BACKGROUND
This study relates to an in-depth quantitative analysis of gambling and problem gambling data from the 2011/12 New Zealand Health Survey (NZHS). The 2011/12 New Zealand Health Survey gathered data through face-to-face interviews with approximately 12,000 randomly selected adults aged 15 years and over throughout New Zealand. It provides information about health behaviours, lifestyles, health status, and access to healthcare. Questions on gambling and problem gambling have been included in the three most recent New Zealand Health Surveys - 2002/03, 2006/07 and 2011/12.

AIM AND METHODS
The overall aim of this study was to provide a comprehensive and detailed analysis of the full gambling and problem gambling dataset collected in the 2011/12 NZHS. Specifically, this report:

1. Provides population based estimates of gambling and problem gambling behaviours in relation to individuals’ (adults aged 15 years or older) own gambling behaviour and the gambling behaviour of others (i.e. people affected by someone else’s gambling).
2. Examines similarities and disparities in gambling and problem gambling behaviours according to major socio-demographic variables: age, gender, ethnicity, socio-economic status/deprivation, education, employment status and income.
3. Explores associations between gambling and problem gambling behaviours and potential risk/resiliency factors, including: socio-demographic factors; use of alcohol, tobacco and other drugs; level of functioning; long-term mental health conditions (depression, manic depression, anxiety), and use of health services.
4. Examines trends over time for gambling and problem gambling data where permissible (i.e. time series analysis of NZHS data from 2002/03, 2006/07 and 2011/12).

This research also aimed to compare and contrast findings from the 2011/12 NZHS with those of earlier NZHS waves and the 2012 National Gambling Study. It should be noted that while there are a number of similarities in findings between the 2011/12 NZHS and the National Gambling Study, there are some important differences that should be considered when interpreting the findings from the 2011/12 NZHS. For example, the 2011/12 wave of the NZHS found that approximately one-half of adults had participated in some form of gambling in the last 12 months while the National Gambling Study reported a past 12-month gambling participation rate of 80%. The 2011/12 NZHS found that three percent, or an estimated 112,800 adults, were experiencing some level of harm and/or negative consequences as a result of their gambling; just over one percent satisfied the PGSI past-year criteria for moderate-risk/problem gambling (1.0% - moderate-risk and 0.2% - problem) and a further two percent
satisfied the criteria for low-risk gambling. These estimates are smaller than those obtained by the National Gambling Study, which estimates that 2.5% of adults are moderate-risk/problem gamblers (1.8% - moderate-risk and 0.7% - problem) and a further five percent satisfy the criteria for low-risk gambling.

**KEY FINDINGS**

**Past-year gambling participation:**
- Approximately one-half (52.3%) of all adults aged 15 years and over had gambled on at least one activity in the last 12 months.
- The most popular gambling activities were Lotto and associated lottery products (45%). Less than ten percent of adults had gambled on Electronic Gaming Machines (EGM), track or sports betting, casino gambling (EGMs and/or tables), Keno, housie and ‘other’ in the previous year.
- Instant Kiwi was preferred by greater proportions of females than males, and greater proportions of males preferred track and sports betting.
- Lotto and track betting were more popular amongst the older age-brackets while younger age-groups preferred Instant Kiwi.
- Approximately one-third (33%) of adults had gambled on one activity in the last 12 months and three percent of adults had gambled on ‘four or more’ activities. Gambling on ‘four or more’ activities was more prevalent amongst males, younger age groups, Māori and European/Other, those who lived in urban locations, and people who had gambled on Keno, casino tables, and EGMs (casino and/or non-casino).

**Problematic gambling:**
- Problem gambling was measured by the Problem Gambling Severity Index (PGSI).
- Approximately 43,400 (95% CI 35,100 – 51,800), or 1.2% of the adult population satisfied the criteria for moderate-risk/problem gambling (1.0% - moderate-risk and 0.2% - problem). A further 2.0% satisfied the criteria for low-risk gambling.
- Loss of control, feelings of guilt, and chasing losses were the most frequently endorsed items on the Problem Gambling Severity Index.
- Adults that satisfied the criteria for moderate-risk/problem gambling were more likely to be male, aged 25-34 or 45-54, identify as Māori or Pacific, and live in urban neighbourhoods with higher levels of deprivation.
- Gambling on ‘four or more’ activities was associated with an increased risk of gambling problems.
- There was an overall trend for the severity of gambling problems to increase along with rate of participation in each gambling activity, particularly for EGMs: Moderate-risk/problem gamblers were 14 times more likely to have gambled on any EGM and 13 times more likely to have gambled on non-casino EGMs than non-problem/recreational gamblers.

**Ecological factors and problematic gambling:**
- Problematic gambling was significantly associated with use of alcohol, hazardous drinking behaviour, alcohol dependence, smoking, and use of drugs.
- Compared to people with no gambling problems, moderate-risk/problem gamblers had:
  - 1.6 times the odds of drinking alcohol;
  - 4.7 times the odds of hazardous drinking;
  - 6.3 times the odds of alcohol dependence;
  - 4.2 times the odds of being a current smoker; and,
  - 3.7 times the odds of using drugs:
    - 2.7 times the odds of using cannabis;
    - 6.9 times the odds of using other drugs.
- Problematic gambling was significantly associated with fair or poor self-rated health and a high/very high probability of an anxiety or depressive disorder. The odds of an anxiety or depressive disorder rose with gambling symptom severity: low-risk gamblers were twice as likely (OR 2.1) and moderate-risk/problem gamblers were nearly six times as likely (OR 5.7) as adults with no gambling problems to have an anxiety or depressive disorder.
- Moderate-risk/problem gamblers were significantly more likely to have been diagnosed by a doctor with a common mental disorder (i.e. depression, bipolar disorder or anxiety disorder).
- Adults with gambling problems exhibited greater use of health services than other adults: moderate-risk/problem gamblers were twice (OR 2.0) as likely as those with no gambling problems to have consulted a GP in the past year. However, this group were also more likely to report having unmet health needs (not being able to see a GP when they needed to):
  - Compared to those with no gambling problems, low-risk gamblers were twice as likely (OR 2.1) and moderate-risk/problem gamblers were two and a half times as likely (OR 2.6) to report unmet health needs.
  - The relationship between gambling status and having unmet health needs due to cost was also significant. Low-risk and moderate-risk/problem gamblers were twice as likely (OR 2.1 and OR 1.9 respectively) as those with no gambling problems to report that they had not seen a GP due to the cost.
- Gambling status was significantly associated with use of other health professionals (i.e. a psychologist, counsellor or social worker): moderate-risk/problem gamblers were three and a half times more likely (OR 3.4) than those with no gambling problems to have sought help in the past 12 months.

**Experiencing problems due to someone else’s gambling:**
- Approximately 89,100 (95% CI 77,000 - 101,100), or 2.5% of adults aged 15 years and over indicated that they had been negatively impacted by someone else’s gambling in the past 12 months.
- Adults that had been affected by someone else’s gambling were more likely to be female, aged 25-34 years, and identify as Māori or Pacific.
- Being affected by someone else’s gambling was significantly associated with an individual's own gambling status: 9.5% of people categorised as low- or moderate-risk/problem gamblers had been affected by someone else’s gambling, compared with 2.9% of non-problem/recreational gamblers and 1.6% of non-gamblers.
- Non-casino EGMs (52.9%), casino EGMs (32.0%) and track or sports betting (22.1%) were the modes most associated with harm from someone else’s gambling.

**Changes over time – comparison of the 2002/03, 2006/07 and 2011/12 NZHS:**
It is important to note that when comparisons are made between recent NZHS surveys (2002/03, 2006/07 and 2011/12), results have been age-standardised in accordance with World Health Organisation (WHO) age population distributions. As such, some of the results that have been detailed above for the 2011/12 NZHS may differ slightly to those that are specified in the following paragraph. For example, while 52.3% of the adult population had gambled over the past-year in the 2011/12 NZHS (see above), the age-adjusted rate of past-year gambling in 2011/12 is 45.7% (as reported below when comparing with previous waves of the NZHS).

**Involvement in gambling and activities that adults gamble on:**
- The overall proportion of people who had gambled on any activity has significantly (p<0.0001) decreased with each NZHS wave: 65.9% in 2002/03; 60.3% in 2006/07; 45.7% 2011/12
- Significant decreases in participation across the three NZHS waves were observed for: Lotto, Instant Kiwi, non-casino EGMs, track betting, casino EGMs (NB: data for casino EGMs was only available for 2006/07 and 2011/12), sports betting, Keno and Housie.
**Number of gambling activities:**
- The number of gambling activities that people engaged in had significantly decreased over time. There was an overall decreasing trend with people participating in fewer activities with each survey wave, for example, the proportion of people who had gambled on four or more activities had decreased: 5.9% in 2002/03; 5.2% in 2006/07; 3.0% in, 2011/12.

**Problematic gambling:**
- **No significant** changes (based on overlapping 95% confidence intervals) were observed in the proportions of problem (0.4% in 2006/07 and 0.2% in 2011/12) or moderate-risk gamblers (1.4% in 2006/07 and 1.0% in 2011/12).
- **Significant** changes (p<0.0001; based on non-overlapping 95% confidence intervals) were observed in the proportions of:
  - non-gamblers: 39.7% in 2006/07 and 54.3% in 2011/12;
  - non-problem/recreational gamblers: 54.7% in 2006/07 and 42.3% in 2011/12; and,
  - low-risk gamblers: 3.7% in 2006/07 and 2.1% in 2011/12.
- The lack of significant changes over time in the NZHS (from 2006/07 to 2011/12) in the prevalence of moderate-risk or problem gambling is consistent with the National Gambling Study. However, the significant reduction in the proportion of low-risk gamblers (which may have been a consequence of the increased proportion of non-problem/recreational gamblers), contrasts with the National Gambling Study, which found no difference in the proportion of low-risk gamblers over time.

**CONCLUSIONS AND IMPLICATIONS**
Overall, this research indicates that adult participation in gambling has decreased. However, problem gambling continues to be a significant public health issue in New Zealand, with a stable proportion of the population gambling at problem and moderate-risk levels.

In total, 1.2% satisfied the criteria for moderate-risk/problem gambling (1.0% - moderate-risk and 0.2% - problem) and a further 2.0% satisfied the criteria for low-risk gambling; approximately 112,800 New Zealand adults are experiencing negative impacts as a result of their own gambling. An additional 2.5%, or approximately 89,100 adults, had experienced negative impacts due to someone else’s gambling in the past year.

Problematic gambling was associated with a number of co-existing issues, including hazardous drinking, smoking, drug use, and psychological distress/disorders. While people experiencing problem gambling were more likely to have accessed healthcare in the past year, they were also more likely to say that they had been unable to access such help due to financial difficulties. These findings have important implications for the delivery of assistance to those with problem gambling issues and support the need for facilitation and strong inter-agency communication and cooperation between those working in the areas of problem gambling, alcohol and drug treatment, and primary-care health services.

This report reiterates that EGMs, both in and out of casinos, are associated with the most harm from gambling and that Māori, Pacific people and those living in neighbourhoods with higher levels of deprivation are disproportionately affected by problem gambling.

The results presented in the 2011/12 NZHS report should be considered in relation to those of the 2012 National Gambling Study.

**Contact details:**
Dr Fiona Rossen (Principal Investigator)
Email: f.rossen@auckland.ac.nz
Phone: +64 9 9239 218