forms of gambling and who did not participate this often in any continuous activity. They were not, however, excluded if they participated less often than weekly.

¹¹ Infrequent gamblers gambled less than weekly in any particular gambling activity.

Table 15: Typical monthly gambling expenditure in past year

Expenditure	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
\$1 - \$50	0	-	-	0	-	-	0	-	-
\$51 - \$100	2	4.3	#	0	-	-	2	1.9	#
\$101 - \$500	18	38.3	(25.5, 53.0)	11	18.6	(10.5, 30.8)	29	27.4	(19.6, 36.8)
\$501 or more	27	57.4	(42.9, 70.8)	48	81.4	(69.2, 89.5)	75	70.8	(61.3, 78.7)

Sample too small to enable meaningful confidence interval calculation

4.5 Methods to stop gambling too much

4.5.1 Methods to stop gambling too much

The MR/PG cohort at baseline reported a range of methods that were employed to stop gambling too much (Table 16). Overall, the most commonly reported methods were: ‘setting a dollar figure before leaving home/set a limit’ (38.7%), ‘separating money for betting from other money, and stopping when it is used up’ (20.8%), ‘leaving ATM and credit cards at home’ (17.9%), ‘setting a time limit’ (12.3%), and ‘avoiding places that have betting or gambling as an attraction’ (11.3%). For the first four of these methods, the proportions using the method were similar between the moderate-risk and problem gamblers. However, a higher percentage of problem gamblers (16.9%) reported ‘avoiding places that have betting or gambling as an attraction’ than moderate-risk gamblers (4.3%). The overall pattern of findings was similar to that seen amongst moderate-risk and problem gamblers in the NGS in Wave 1 (Report #2, Table 27), although the point estimate percentages were higher for the NGS.

Other methods were used by less than 10% of the MR/PG cohort, similar to the moderate-risk and problem gamblers in the NGS. Also similar to the NGS, the MR/PG cohort were unlikely to report the following methods: ‘don't do it/don't gamble/against gambling/religious reasons/waste of time’, ‘waste of money/too mean, miserly to waste money’, ‘do other things/busy doing other things’, ‘only buy if the prize is big’, ‘knowing I'll lose/chances of winning are low’ and ‘buy to support charity/good cause’.

Table 16: Use of methods to stop gambling too much in past year

Method	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Set a dollar figure before leaving home/set a limit	21	44.7	(31.0, 59.2)	20	33.9	(22.9, 47.0)	41	38.7	(29.8, 48.4)
Getting someone you trust to manage the money	2	4.3	#	6	10.2	(4.6, 21.1)	8	7.5	(3.8, 14.5)
Separating money for betting from other money, and stopping when it is used up	11	23.4	(13.3, 37.8)	11	18.6	(10.5, 30.8)	22	20.8	(14.0, 29.7)
Leaving ATM and credit cards at home	7	14.9	(7.2, 28.4)	12	20.3	(11.8, 32.7)	19	17.9	(11.7, 26.6)
Setting a time limit	4	8.5	(3.2, 20.9)	9	15.3	(8.0, 27.0)	13	12.3	(7.2, 20.1)
Avoiding places that have betting or gambling as an attraction	2	4.3	#	10	16.9	(9.3, 28.9)	12	11.3	(6.5, 19.0)
Don't do it/don't gamble/against gambling/religious reasons/waste of time	0	-	-	0	-	-	0	-	-
Self-control/self-discipline/ common sense/check bank account/know when to stop/ know when to walk away	1	2.1	#	2	3.4	#	3	2.8	(0.9, 8.6)
Waste of money/too mean, miserly to waste money	1	2.1	#	0	-	-	1	0.9	#
Do other things/busy doing other things	0	-	-	1	1.7	#	1	0.9	#
Only buy if prize is big	0	-	-	0	-	-	0	-	-
Can't afford it/don't buy if I don't have the money/only if I can afford it	1	2.1	#	3	5.1	(1.6, 14.9)	4	3.8	(1.4, 9.8)
Knowing I'll lose/chances of winning are low	0	-	-	1	1.7	#	1	0.9	#
Aware of gambling addiction/problems	1	2.1	#	4	6.8	(2.5, 16.9)	5	4.7	(1.9, 11.0)
Buy to support charity	0	-	-	0	-	-	0	-	-
Prioritise my spending/ household budgeting/rather spend on other things/think of family	2	4.3	#	3	5.1	(1.6, 14.9)	5	4.7	(1.9, 11.0)
Others	5	10.6	(4.4, 23.4)	14	23.7	(14.5, 36.4)	19	17.9	(11.7, 26.6)

Sample too small to enable meaningful confidence interval calculation

4.5.2 Number of methods used to stop gambling too much

Overall, about two-fifths (43.4%) of the MR/PG cohort at baseline reported not using any methods to stop gambling too much, and about one-quarter (26.4%) only used one method. The

remainder reported using between two and five methods (Table 17). The proportion of problem gamblers was generally similar to the proportion of moderate-risk gamblers reporting using each number of methods. The proportions were also similar to those reported by moderate-risk and problem gamblers in the NGS in Wave 1 (Report #2, Table 28). Although some point estimates appeared to be different, this was probably an artefact of small sample size in the NGS, particularly for problem gamblers, as confidence intervals overlapped across the measures in both studies.

Table 17: Number of methods used to stop gambling too much in past year

Number of methods	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
0	20	42.6	(29.2, 57.1)	26	44.1	(31.8, 57.1)	46	43.4	(34.2, 53.1)
1	14	29.8	(18.3, 44.5)	14	23.7	(14.5, 36.4)	28	26.4	(18.8, 35.8)
2	5	10.6	(4.4, 23.4)	5	8.5	(3.5, 19.0)	10	9.4	(5.1, 16.8)
3	5	10.6	(4.4, 23.4)	5	8.5	(3.5, 19.0)	10	9.4	(5.1, 16.8)
4	1	2.1	#	6	10.2	(4.6, 21.1)	7	6.6	(3.1, 13.4)
5	2	4.3	#	2	3.4	(0.8, 12.8)	4	3.8	(1.4, 9.8)
Missing	0	-	-	1	1.7	#	1	0.9	#

Sample too small to enable meaningful confidence interval calculation

4.6 Major life events

At baseline, the MR/PG cohort was asked to report the major life events they had experienced in the prior 12 months, from a list of 18 events. Overall, the lowest proportion reported not experiencing any major life events (8.5%), with between 11.3% and 19.8% reporting experiencing one to four events. Almost one-third (29.2%) of the MR/PG cohort reported experiencing five or more events. On average, problem gamblers reported experiencing 3.3 events compared with 2.8 events for moderate-risk gamblers (Table 18). These findings are similar to those noted for moderate-risk and problem gamblers in the NGS in Wave 1 (Report #2, Table 32).

Table 18: Number of major life events experienced in past year

Number of life events	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
None	6	12.8	(5.8, 25.9)	3	5.1	(1.6, 14.9)	9	8.5	(4.4, 15.7)
1	8	17.0	(8.6, 30.8)	8	13.6	(6.8, 25.1)	16	15.1	(9.4, 23.4)
2	6	12.8	(5.8, 25.9)	6	10.2	(4.6, 21.1)	12	11.3	(6.5, 19.0)
3	7	14.9	(7.2, 28.4)	14	23.7	(14.5, 36.4)	21	19.8	(13.2, 28.6)
4	8	17.0	(8.6, 30.8)	9	15.3	(8.0, 27.0)	17	16.0	(10.1, 24.5)
5+	12	25.5	(15.0, 40.0)	19	32.2	(21.4, 45.3)	31	29.2	(21.3, 38.7)
<i>Mean</i>		2.8	(2.3, 3.3)		3.3	(2.9, 3.7)		3.1	(2.8, 3.4)

Similar proportions of the MR/PG cohort experienced each individual major life event to approximately the same extent as reported in the NGS (Report #2, Table 32). Overall, the three most reported events were a major change to financial situation (48.1%); troubles with work, boss or superiors (37.7%) and death of someone close (37.7%). Problem gamblers in the

MR/PG cohort more often than moderate-risk gamblers reported an increase in the number of arguments with someone close (40.7% vs. 10.6%) (Table 19).

Table 19: Type of major life events experienced in past year

Life event	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Death of someone close	20	42.6	(29.2, 57.1)	20	33.9	(22.9, 47.0)	40	37.7	(28.9, 47.5)
Divorce/separation	3	6.4	(2.0, 18.3)	5	8.5	(3.5, 19.0)	8	7.5	(3.8, 14.5)
Legal difficulties	6	12.8	(5.8, 25.9)	15	25.4	(15.8, 38.2)	21	19.8	(13.2, 28.6)
Major injury or illness (themselves or someone close)	15	31.9	(20.1, 46.6)	13	22.0	(13.1, 34.6)	28	26.4	(18.8, 35.8)
Marriage or finding a relationship or partner	6	12.8	(5.8, 25.9)	10	16.9	(9.3, 28.9)	16	15.1	(9.4, 23.4)
Troubles with work, boss or superiors	18	38.3	(25.5, 53.0)	22	37.3	(25.8, 50.4)	40	37.7	(28.9, 47.5)
Retirement	3	6.4	(2.0, 18.3)	1	1.7	#	4	3.8	(1.4, 9.8)
Pregnancy or new family additions	6	12.8	(5.8, 25.9)	4	6.8	(2.5, 16.9)	10	9.4	(5.1, 16.8)
Major change to financial situation	16	34.0	(21.8, 48.8)	35	59.3	(46.2, 71.2)	51	48.1	(38.6, 57.7)
Taking on a mortgage, loan or making a big purchase	9	19.1	(10.2, 33.1)	5	8.5	(3.5, 19.0)	14	13.2	(7.9, 21.2)
Increase in number of arguments with someone close	5	10.6	(4.4, 23.4)	24	40.7	(28.8, 53.8)	29	27.4	(19.6, 36.8)
Moving house	19	40.4	(27.3, 55.1)	19	32.2	(21.4, 45.3)	38	35.8	(27.2, 45.6)
Moving to a new town/city	7	14.9	(7.2, 28.4)	8	13.6	(6.8, 25.1)	15	14.2	(8.6, 22.3)
Major change in living or work conditions	9	19.1	(10.2, 33.1)	23	39.0	(27.3, 52.1)	32	30.2	(22.1, 39.7)
Earthquake or natural disaster	0	-	-	1	1.7	#	1	0.9	#
Children/family moving away/children leaving home	1	2.1	#	3	5.1	(1.6, 14.9)	4	3.8	(1.4, 9.8)
Becoming a student/starting university/studying	0	-	-	2	3.4	#	2	1.9	#
Other significant life events	2	4.3	#	3	5.1	(1.6, 14.9)	5	4.7	(1.9, 11.0)

Sample too small to enable meaningful confidence interval calculation

4.7 Health conditions

4.7.1 Tobacco use

Overall, 70.8% of the MR/PG cohort at baseline had ever smoked cigarettes or tobacco, although half were not current smokers. More than half of the MR/PG cohort had ever smoked more than 100 cigarettes in their lifetime (55.7%), or ever smoked daily for a period of time (51.9%). Forty-four percent of the MR/PG cohort currently smoked daily, almost two-fifths (37.8%) had tried to get help to stop smoking in the past year, and more than half (51.1%) had ever sought help. Very few of the MR/PG cohort smoked weekly or less often (Table 20).

Although the overall proportions of the MR/PG cohort that had ever smoked cigarettes was similar to the proportion of moderate-risk/problem gamblers in the NGS in Wave 1, *the proportions who had ever smoked more than 100 cigarettes in their lifetime were lower in the MR/PG cohort (44.7% moderate-risk gamblers, 64.4% problem gamblers), compared with the NGS (79% and 93.9%, respectively). A similar finding was noted for those who had ever smoked daily for a period of time (Report #2, Table 35).*

The proportion who were not current smokers was higher for moderate-risk gamblers in the MR/PG cohort (60.5%) than for the NGS (24.7%). The opposite finding was noted for moderate-risk gamblers who smoked at least daily (34.2% vs 70.5).

In regard to smoking weekly or less often, the NGS was similar to the MR/PG cohort with very few reporting this. *A lower proportion of problem gamblers in the MR/PG cohort had ever tried to get help to stop smoking (46.7%) than in the NGS (86.4%).*

Table 20: Lifetime and current tobacco use

Tobacco/cigarette smoking behaviour	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Ever smoked cigarettes or tobacco	30	63.8	(49.1, 76.4)	45	76.3	(63.6, 85.5)	75	70.8	(61.3, 78.7)
Ever smoked more than 100 cigarettes in lifetime	21	44.7	(31.0, 59.2)	38	64.4	(51.3, 75.7)	59	55.7	(46.0, 65.0)
Ever smoked daily for a period of time	19	40.4	(27.3, 55.1)	36	61.0	(47.9, 72.7)	55	51.9	(42.3, 61.4)
How often smoke now									
Do not smoke now	23	60.5	(44.1, 74.8)	22	42.3	(29.5, 56.2)	45	50.0	(39.6, 60.4)
At least once a day	13	34.2	(20.8, 50.7)	27	51.9	(38.3, 65.3)	40	44.4	(34.4, 55.0)
At least once a week	2	5.3	#	1	1.9	#	3	3.3	(1.1, 10.0)
At least once a month	0	-	-	0	-	-	0	-	-
Less often than once a month	0	-	-	2	3.8	#	2	2.2	#
Ever tried to get help to stop smoking (informally or formally)	9	60.0	(33.9, 81.5)	14	46.7	(29.3, 64.8)	23	51.1	(36.3, 65.8)
Ever tried to get help to stop smoking (informally or formally) in the past 12 months	8	53.3	(28.5, 76.6)	9	30.0	(16.0, 49.1)	17	37.8	(24.5, 53.2)

Sample too small to enable meaningful confidence interval calculation

4.7.2 Hazardous alcohol consumption

Overall, half of the MR/PG cohort at baseline were hazardous drinkers and half were not. There was generally a similar proportional split between moderate-risk and problem gamblers. The mean score was 5.2 for moderate-risk gamblers and 4.6 for problem gamblers (Table 21). Both of these scores are in the hazardous range.

The findings for hazardous alcohol consumption were similar for the MR/PG cohort and for the NGS in Wave 1 (Report #2, Table 38).

Table 21: Hazardous alcohol consumption in past year

Alcohol status (AUDIT-C)	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Non-hazardous drinker	21	44.7	(31.0, 59.2)	32	54.2	(41.3, 66.6)	53	50.0	(40.4, 59.6)
Hazardous drinker	26	55.3	(40.8, 69.0)	27	45.8	(33.4, 58.7)	53	50.0	(40.4, 59.6)
Mean AUDIT-C score		5.2	(4.2, 6.1)		4.6	(3.7, 5.5)		4.9	(4.2, 5.5)

4.7.3 Other drug use

Participants were shown a list of drugs (other than alcohol and tobacco) and asked if they had used any in the prior 12 months for recreational purposes or to get high. Overall, slightly more than half (56.6%) of the MR/PG cohort at baseline reported not using drugs. Cannabis was the most widely used, with one-third (33%) of the MR/PG cohort reporting this. Ecstasy was the next most reported drug at 15.1%, followed by amphetamines (8.5%). Other drug use, apart from heroin and legal party pills, was reported by between 4.7% and 7.5% of the MR/PG cohort. Overall, 17.4% had ever tried to get help to stop taking drugs and 15.2% sought help in the prior year (Table 22).

In general, the findings for the MR/PG cohort were not substantially different from the NGS in Wave 1 (Report #2, Table 36).

Table 22: Other drug use in past year

Drug	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Cannabis	14	29.8	(18.3, 44.5)	21	35.6	(24.3, 48.7)	35	33.0	(24.6, 42.7)
Ecstasy	5	10.6	(4.4, 23.4)	11	18.6	(10.5, 30.8)	16	15.1	(9.4, 23.4)
Amphetamines	5	10.6	(4.4, 23.4)	4	6.8	(2.5, 16.9)	9	8.5	(4.4, 15.7)
Legal party pills	0	-	-	2	3.4	#	2	1.9	#
Stimulants	2	4.3	#	4	6.8	(2.5, 16.9)	6	5.7	(2.5, 12.2)
Painkillers	3	6.4	(2.0, 18.3)	2	3.4	(0.8, 12.8)	5	4.7	(1.9, 11.0)
Benzodiazepines	2	4.3	#	4	6.8	(2.5, 16.9)	6	5.7	(2.5, 12.2)
Hallucinogens	4	8.5	(3.2, 20.9)	4	6.8	(2.5, 16.9)	8	7.5	(3.8, 14.5)
Cocaine	4	8.5	(3.2, 20.9)	2	3.4	(0.8, 12.8)	6	5.7	(2.5, 12.2)
Heroin	1	2.1	#	0	-	-	1	0.9	#
No drug use	29	61.7	(47.0, 74.5)	31	52.5	(39.7, 65.0)	60	56.6	(46.9, 65.8)

Drug	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Ever tried to get help to stop taking drugs	3	16.7	(5.2, 42.0)	5	17.9	(7.4, 37.3)	8	17.4	(8.7, 31.7)
Ever tried to get help to stop taking drugs in the past 12 months	3	16.7	(5.2, 42.0)	4	14.3	(5.3, 33.4)	7	15.2	(7.2, 29.3)

Sample too small to enable meaningful confidence interval calculation

4.7.4 Physical and mental health

Overall, about one-quarter each (24% to 28%) of the MR/PG cohort reported their health at baseline to be very good, good or fair over the past 12 months. Fifteen percent reported poor health and 8.5% reported excellent health. Approximately equal proportions reported experiencing (48.6%) or not experiencing (51.4%) major problems, hardships or traumas. About one-quarter (23.6%) of the MR/PG cohort reported having a disability that affected daily life in the prior year. Whilst two-fifths (42.5%) did not report any current health problems, depression and anxiety were common (31.1% and 26.4%, respectively), followed by other unspecified physical or mental health conditions (23.6%), obesity (17.9%) and heart conditions/high blood pressure/high cholesterol (15.1%) (Table 23).

In general, the findings for the MR/PG cohort were not substantially different from the NGS in Wave 1 (Report 32, Table 39).

Table 23: Health status

Health status	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Health in general over past 12 months									
Excellent	6	12.8	(5.8, 25.9)	3	5.1	(1.6, 14.9)	9	8.5	(4.4, 15.7)
Very good	17	36.2	(23.6, 50.9)	8	13.6	(6.8, 25.1)	25	23.6	(16.4, 32.7)
Good	16	34.0	(21.8, 48.8)	14	23.7	(14.5, 36.4)	30	28.3	(20.4, 37.8)
Fair	6	12.8	(5.8, 25.9)	20	33.9	(22.9, 47.0)	26	24.5	(17.2, 33.8)
Poor	2	4.3	#	14	23.7	(14.5, 36.4)	16	15.1	(9.4, 23.4)
In personal background have had:									
No major problems, hardships or traumas	28	59.6	(44.9, 72.7)	26	44.8	(32.4, 57.9)	54	51.4	(41.8, 61.0)
A lot of trauma, hardship/problems	19	40.4	(27.3, 55.1)	32	55.2	(42.1, 67.6)	51	48.6	(39.0, 58.2)
Current health conditions									
Heart conditions, high blood pressure or high cholesterol	10	21.3	(11.7, 35.5)	6	10.2	(4.6, 21.1)	16	15.1	(9.4, 23.4)
Diabetes	4	8.5	(3.2, 20.9)	0	-	-	4	3.8	(1.4, 9.8)
Cancer	0	-	-	2	3.4	#	2	1.9	#
Lung conditions including asthma	0	-	-	4	6.8	(2.5, 16.9)	4	3.8	(1.4, 9.8)
Depression	10	21.3	(11.7, 35.5)	23	39.0	(27.3, 52.1)	33	31.1	(22.9, 40.7)
Anxiety disorders	13	27.7	(16.6, 42.3)	15	25.4	(15.8, 38.2)	28	26.4	(18.8, 35.8)

Health status	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Obesity	6	12.8	(5.8, 25.9)	13	22.0	(13.1, 34.6)	19	17.9	(11.7, 26.6)
Other physical or mental health conditions	10	21.3	(11.7, 35.5)	15	25.4	(15.8, 38.2)	25	23.6	(16.4, 32.7)
None	24	51.1	(36.8, 65.1)	21	35.6	(24.3, 48.7)	45	42.5	(33.3, 52.2)
Disability affecting day to day life over the past 12 months	11	23.4	(13.3, 37.8)	14	23.7	(14.5, 36.4)	25	23.6	(16.4, 32.7)

Sample too small to enable meaningful confidence interval calculation

4.7.5 Psychological distress

Overall, about one quarter (20.8% to 28.3%) of the MR/PG cohort were each categorised into one of the four levels of distress (none or low, moderate, high, and severe) at baseline. However, problem gamblers in the MR/PG cohort had a mean score of 15.7, which indicates a high level of psychological distress in the prior four weeks. This was more than the mean score for moderate-risk gamblers of 9.4, indicating a moderate level of distress (Table 24).

The findings for the MR/PG cohort were generally similar to those for the NGS in Wave 1 (Report #2, Table 40).

Table 24: Psychological distress in past month

Psychological distress (K-10)	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
None or low level	16	34.0	(21.8, 48.8)	6	10.2	(4.6, 21.1)	22	20.8	(14.0, 29.7)
Moderate level	14	29.8	(18.3, 44.5)	14	23.7	(14.5, 36.4)	28	26.4	(18.8, 35.8)
High level	11	23.4	(13.3, 37.8)	19	32.2	(21.4, 45.3)	30	28.3	(20.4, 37.8)
Severe level	6	12.8	(5.8, 25.9)	20	33.9	(22.9, 47.0)	26	24.5	(17.2, 33.8)
Mean K-10 score		9.4	(7.4, 11.5)		15.7	(13.7, 17.7)		12.9	(11.4, 14.5)

4.7.6 Quality of life

Overall, a majority of the MR/PG cohort (84.9%) at baseline reported a quality of life in the prior two weeks that was below the WHOQoL-8 median score. The mean score was lower for problem gamblers (16.0) than for moderate-risk gamblers (20.2) (Table 25).

The findings for the MR/PG cohort were generally similar to those for the NGS in Wave 1 (Report #2, Table 41).

Table 25: Quality of life in past two weeks

Quality of life (WHOQoL-8)	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Below median score (0 - 24)	35	74.5	(60.0, 85.0)	55	93.2	(83.1, 97.5)	90	84.9	(76.6, 90.6)
Median score (25)	3	6.4	(2.0, 18.3)	2	3.4	#	5	4.7	(1.9, 11.0)
Above median score (26 - 32)	9	19.1	(10.2, 33.1)	2	3.4	#	11	10.4	(5.8, 17.9)
Mean WHOQoL-8 score	20.2		(18.5, 21.9)	16.0		(14.5, 17.6)	17.9		(16.7, 19.1)
SD	5.9			6.1			6.3		

4.7.7 Deprivation

Overall, only a minority (15.2%) of the MR/PG cohort at baseline reported not experiencing any deprivations in the prior 12 months. More than half (52.4%) reported experiencing one to three deprivations. The mean number of deprivations experienced by problem gamblers was 3.2, more than for moderate-risk gamblers (2.0) (Table 26). These findings were similar to those reported by NGS moderate-risk and problem gamblers in Wave 1 (Report #2, Table 42).

It is of note that overall, all deprivations apart from receiving help from a community organisation were reported by at least one-fifth of the MR/PG cohort. The two most common deprivations were being forced to buy cheaper food (58.5%), and being out of work at any time for more than one month (53.8%). The proportions of moderate-risk gamblers and problem gamblers reporting each of these deprivations were similar. However, a larger proportion of problem gamblers compared with moderate-risk gamblers reported experiencing three of the deprivations in the prior year. These were: using food grants/banks (45.8% vs. 19.1%), often going without fresh fruit and vegetables (45.8% vs. 10.6%) and continued wearing of shoes with holes (32.2% vs. 8.5%) (Table 26). These differences between moderate-risk and problem gamblers were not seen in the NGS where problem gamblers were more likely than moderate-risk gamblers to report buying cheaper food (Report #2, Table 42). However, the apparent differences may be artefacts of relatively small sample sizes as confidence intervals were wide and overlapped between those of the MR/PG cohort and the NGS.

Table 26: Deprivation indicators in past year

Deprivation indicators (NZiDep)	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Personally been forced to buy cheaper food	25	53.2	(38.8, 67.0)	37	62.7	(49.6, 74.2)	62	58.5	(48.8, 67.6)
Been out of work at any time for more than one month	24	51.1	(36.8, 65.1)	33	55.9	(42.9, 68.2)	57	53.8	(44.1, 63.2)
Personally received income from a benefit	11	23.4	(13.3, 37.8)	19	32.8	(21.8, 46.0)	30	28.6	(20.6, 38.1)
Personally put up with cold to save heating costs	16	34.0	(21.8, 48.8)	20	33.9	(22.9, 47.0)	36	34.0	(25.5, 43.6)
Personally made use of special food grants or food banks	9	19.1	(10.2, 33.1)	27	45.8	(33.4, 58.7)	36	34.0	(25.5, 43.6)

Deprivation indicators (NZiDep)	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Personally continued wearing shoes with holes	4	8.5	(3.2, 20.9)	19	32.2	(21.4, 45.3)	23	21.7	(14.8, 30.7)
Personally gone without fresh fruit and vegetables, often	5	10.6	(4.4, 23.4)	27	45.8	(33.4, 58.7)	32	30.2	(22.1, 39.7)
Personally received help from a community organisation	2	4.3	#	6	10.2	(4.6, 21.1)	8	7.5	(3.8, 14.5)
NZDI score									
0	9	19.1	(10.2, 33.1)	7	12.1	(5.8, 23.5)	16	15.2	(9.5, 23.6)
1	13	27.7	(16.6, 42.3)	9	15.5	(8.2, 27.4)	22	21.0	(14.1, 29.9)
2	9	19.1	(10.2, 33.1)	10	17.2	(9.4, 29.4)	19	18.1	(11.8, 26.8)
3	7	14.9	(7.2, 28.4)	7	12.1	(5.8, 23.5)	14	13.3	(8.0, 21.4)
4	4	8.5	(3.2, 20.9)	5	8.6	(3.6, 19.3)	9	8.6	(4.5, 15.8)
5	3	6.4	(2.0, 18.3)	8	13.8	(7.0, 25.5)	11	10.5	(5.8, 18.1)
6	1	2.1	#	7	12.1	(5.8, 23.5)	8	7.6	(3.8, 14.6)
7	1	2.1	#	5	8.6	(3.6, 19.3)	6	5.7	(2.6, 12.3)
8	0	-	-	0	-	-	0	-	-
<i>Mean</i>		<i>2.0</i>	<i>(1.5, 2.5)</i>		<i>3.2</i>	<i>(2.6, 3.8)</i>		<i>2.7</i>	<i>(2.3, 3.1)</i>

Sample too small to enable meaningful confidence interval calculation

4.8 Help-seeking for gambling problems

MR/PG cohort baseline data are presented in Table 27.

Three-quarters (76.3%) of problem gamblers in the MR/PG cohort reported that they had wanted at some time to get help to stop or reduce their gambling, and almost two-thirds (62.7%) had actually tried to get help either from informal sources (such as family or friends) or from professional organisations. This was a substantial difference from the proportion of moderate-risk gamblers who had wanted to get help (12.8%) and who actually tried to get help (10.6%).

Of the MR/PG cohort respondents who had wanted to get help, there was a relatively even split between those who had wanted the help in the recent past (past month to up to two years ago) compared with those who wanted help in the more distant past (two to five years ago and longer). However, of those who had actually tried to get help, a majority had done so in the more recent past (up to two years ago) (100% moderate-risk gambler, 62.1% problem gambler) than in the more distant past (three or more years ago).

Of the MR/PG cohort respondents who had received help, overall half (50%) reported it to be helpful, with one-fifth (21.4%) reporting it to be unhelpful, and the remaining 28.6% reporting neither helpful nor unhelpful. Fifteen problem gamblers, but no moderate-risk gamblers, reported multiple attempts to obtain help. Of these, seven had sought help on one other occasion and four on two other occasions. One problem gambler reported seeking help on 10 additional occasions. Seven problem gamblers, but no moderate-risk gamblers, had sought help in the past year; only one found it to be helpful.

In the NGS in Wave 1, for all findings the point estimates varied and the difference between moderate-risk gamblers and problem gamblers was slight (Report #2, Table 43). However, the apparent differences may be artefacts of relatively small sample sizes as confidence intervals were wide and overlapped between those of the MR/PG cohort and the NGS.

Table 27: Help-seeking for gambling problems

Help-seeking	Moderate-risk gambler			Problem gambler			Combined moderate-risk and problem gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Ever wanted to get help to reduce/stop gambling	6	12.8	(5.8, 25.9)	45	76.3	(63.6, 85.5)	51	48.1	(38.6, 57.7)
Length of time ago when first thought wanted to get help to reduce or stop gambling (n=51)									
In the last month	0	-	-	6	13.3	(5.9, 27.2)	6	11.8	(5.2, 24.4)
1 - 6 months ago	1	16.7	#	11	24.4	(13.8, 39.5)	12	23.5	(13.6, 37.5)
6 - 12 months ago	2	33.3	#	4	8.9	(3.3, 22.0)	6	11.8	(5.2, 24.4)
1 - 2 years ago	1	16.7	#	7	15.6	(7.4, 29.8)	8	15.7	(7.9, 28.9)
2 - 5 years ago	1	16.7	#	8	17.8	(8.9, 32.3)	9	17.6	(9.2, 31.1)
More than 5 years ago	1	16.7	#	9	20.0	(10.5, 34.7)	10	19.6	(10.7, 33.3)
Ever tried to get help to reduce/stop gambling (informally or formally)	5	10.6	(4.4, 23.4)	37	62.7	(49.6, 74.2)	42	39.6	(30.6, 49.4)
How long ago first tried to get help (n=42)									
In the last 12 months	4	80.0	(28.9, 97.5)	16	43.2	(27.9, 60.0)	20	47.6	(32.6, 63.1)
1 - 2 years ago	1	20.0	#	7	18.9	(9.0, 35.5)	8	19.0	(9.5, 34.4)
3 - 4 years ago	0	-	-	5	13.5	(5.5, 29.5)	5	11.9	(4.9, 26.4)
5 - 10 years ago	0	-	-	9	24.3	(12.8, 41.3)	9	21.4	(11.2, 37.0)
Overall effectiveness of help (n=42)									
Helpful	4	80.0	(28.9, 97.5)	17	45.9	(30.2, 62.5)	21	50.0	(34.7, 65.3)
Neither helpful nor unhelpful	0	-	-	12	32.4	(19.0, 49.6)	12	28.6	(16.6, 44.6)
Unhelpful	1	20.0	#	8	21.6	(10.9, 38.4)	9	21.4	(11.2, 37.0)
Tried to get help to reduce/stop gambling on other occasions since first time	0	-	-	15	40.5	(25.6, 57.5)	15	35.7	(22.3, 51.8)
Number of times tried to get help to reduce/stop gambling on other occasions since the first time (n=14)									
1	-	-	-	7	50.0	(23.2, 76.8)			
2	-	-	-	4	28.6	(9.6, 60.1)			
3	-	-	-	1	7.1	#			
5	-	-	-	1	7.1	#			
10	-	-	-	1	7.1	#			
Tried to get help to reduce/stop gambling in past 12 months (informally or formally)	-	-	-	7	70.0	(31.0, 92.4)			
Overall effectiveness of help in past 12 months (n=7)									
Helpful	-	-	-	1	14.3	#			
Neither helpful nor unhelpful	-	-	-	4	57.1	(15.0, 90.9)			
Unhelpful	-	-	-	2	28.6	#			

Sample too small to enable meaningful confidence interval calculation

4.9 Gambling risk level transitions

Of the 106 participants at baseline (2014/15), 70 were re-interviewed 12 months later in 2015/16. The PGSI was used to assess current (past 12 month) gambling risk level transitions from 2014/15 to 2015/16 for the 70 participants who remained in the study.

Gambling risk level transitions relate to the movement into and out of the different risk levels. Increased risk status indicates movement into a higher risk level from one assessment period to the next, whilst decreased risk status means moving into a lower risk level. Stability relates to staying at the same risk level between assessment periods.

Table 28: Transitions between gambling risk levels from 2014/15 to 2015/16

Transition from 2014/15	Transition to 2015/16									
	Non-gambler		Non-problem gambler		Low-risk gambler		Moderate-risk gambler		Problem gambler	
	n	%	n	%	n	%	n	%	n	%
Moderate-risk gambler	0	-	5	14.7	10	29.4	16	47.1	3	8.8
Problem gambler	0	-	4	11.1	3	8.3	7	19.4	22	61.1

Total percentages do not always add up to 100% due to rounding

Table key

	Transition to a lower risk level
	No change
	Transition to a higher risk level

Stability

Almost two-thirds (61.1%) of problem gamblers in the MR/PG cohort remained as problem gamblers from 2014/15 to 2015/16, whilst less than half (47.1%) of moderate-risk gamblers remained as moderate-risk gamblers (Table 28). This finding indicates that the problem gamblers were a more stable group than the moderate-risk gamblers. *The stability of the moderate-risk and problem gambling groups in the MR/PG cohort was greater than the stability of the corresponding groups in the NGS for the transition from Wave 1 to Wave 2 (27.5% and 44.1%, respectively)* (Report #4, Table 13: Abbott et al., 2015). However, the MR/PG cohort stability was similar to that noted for regular moderate-risk and problem gamblers in the NGS where 37.6% remained moderate-risk gamblers and 63.9% remained problem gamblers from Wave 1 to Wave 2 (Appendix 4).

Transition to higher risk level

About nine percent (8.8%) of the moderate-risk gamblers in the MR/PG cohort in 2014/15 became problem gamblers in 2015/16 (Table 28). This finding is very similar to that of moderate-risk gamblers in the NGS, where 9.6% transitioned from moderate-risk gambling in Wave 1 to problem gambling in Wave 2 (Report #4, Table 13). However, the percentage is lower than that for regular NGS moderate-risk gamblers of whom 14.7% transitioned into problem gambling.

Transition to lower risk level

Of the 36 problem gamblers in the MR/PG cohort in 2014/15, 38.8% were no longer problem gamblers in 2015/16; 19.4% became moderate-risk gamblers, eight percent became low-risk gamblers and 11.1% became non-problem gamblers. None of the problem gamblers stopped gambling (Table 28). *As noted above, the stability of the problem gambler group in the MR/PG cohort was greater than that for problem gamblers in the NGS. This means that a lower proportion of MR/PG cohort problem gamblers transitioned into a lower risk level. Of those who did change risk level, compared with the NGS, more became moderate-risk gamblers (19.4% vs. 9.7%), and fewer became low-risk gamblers (8.3% vs. 13.6%) or non-problem gamblers (11.1% vs. 32.6%).* However, when the problem gamblers in the MR/PG cohort were compared with regular NGS problem gamblers, the percentages who transitioned to the lower risk levels were similar (Appendix 4). In both cohorts no problem gamblers stopped gambling from Wave 1 to Wave 2 (Report #4, Table 13).

Of the 34 moderate-risk gamblers in the MR/PG cohort in 2014/15, 44.1% transitioned to a lower risk level in 2015; 29.4% became low-risk gamblers and 14.7% became non-problem gamblers. None of the moderate-risk gamblers stopped gambling (Table 28). *As noted above, the stability of the moderate-risk gambler group in the MR/PG cohort was greater than that for moderate-risk gamblers in the NGS. This means that a lower proportion of MR/PG cohort moderate-risk gamblers transitioned into a lower risk level. Of those who did change risk level, compared with the NGS, about the same proportion became low-risk gamblers (29.4% vs. 25.3%) but fewer became non-problem gamblers (14.7% vs. 30.7%).* However, when the moderate-risk gamblers in the MR/PG cohort were compared with regular NGS moderate-risk gamblers, the percentages who transitioned to the lower risk levels were similar (Appendix 4). *Unlike in the NGS no MR/PG cohort moderate-risk gamblers stopped gambling, compared with 6.9% of moderate-risk gamblers from Wave 1 to Wave 2 in the NGS (Report #4, Table 13) though this finding was similar to that of the regular NGS moderate-risk gamblers of whom none stopped gambling (Appendix 4).*



This report details findings from a cohort of 106 moderate-risk and problem gamblers (MR/PG cohort) who were purposively recruited from a casino or website advertisements in order to boost the sample size of these gambling risk groups in the National Gambling Study (NGS). Potential participants were invited to take part in the study if they self-identified as regular gamblers. The reason for this initial selection criterion was because only moderate-risk/problem gamblers were sought for the cohort and we wanted to reduce the likelihood of lower risk gamblers being screened and then informed that they were ineligible for the study.

Originally, it was envisaged that the MR/PG cohort would be solely recruited from gamblers at gambling venues, in particular casino and non-casino EGM venues. However, although participant recruitment from a casino yielded about one-fifth of the expected sample, recruitment from non-casino EGM venues was fruitless resulting in zero participants. The recruitment approach was, therefore, modified to include website advertisements for participation. This proved to be the most successful approach.

The moderate-risk and problem gambler groups in the NGS are relatively small ($n = 148$ at baseline) and, with attrition, the numbers reduced over time to sample sizes that preclude separate moderate-risk and problem gambler sub-group analyses ($n = 75$ in Wave 2). If, despite being a self-selected convenience sample, the MR/PG cohort is found to be similar to the nationally representative NGS moderate-risk gamblers and problem gamblers, this would allow future pooling of both samples, which would give greater statistical power for sub-group analyses. The MR/PG cohort was interviewed twice, at baseline (2014/15) and one year later (2015/16) using the same questionnaires that were used for the NGS in Wave 1 (baseline, 2012) and Wave 2 (2013). Seventy of the 106 MR/PG cohort underwent the second interview. There was no significant differential attrition.

Gender and ethnicity distribution of the MR/PG cohort

About one-fifth of the MR/PG cohort was recruited from a casino with the remaining four-fifths recruited via website advertisements. Although the latter were demographically similar to the NGS moderate-risk/problem gamblers in regard to gender and ethnicity, the profile of the casino recruited MR/PG cohort participants was slightly different, comprising more males and Asian people. Overall, whilst percentage point estimates appeared to differ between the MR/PG cohort and moderate-risk/problem gamblers in the NGS, confidence intervals overlapped meaning that there is probably no real difference. However, this could be an artefact of small sample size in some cases.

As regular gamblers were sought for the MR/PG cohort, comparisons were made with not only all NGS moderate-risk/problem gamblers but also with regular NGS moderate-risk/problem gamblers (i.e. those who gambled weekly or more often). Gender distribution of the MR/PG cohort was similar to that of the regular NGS gamblers.

Thus, the use of a casino as a recruitment avenue appears to have introduced a slight level of demographic bias to the MR/PG cohort compared with the NGS, although this is offset by only one-fifth of the MR/PG cohort having been recruited in this way. This potentially could be problematic for certain sub-group analyses using the combined samples such as those comparing casino gambling against other gambling activities, or that compare Asian findings against other populations.

Similarities between the MR/PG cohort and moderate-risk/problem gamblers in the NGS

Comparing the baseline MR/PG cohort with moderate-risk and problem gamblers in the NGS in Wave 1, there were no major differences in regard to number and types of major life events experienced in the prior year nor in terms of hazardous alcohol consumption, drug use, physical and mental health, psychological distress, quality of life, or individual level of deprivation.

Additionally, the majority of gambling behaviours reported by the MR/PG cohort at baseline were not substantially different from those reported by moderate-risk and problem gamblers in the NGS in Wave 1. These included number of gambling activities participated in, pattern of gambling participation, gambling expenditure, methods to stop gambling too much and help-seeking for gambling problems.

Differences in tobacco smoking between the MR/PG cohort and moderate-risk/problem gamblers in the NGS

The only health factor where there were differences between the cohorts related to tobacco smoking. The MR/PG cohort, compared with moderate-risk and problem gamblers in the NGS, had a greater proportion of moderate-risk gamblers who were not current smokers, and lower overall (moderate-risk and problem gambler) proportions who had ever smoked 100 cigarettes, ever smoked daily or ever tried to get help to stop smoking. These differences between the cohorts, particularly the higher proportion of non-smokers in the MR/PG cohort, may be partly due to the general national trend of reduced smoking prevalence over time. The New Zealand Health Surveys indicate that there was a slight but statistically significant reduction in general population adult current smoking prevalence from 2011/12 to 2014/15 (from 18.2% to 16.6%) (Ministry of Health, 2015). The NGS cohort was first interviewed in 2012 whilst the MR/PG cohort was first interviewed in 2014/15. This finding means that any sub-group analyses of combined samples should be considered cautiously if current smoking behaviour is examined.

Differences in gambling behaviours between the MR/PG cohort and moderate-risk/problem gamblers in the NGS

There were also differences between the cohorts in regard to some gambling behaviours, notably participation in certain gambling activities. Some of these differences disappeared when the MR/PG cohort was compared to regular NGS moderate-risk/problem gamblers, indicating that overall the MR/PG cohort were more regular and frequent gamblers, than moderate-risk/problem gamblers overall in the NGS. Indeed, almost all (92.7%) of the MR/PG cohort gambled once a week or more often compared with NGS moderate-risk/problem gamblers of whom less than half (46.1%) gambled this frequently. This finding is not unexpected as MR/PG cohort participants were sought from gamblers who self-identified as regular gamblers.

However, some differences in gambling participation remained even when the MR/PG cohort was compared with regular NGS moderate-risk/problem gamblers, and it appeared that these differences were related both to the recruitment method and to self-selection into the MR/PG cohort. In particular, the MR/PG cohort (website recruited participants as well as casino recruited participants) appeared to favour casino gambling, with the website recruited gamblers also reporting a higher preference for betting on horse/dog races at a TAB in person and gambling on non-casino EGMs.

Overall, it is clear that whilst the MR/PG cohort is similar to the NGS moderate-risk/problem gambler cohort for a majority of gambling activities, and similar to regular NGS gamblers for others, there remain some activities that are gambled on by a larger proportion of the MR/PG cohort than in the NGS. Thus, for combined cohort sub-group analyses, caution will be required when investigating the activities where there are differences in participation prevalence.

Differences in gambling risk level transitions over time

Over time, there were some differences between the MR/PG cohort and moderate-risk/problem gamblers in the NGS in regard to transitions between the different gambling risk levels. It appears that, overall, participants in the MR/PG cohort were more entrenched in their level of gambling participation than moderate-risk and problem gamblers in the NGS, as the stability of the groups over time was substantially more for the MR/PG cohort. This meant that fewer participants transitioned into different risk levels, particularly lower risk levels. Consistent with a more entrenched level of gambling, of the MR/PG cohort problem gamblers who transitioned to a lower risk level, a larger proportion became moderate-risk gamblers than the corresponding transition in the NGS, and fewer became low-risk gamblers or non-problem gamblers. Thus of MR/PG cohort problem gamblers who transitioned out of problem gambling, they were more likely to only move one level and still gamble in a moderately risky manner compared with the NGS problem gamblers. Similarly, moderate-risk gamblers were more likely to only move one level becoming either problem gamblers or low-risk gamblers, with fewer transitioning into non-problem gambling and none stopping gambling, compared with moderate-risk gamblers in the NGS.


The reason for the apparent more entrenched gambling behaviour, again is partly related to the recruitment method (self-selection of regular gamblers into the study) for the MR/PG cohort compared with that of the population-representative NGS. When compared with regular NGS moderate-risk and problem gamblers, the stability of the respective groups in the MR/PG cohort was similar to that in the NGS, as was the transition to lower risk levels. The only remaining difference appeared to be that a lower percentage of MR/PG cohort moderate-risk gamblers transitioned into problem gambling than for NGS regular moderate-risk gamblers; however, this could have been an artefact of very small numbers.

Conclusion

The MR/PG cohort was broadly similar to the NGS moderate-risk/problem gamblers in a majority of gambling behaviours and health-related aspects. However, there were a few differences in participation on certain gambling activities, as well as in tobacco smoking, and a potential difference in ethnic distribution. Some of the differences disappeared when the MR/PG cohort was compared with NGS regular gamblers (i.e. those who gambled weekly or more often), indicating that there was a recruitment bias based on the selection request for self-identified regular gamblers. The recruitment method also added another bias with those recruited from a casino (one-fifth of the sample) having a higher proportion of Asian participants. Additionally, the time gap between the NGS and MR/PG cohort recruitment may have led to the lower proportion of the latter cohort being current smokers; related to New Zealand's goal to become a smoke-free country within the next decade.

In Wave 1 of the NGS there were 148 moderate-risk/problem gamblers. Combining the 106 participants from the MR/PG cohort with the NGS cohort would increase the sample to 254, an increase of 72%. Similarly, in Wave 2 of the NGS there were 75 moderate-risk/problem gamblers, which combined with the 70 participants retained in the MR/PG cohort would

increase the sample by 93% to 145. This substantially increased cohort would be beneficial for the conduct of sub-group analyses of moderate-risk/problem gamblers and is inherently feasible given that the two cohorts are similar in the majority of respects. However, as there are some differences between the cohorts, dependent on the analyses being conducted, weightings may have to be applied to the MR/PG cohort to make it more representative of the general population moderate-risk and problem gamblers.



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**APPENDIX 1:
ATTRITION**

Baseline variables	Description	2014/15	2015/16	% Retained	p-value [#]
Gender	Male	76	51	67.1	0.712
	Female	30	19	63.3	
Age group (years)	18 - 24	19	9	47.4	0.164
	25 - 34	49	34	69.4	
	35 - 44	13	7	53.8	
	45 - 54	9	6	66.7	
	55 - 64	11	9	81.8	
	65+	5	5	100.0	
Ethnic group (prioritised)	Māori	25	14	56.0	0.088
	Pacific	7	6	85.7	
	Asian	17	8	47.1	
	European/Other	57	42	73.7	
Problem Gambling Severity Index score (PGSI)	Moderate-risk	47	34	72.3	0.221
	Problem gambler	59	36	61.0	
Number of gambling activities participated in	1	-	-	-	0.690
	2	3	2	66.7	
	3	10	8	80.0	
	4-6	27	17	63.0	
	7-9	46	28	60.9	
	10+	20	15	75.0	
Gambling frequency	Four times a week or more	39	28	71.8	0.855
	Two or three times a week	39	24	61.5	
	Once a week	18	11	61.1	
	Once every two weeks	7	5	71.4	
	Once every three weeks	1	1	100.0	
	Once a month	2	1	50.0	
Pattern of participation	Infrequent gambler	12	9	75.0	0.783
	Regular non-continuous	3	2	66.7	
	Regular continuous	91	59	64.8	
Number of major life events	0	9	5	55.6	0.575
	1	16	12	75.0	
	2	12	6	50.0	
	3	21	16	76.2	
	4	17	12	70.6	
	5+	31	19	61.3	
Psychological distress (Kessler-10)	Low	22	14	63.6	0.795
	Moderate	28	20	71.4	
	High	30	18	60.0	
	Severe	26	18	69.2	
Quality of life (QHOQoL-8)	Below median	90	59	65.6	0.856
	Median	5	3	60.0	
	Above median	11	8	72.7	

[#] p-values are chi-squares tests for association, excluding 'Not reported' and 'missing' categories

** Note all measures relate to the 2014/15 baseline measures

**APPENDIX 2:
NGS PGSI MODERATE-RISK AND PROBLEM GAMBLING BY GENDER AND
ETHNICITY**

All moderate-risk and problem gamblers

	Moderate-risk gambler			Problem gambler			Combined problem and moderate-risk gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Gender									
Male	57	53.0	(42.2, 63.8)	28	69.7	(55.1, 84.4)	85	57.6	(48.7, 66.4)
Female	51	47.0	(36.2, 57.8)	12	30.2	(15.6, 44.9)	63	42.4	(33.6, 51.3)
Ethnicity									
European/Other	51	47.8	(37.7, 57.9)	17	41.1	(25.6, 56.6)	50	46.0	(37.4, 54.6)
Māori	24	22.4	(15.6, 29.2)	15	37.0	(23.9, 50.2)	72	26.4	(20.1, 32.7)
Pacific	18	17.0	(10.5, 23.4)	5	11.6	(4.9, 18.3)	51	15.5	(10.4, 20.6)
Asian	14	12.7	(5.9, 19.6)	4	10.3	(0.9, 19.6)	18	12.1	(6.6, 17.6)

Data weighted for 2013 Census data

Moderate-risk and problem gamblers who gambled at least once per week

	Moderate-risk gambler			Problem gambler			Combined problem and moderate-risk gambler		
	n	%	(95% CI)	n	%	(95% CI)	n	%	(95% CI)
Gender									
Male	41	68.0	(56.5, 79.5)	14	58.1	(54.7, 78.6)	54	65.2	(54.6, 75.8)
Female	19	32.0	(20.5, 43.5)	10	41.9	(21.4, 45.3)	29	34.8	(24.2, 45.4)
Ethnicity									
European/Other	24	41.0	(27.6, 54.3)	9	37.4	(19.2, 55.6)	33	39.9	(28.2, 51.7)
Māori	15	26.0	(15.7, 36.2)	11	47.9	(32.3, 63.5)	27	32.1	(22.7, 41.5)
Pacific	13	21.8	(12.3, 31.2)	2	9.5	#	15	18.3	(10.9, 25.8)
Asian	7	11.3	(2.0, 20.6)	1	5.2	#	8	9.6	(2.4, 16.8)

Data weighted for 2013 Census data

Sample too small to enable meaningful confidence interval calculation

**APPENDIX 3:
NGS PAST YEAR PARTICIPATION IN GAMBLING ACTIVITIES IN PAST 12
MONTHS AND WEEKLY OR MORE OFTEN**

All moderate-risk and problem gamblers

Gambling activity	Gambling participation					
	Past year			Weekly or more often		
	n	%	(95% CI)	n	%	(95% CI)
Cards for money (not in casino)	35	23.7	(16.0, 31.3)	5	3.6	(0.8, 6.5)
Poker for money/prizes (commercial venue in NZ)	18	11.9	(6.3, 17.4)	4	2.5	(0.0, 5.3)
Poker for money/prizes (friends/family private residence)	21	14.3	(8.2, 20.4)	4	3.0	(0.0, 6.0)
Poker for money/prizes online	7	4.7	(0.9, 8.5)	4	2.9	(0.0, 5.8)
Bets with friends/workmates for money/prizes	45	30.6	(22.7, 38.4)	5	3.6	(0.6, 6.6)
Text game or competition	15	10.3	(5.0, 15.6)	3	2.0	(0.0, 5.1)
New Zealand raffle/lottery	95	64.3	(55.7, 72.9)	8	5.4	(2.1, 8.7)
Lotto online	9	6.2	(1.8, 10.6)	6	3.8	(0.0, 7.7)
Lotto from a store	116	78.6	(70.3, 86.9)	39	26.6	(19.2, 33.9)
Keno online	4	2.6	(0.3, 4.9)	1	0.6	#
Keno from a store	14	9.5	(5.5, 13.5)	3	1.7	(0.3, 3.2)
Instant Kiwi or other scratch tickets	101	68.1	(59.7, 76.4)	10	7.0	(2.9, 11.1)
Housie or bingo	17	11.4	(5.8, 17.0)	1	0.7	#
Horse/dog race betting (at the track)	25	17.2	(10.2, 24.2)	3	1.9	(0.0, 4.3)
Horse/dog race betting (TAB in person)	27	18.3	(12.0, 24.5)	7	5.0	(2.0, 8.0)
Horse/dog race betting (TAB telephone, online, interactive TV)	16	11.1	(5.4, 16.8)	3	2.2	(0.4, 3.9)
Horse/dog race betting (overseas TAB, organisation/ website)	2	1.1	#	0	-	-
Sports betting (TAB at event)	18	11.9	(4.7, 19.0)	2	1.7	#
Sports betting (TAB in person)	17	11.7	(5.1, 18.3)	4	2.6	(0.2, 4.9)
Sports betting (TAB telephone, online or interactive TV)	9	6.4	(0.8, 11.9)	2	1.3	#
Sports betting (overseas TAB, organisation/ website)	6	4.1	(0.0, 9.7)	2	1.1	#
Casino table games or EGMs (overseas)	14	9.3	(4.8, 13.7)	1	0.3	#
Casino table games or EGMs (NZ)	64	43.0	(34.1, 51.9)	1	0.8	#
Casino table games (NZ)	20	13.4	(6.7, 20.1)	0	-	-
Casino EGMs (NZ)	60	40.7	(31.7, 49.7)	0	0.3	#
Pub EGMs	93	62.8	(54.2, 71.4)	24	16.1	(9.9, 22.4)
Club EGMs	35	23.4	(15.9, 30.9)	6	4.0	(0.2, 7.8)
Short-term speculative investments	0	0.2	#	0	0.2	#
Overseas internet gambling for money/prizes	6	4.3	(0.5, 8.1)	1	0.4	#

Data weighted for 2013 Census data

Sample too small to enable meaningful confidence interval calculation

Moderate-risk and problem gamblers who gambled at least once per week

Gambling activity	Gambling participation					
	Past year			Weekly or more often		
	n	%	(95% CI)	n	%	(95% CI)
Cards for money (not in casino)	22	26.8	(17.0, 36.6)	5	6.4	(1.3, 11.5)
Poker for money/prizes (commercial venue in NZ)	14	16.7	(8.3, 25.2)	4	4.5	(0.0, 9.4)
Poker for money/prizes (friends/family private residence)	16	18.9	(9.4, 28.3)	4	5.4	(0.1, 10.7)
Poker for money/prizes online	7	8.3	(1.8, 14.8)	4	5.2	(0.1, 10.3)

Gambling activity	Gambling participation					
	Past year			Weekly or more often		
	n	%	(95% CI)	n	%	(95% CI)
Bets with friends/workmates for money/prizes	33	40.1	(29.0, 51.3)	5	6.4	(1.0, 11.7)
Text game or competition	8	9.4	(2.0, 16.8)	3	3.5	(0.0, 9.1)
New Zealand raffle/lottery	51	61.4	(49.8, 72.9)	8	9.6	(3.7, 15.5)
Lotto online	8	9.9	(2.4, 17.4)	6	6.8	(0.0, 13.6)
Lotto from a store	72	87.1	(78.5, 95.7)	39	47.3	(36.6, 58.1)
Keno online	4	4.6	(0.6, 8.6)	1	1.1	#
Keno from a store	12	13.9	(7.3, 20.4)	3	3.1	(0.6, 5.7)
Instant Kiwi or other scratch tickets	57	69.2	(58.0, 80.4)	10	12.5	(5.2, 19.7)
Housie or bingo	13	15.9	(6.8, 25.0)	1	1.3	#
Horse/dog race betting (at the track)	15	17.7	(9.6, 25.9)	3	3.3	(0.0, 7.6)
Horse/dog race betting (TAB in person)	21	25.4	(16.1, 34.6)	7	8.9	(3.6, 14.2)
Horse/dog race betting (TAB telephone, online, interactive TV)	13	15.7	(7.7, 23.6)	3	3.9	(0.7, 7.1)
Horse/dog race betting (overseas TAB, organisation/ website)	2	2.0	#	0	-	-
Sports betting (TAB at event)	10	12.2	(3.7, 20.6)	2	3.0	#
Sports betting (TAB in person)	10	11.8	(5.2, 18.4)	4	4.6	(0.4, 8.7)
Sports betting (TAB telephone, online or interactive TV)	3	3.8	(0.6, 7.1)	2	2.4	#
Sports betting (overseas TAB, organisation/ website)	2	2.6	#	2	2.0	#
Casino table games or EGMs (overseas)	8	9.6	(4.3, 14.9)	1	0.6	#
Casino table games or EGMs (NZ)	31	37.5	(26.7, 48.3)	1	1.4	#
Casino table games (NZ)	8	10.1	(3.7, 16.5)	0	-	-
Casino EGMs (NZ)	29	35.0	(24.2, 45.8)	0	0.5	#
Pub EGMs	57	68.2	(57.3, 79.1)	24	28.7	(18.4, 39.1)
Club EGMs	23	27.3	(17.5, 37.0)	6	7.1	(0.5, 13.8)
Short-term speculative investments	0	0.3	#	0	0.3	#
Overseas internet gambling for money/prizes	2	2.7	#	1	0.6	#

Data weighted for 2013 Census data

Sample too small to enable meaningful confidence interval calculation

**APPENDIX 4:
NGS GAMBLING RISK LEVEL TRANSITIONS FROM WAVE 1 TO WAVE 2**

Moderate-risk and problem gamblers who gambled at least once per week

Transition from Wave 1	Transition to Wave 2									
	Non-gambler		Non-problem gambler		Low-risk gambler		Moderate-risk gambler		Problem gambler	
	n	%	n	%	n	%	n	%	n	%
Moderate-risk gambler	0	-	7	24.4	7	23.3	11	37.6	4	14.7
Problem gambler	0	-	2	16.0	1	7.8	1	12.4	7	63.9

Data weighted for 2013 Census data and attrition

Total percentages do not always add up to 100% due to rounding

Table key

	Transition to a lower risk level
	No change
	Transition to a higher risk level