



2019 Prince Edward Island Gambling Prevalence Study

July 2021



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Research Team

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EXECUTIVE SUMMARY

Background

Gambling is a popular activity that provides economic benefit and a source of entertainment for many people. In a 2005 study, it was estimated that more than four in five adults in Prince Edward Island (PEI) had participated in at least one gambling activity in the past year.¹ Gambling can become problematic when it negatively impacts the individual who gambles, their family and friends, and the greater community. Just under 3% of the PEI adult population was estimated to be at some risk from their own gambling behaviour in 2005,¹ which is similar to more recent estimates for the Canadian population.²

In 2018, the Prince Edward Island (PEI) Department of Health and Wellness contracted the PEI Maritime SPOR SUPPORT Unit (MSSU) to study the prevalence of gambling and problem gambling in Prince Edward Island. The primary purpose of this study was to provide updated prevalence estimates for gambling and at-risk gambling, examine the socio-demographic characteristics associated with at-risk gambling, and identify potential subgroups of at-risk gamblers for more in-depth study. Due to expansion of the availability of online gambling in recent years, an additional objective was to estimate the prevalence of in-person and online gambling, and to examine the socio-demographic characteristics and gambling behaviours associated with different methods of access.

Methods

Between November 2019 and January 2020, 1,201 Islanders aged 18 years and older were surveyed using an updated and expanded version of Doiron's 2005 survey. The revised survey instrument was developed by the PEI MSSU in partnership with the PEI Department of Health and Wellness. To assist in identifying potential subgroups of at-risk gamblers, survey items were added to examine relevant social determinants of health, global measures of health and wellbeing, and associations between gambling participation and potential risk factors such as substance use and mental health issues.

Key Findings

Gambling Participation in PEI

The overall prevalence of **gambling participation** in PEI has **remained stable** (83% vs. 82% in 2019 and 2005,¹ respectively)

- **16% of Islanders only participated in charitable gambling** activities like purchasing raffle or fundraising tickets. Many people don't consider these activities to be gambling, but some gambling experts feel it is important to measure them.
- The **most popular** gambling activities were **charitable gambling, purchasing lottery and instant-win tickets, betting on horse races, betting on card or board games with family and friends, and electronic gambling machines.**

- **More Islanders** reported participating in **charitable gambling and betting on horse races** than in 2005.
- **Fewer Islanders** reported purchasing **lottery and instant-win tickets** than in 2005, though these were still popular gambling activities.
- Gambling participation did **not differ across regions** of the Island, or between demographic groups, except for household income. **Islanders in the lowest household income category were less likely to have gambled** than those with higher household incomes.

Online Gambling Participation in PEI

Approximately **10% of Islanders who had gambled in the past year reported that they had gambled online** at least once during that time.

- This survey likely underestimated the prevalence of online gambling, as a large proportion of Islanders chose not to respond to questions about whether they gambled online or in-person for specific gambling activities.

Online gambling participation is higher than previously reported (less than 1% in 2005').

- Different approaches to collecting this data **limit the direct comparability** of these estimates. However, the 2019 estimates do indicate that online gambling has increased.
- Caution should be taken in applying online gambling estimates to the current state of gambling in Prince Edward Island as this **data was collected prior to the COVID-19 pandemic**.

Online gambling was most prevalent in **younger Islanders aged 18-34** and in **Queens County** residents.

- It was difficult to assess the prevalence of specific online gambling activities due to a large amount of missing data. However, the **purchase of lottery tickets appears to be the most common online gambling activity**, followed by instant-win, electronic gambling machines, casino tables games, and bingo.

Gambling Risk in PEI

Among Islanders aged 18+:

- 17% were non-gamblers
- 74% were non-problem gamblers
- 9% were **at risk of some level of harm from their gambling**

Approximately 8,000 to 15,000 Islanders were at risk of harm from their own gambling in 2019.

At-risk gambling impacts a similar number of Islanders as many other serious chronic health conditions.

- **Low-risk gambling and dementia** affect a similar proportion of Islanders.
- When combined, **moderate-risk and severe-risk gambling** affect almost as many Islanders as **heart attacks**.
- The overall number of Islanders **at risk from their own gambling** is similar to the number of Islanders living with **diabetes**.

The proportion of Islanders **who are at risk from their gambling** is approximately **three times higher than reported in 2005**.¹

- It is difficult to determine how much of this increase may be due to differences in the way this information was collected, but the increase warrants attention and further investigation. Comparisons between provincial PEI gambling studies and gambling prevalence data collected through the Canadian Community Health Survey (CCHS) should not be made, unless the purpose is to assess how different methodology impacts estimates of at-risk gambling.

When considering harm from one's own gambling on a population level in PEI, **low-risk gamblers** accounted for almost **twice as much gambling-related harm compared to severe-risk gamblers**.

This highlights the **importance of examining the degree of harm experienced by Islanders of all gambling risk subtypes** for public health decision making. Previous research has clearly demonstrated that more population-level harm from gambling occurs in low- and moderate-risk gamblers due to their higher population numbers.^{3,4}

Demographic Characteristics and Gambling Risk

Younger Islanders aged 18–34 years were more than three times as likely to be at-risk gamblers compared to those aged 55 years and older.

- There was an association between marital status and gambling risk, with **single Islanders more likely to be at-risk** gamblers. This difference may be due to the age association described above, as a higher proportion of younger Islanders would also be single.

Men were more likely to be at-risk gamblers than women.

Islanders with a household income of less than \$40,000 per year were less likely to gamble, but those who did gamble **were less likely to be non-problem gamblers** than Islanders in higher income households.

- Islanders with a household income of less than \$40,000 per year had the highest proportion of at-risk gamblers, but this difference was not statistically significant.

Comparisons with other research:

- In 2005, male Islanders were more likely to be problem gamblers. However, age and marital status were not associated with problem gambling.¹
- Other research has consistently found similar gender and age associations with problem gambling.^{5,6}

Gambling Activity Participation and Gambling Risk

At-risk gamblers were **more likely** than non-problem gamblers to purchase or play **online instant-win tickets**, bet on **cards or board games** with family and friends, play **electronic gambling machines**, and play **casino table games**.

- Islanders who played **electronic gambling machines** or **casino table games** were the **most likely to be at risk of harm from their gambling**.
- Research has shown that continuous forms of gambling, such as using electronic gambling machines (both land-based and online), are associated with higher risk of gambling harms.⁶

The prevalence of **at-risk gambling** was **five to six times greater** in past-year gamblers who played **electronic gambling machines, sports lottery, and casino tables games** compared to gamblers who did not participate in these specific gambling activities.

Online Gambling Participation and Gambling Risk

Participation in online gambling was associated with an **increased risk of harm from gambling**.

- A recent meta-analysis has shown that online gambling is one of the strongest predictors of reporting a gambling problem.⁶

Online gamblers were 3.6 times as likely to be at risk from their own gambling compared to in-person gamblers.

Alcohol Use and Gambling

We found a consistent relationship between the use of alcohol and gambling risk.

- **More than half of at-risk gamblers** reported **drinking while gambling** in the past year. In contrast, less than 15% of non-problem gamblers drank when they gambled.
- **At-risk gamblers** were **more likely to binge drink** at least once a month compared to non-problem gamblers and non-gamblers.
- **At-risk gamblers** were approximately **three times as likely to report alcohol being a problem in their life** compared to non-problem gamblers, and five times as likely as non-gamblers.
 - Despite this, **very few people reported their problem with alcohol being related to their gambling**. It is important to remember that this data is self-reported, and a lack of awareness of connection of these issues does not necessarily mean that it does not exist.
- Nearly **three times as many online gamblers reported drinking while gambling** compared to Islanders who only gambled in person.

Cannabis Use and Gambling

- Past-year **cannabis use** was **more common among at-risk gamblers** than among non-problem gamblers and non-gamblers.
- **At-risk gamblers** were approximately **three times as likely to use cannabis at least weekly** compared to non-gamblers and non-problem gamblers.
- **No association** was found **between cannabis use and online gambling**.

Mental Health and Gambling

More **at-risk gamblers** than non-problem gamblers, had:

- A **weaker sense of belonging** to their community.
- **Lower life satisfaction**.
 - This difference was not statistically significant, but this was likely due to the conservative approach to testing differences in proportions between groups.
- A minor to serious problem with **decreased self-control**.

The complex relationship between substance use, mental health, and gambling has been demonstrated in many previous studies.⁶

These relationships may include a variety of causal and non-causal pathways, including common risk factors.

Income Sources and Gambling Risk

- **No associations** between **gambling risk** and receipt of **social assistance** and/or **employment insurance** benefits were found.
 - While this was contrary to Doiron's¹ findings, the associations in the 2006 report were based on unreliable estimates due to extremely small sample sizes. The associations must also be interpreted with caution as there did not appear to be a specific survey question to collect financial assistance information from all survey respondents, which could have affected the completeness of that data.
- We observed associations between **lower gambling risk** and **receiving CPP/QPP benefits**. **However**, these findings were **likely confounded by age**, as these benefits are more commonly received by older Islanders.
 - For example, we may have observed a lower proportion of at-risk gamblers receiving CPP/QPP benefits, because older Islanders are less likely to be at-risk gamblers.

Gambling Support and Treatment Services in PEI: Public Awareness and Attitudes

- **Younger Islanders** were **less aware** of **gambling treatment services** and the **toll-free gambling support line**.
- **Men** were **less aware** of the availability of **in-person counselling for gambling issues** than women.
- Almost **one in five at-risk gamblers** indicated that they **would not seek treatment on PEI** if they felt they had a **gambling problem**.
 - Reasons included **concerns about confidentiality** (often due to small population), and **lack of trust** in the system. Others reported that they would try to **deal with the problem on their own** or **seek help from family or friends**.

PROJECT SCOPE

The purpose of this study is to gain a better understanding of the current landscape and prevalence of gambling and problem gambling in Prince Edward Island, and any changes since the previous study conducted in 2005.¹ The PEI Department of Health and Wellness contracted the PEI Maritime SPOR SUPPORT Unit, located at the University of Prince Edward Island's Centre for Health and Community Research (CHCR), to conduct a study examining:

- 1) The prevalence of participation in gambling in Prince Edward Island
- 2) The prevalence of at-risk and problem gambling in Prince Edward Island
- 3) The association between at-risk and problem gambling and demographic characteristics (e.g., age, gender, employment status, education, marital status, and household income)
- 4) The prevalence of in-person versus online gambling
- 5) The associations of method of access (in-person vs online) with demographic characteristics and at-risk and problem gambling
- 6) Potential subgroups of at-risk gamblers for more in-depth study

METHODS

Survey Instrument

A copy of the 2019 PEI Gambling Survey Instrument is included in Appendix A.

The survey was developed by CHCR during several months of consultations with Department of Health and Wellness (DHW) and Advanis staff. As the primary purpose of this study was to provide prevalence estimates for comparison with previous PEI gambling surveys, many survey items from the Canadian Problem Gambling Survey Instrument (CPGI) used by Doiron¹ were repeated.^{7,8}

The CPGI gambling involvement questions were included, with modifications to allow for: (1) more accurate measurement of online gambling; (2) updated gambling activity descriptions to reflect temporal changes in gambling activities; (3) updated frequency response options to allow for comparisons with other major surveys; and (4) refined skip patterns to reduce survey respondent load by limiting follow-up questions to gambling activities for which responses would provide meaningful information.

The content and order of the nine-item Problem Gambling Severity Index (PGSI) questions from the CPGI were replicated exactly^{7,8} and PGSI questions were asked of all past-year gamblers as per Doiron.¹ Two additional unscored CPGI questions about problem gambling recognition and gambling as a way of escaping problems were retained in an effort to capture additional information about potentially treatment-responsive gamblers.

To assist in identifying potential subgroups of at-risk gamblers, CHCR and DHW staff decided to include several additional survey items to further examine:

- *Relevant social determinants of health*
 - Income and social status (i.e., sources of income/financial assistance)
 - Social environments/Social support networks (i.e., sense of community belonging)

- Access to health services (i.e., awareness of toll-free PEI Gambling Support Line; awareness of in-person individual counselling for gambling issues)
- *Global measures of health and wellbeing*
 - General life satisfaction
 - Mental health
 - Life stress
- *Associations between gambling participation and potential risk factors*
 - Alcohol and drug use while gambling
 - Perceived relationship between self-reported life problems and gambling (i.e., alcohol use problems, cannabis use problems, increased worry, decreased hope, and decreased self-control)
- *Online gambling*
 - Online gambling was measured differently from the 2006 PEI survey, which included “Gambling on the Internet” as one of twenty items in the initial questions about past-year participation in different gambling activities.¹ While this assessment method has been standard practice in many surveys to date, Williams et al.⁹ explained how this creates overlapping categories that can result in imprecise estimates and an inability to distinguish which gambling activities were played online.

Given that one of the primary objectives of this 2019 gambling study was to determine the prevalence of online gambling, we chose to slightly adapt the gambling activity participation questions to allow for a more precise measurement of online gambling, while limiting the impact on comparability of the previously measured gambling activity categories.

Additional survey questions about gambling methods/locations were based on feedback received from DHW staff. They identified the following gambling activities as being potentially played online and holding value to further examine access methods: lottery tickets, daily lottery tickets, instant win tickets, bingo, electronic gambling machines, casino table games, horse race bets, Sport Select, and sport pools. Survey respondents who indicated past-year participation in any of these gambling activities were then asked a follow-up question for each relevant activity about whether they played the activity in-person, online, or both (method adapted from Williams et al.⁹)

Survey items were also added to examine substance use and mental health issues:

- *Alcohol consumption*
 - Alcohol Use Disorders Identification Test (AUDIT-C).^{10,11}
- *Drug use, life satisfaction, mental health, stress, and community belonging*
 - Based on survey items from 2018 Canadian Community Health Survey.¹²
- *Problems with substance use/psychological issues and their perceived relationships with gambling*
 - Two-step method for measuring gambling-related harms.¹³

To allow for comparisons with other surveys, standard questions were asked about demographic characteristics including age, gender, marital status, geographic location, educational attainment, and total household income.

To allow for new survey items while maintaining a reasonable survey length, CHCR and DHW staff used an iterative process to select questions from the 2006 survey that could be removed. This process focused primarily on identifying the following types of survey questions for potential elimination: (1) personal behaviours, symptoms, and consequences that overlapped with other survey item content; (2) widely-acknowledged and well-described problem gambling risk factors; (3) double-barreled survey questions that would present interpretation difficulties (e.g., alcohol or drug problem; drunk or high); (4) dated questions (e.g., prevalence and impact of watching television gambling events); and (5) questions that contributed limited information to the 2006 analyses.

CHCR staff also recommended the inclusion of five questions from the recently developed CPGI-Public Health to broadly assess the impact of gambling harm to others (i.e., partner, family, neighbourhood, friends, and coworkers).^{14,15} However, these questions were eliminated during the final round of survey instrument revisions in the interest of survey brevity.

Variables

Most variables used in this report are self-explanatory, as they correspond directly to the individual survey questions shown in Appendix A. However, as some variables were derived from information in multiple survey questions, we have provided a brief description of these variables below for clarity.

Past-year gambling participation

Each gambling participant was asked about the frequency of their past-year participation (either in-person or online) in specific gambling activities, with response options ranging from 'Never' to 'Several times a week'. The dichotomous past-year gambling participation variable (yes/no) classified respondents as past-year gamblers if they indicated *any* gambling participation (i.e., less than once a month or more often) in one or more gambling activity in the past year. A total of 1,191 survey respondents were categorized as past-year gamblers or non-gamblers, with less than one percent of respondents unable to be classified due to missing data.

Past-year participation in online gambling

As described in the previous 'Survey Instrument' section, respondents who indicated past-year participation in any of the gambling activities with a potential online component of interest were then asked a follow-up question for each relevant activity about whether they played the activity in-person, online, or both. All other gambling activities were categorized as in-person activities. Each survey respondent who provided valid responses for all relevant questions (n = 1,173) was then classified according to the gambling method(s) they reported using during the previous year across all reported gambling activities: (1) In-person gambling only, (2) Both in-person and online gambling, or (3) Online gambling only. Due to the small sample size of online gamblers, we combined the "both in-person and online gambling" and "online gambling only" categories so that gamblers were classified as having exclusively gambled in-person versus having participated in any online gambling in the past year.

Hazardous drinking

The 3-item Alcohol Use Disorders Identification Test (AUDIT-C) was used to identify potentially hazardous drinkers. The three survey questions asked about past-year drinking frequency, amount (i.e., number of drinks on a typical drinking day), and frequency of binge drinking (i.e., five or more drinks on one occasion). AUDIT-C scores were calculated according to the standard accepted method, with each question response scored from 0 to 4 points, and the total scores on a scale of 0-12. Higher AUDIT-C scores indicate a higher likelihood of the respondent's drinking impacting their health and wellbeing.^{10,16} Widely accepted gender-specific cutoffs were used to identify potentially hazardous drinking in women (3 or more) and men (4 or more).

Problem Gambling Severity Risk (PGSI) subtypes

A total PGSI score was calculated for each survey respondent who was a past-year gambler and provided valid responses for all nine scoring PGSI questions (see Table 2 for a detailed list of PGSI questions). Each question was assigned a score according to the response: 0 for "Never", 1 for "Sometimes", 2 for "Most of the time", and 3 for "Almost always", with total scores ranging between 0 and 27 points. PGSI scores were used to classify past-year gamblers into gambling risk subtypes according to the Canadian Program Gambling Index methods.^{7,8} Non-problem gamblers (PGSI = 0); Low-risk gambler (PGSI = 1-2), Moderate-risk gambler (PGSI = 3-7); Severe-risk gambler (PGSI = 8+). Subtypes were further combined into categories where appropriate for research questions and/or data quality issues: At-risk gambler (PGSI = 1+); Moderate-to-severe risk gambler (PGSI = 3+). More details about the PGSI classification methods are provided in the 'Gambling Risk in PEI: Classification of Gambling Risk' section.

Category selection methods

For variables with several categorical response options, decisions were required about which categories to combine for analyses. The preferred option is always to retain as many categories as possible to minimize information loss. However, in small surveys, unreliable estimates and small cell sizes often result when variables with numerous categories are stratified by other variables of interest.

For each variable used in this report, decisions about category aggregation were made by considering the following factors: (1) categories used in other comparable publications and face validity of categories; (2) adequacy of cell sizes; (3) coefficient of variation (CV); and (4) consistency of resulting estimates for variables at different levels of category aggregation.

After identifying suitable categories for each variable in the initial step, the final three steps were accomplished by examining estimates for each variable when stratified by the main outcomes: past-year gambling participation, online gambling participation, and PGSI gambling risk subtypes. These estimates were re-run with sequential category options to examine how the categorization decisions impacted adequacy of cell sizes, CV, and associations/trends. As results needed to be suppressed when there were cell sizes of less than five and/or contained a high level of error/unreliability (i.e., estimates with CV > 33.3%), category options were chosen that minimized these issues while retaining as much detail as possible to address the major research questions.

Survey Administration and Sampling Methods

The target population for this study was Prince Edward Island residents aged 18 and older. The aim was to complete 1,200 surveys in total across three strata: 400 in Kings County, 400 in Queens County, and 400 in Prince County. Soft targets were set for gender and age (18-34, 35-54, and 55 and older) to ensure a representative sample of Islanders. These quotas prevent collection of data from a sample so out of line with PEI's demographic composition that it would lead to unreasonably high or low survey weights. The telephone sample was generated so that approximately 70% of calls were to landlines (90% listed; 10% unlisted), and 30% to cell phones, which is consistent with the percentage of Islanders estimated to have cell phones only versus landlines. Survey data was collected using Computer-Assisted Telephone Interview (CATI) software. Survey data collection occurred between November 2019 and January 2020. Survey response information is included below. As survey response rates are often calculated and reported using a variety of methods and terminology, we have presented methods and estimates for several commonly reported rates.

Contact Rate	$(\text{Completes} + \text{Partials} + \text{Refusals} + \text{Other}) / (\text{Completes} + \text{Partials} + \text{Refusals} + \text{Other} + \text{Non-contact})$	56.5%
Cooperation Rate	$\text{Completes} / (\text{Completes} + \text{Partials} + \text{Refusals} + \text{Other})$	16.3%
Response Rate	Contact Rate x Cooperation Rate	9.2%
Untraceable Rate	Ineligible Numbers/Total Calls	20.1%

Data Analysis

Estimation

Survey weights were assigned to each respondent in the survey by Advanis. These weights indicate the number of people in the PEI population that are represented by each survey respondent. We used these survey weights in our calculations to weight the survey data to resemble the PEI population more closely. This ensured our estimates were representative of the PEI population distribution by age, sex, and county, and not just estimates based on distributions within the sample of survey respondents.

We completed all analyses in Stata versions 15 and 16 using survey estimation commands. Weighted proportions and 95% confidence intervals (indicated as error bars in the figures) were calculated for each variable of interest, with rounded estimates used for the presentation of data. In some cases, percentages may not add to 100%, and rounded estimates in tables, figures, and appendices may vary slightly due to rounding error.

We used chi-square analyses to test for global significance of associations between survey variables. The results of these analyses are indicated in figures and tables with $p < 0.001 = ***$, $p < 0.01 = **$, $p < 0.05 = *$. When variables with significant associations had more than two categories, post-hoc pairwise comparisons were performed for all variable combinations using the Stata `lincom` test, with a Bonferroni adjustment ($\alpha = 0.05 / \text{number of comparisons}$).

Appendix B shows the unweighted percentage of missing data for key survey variables. In most cases, the percentage of missing data was less than 1%. Sample sizes for prevalence calculations within and between report sections sometimes differed due to inclusion criteria/skip patterns

relevant to specific survey questions (e.g., alcohol use questions were not asked for respondents who reported no past-year use of alcohol), and respondents choosing not to respond, or responding “don’t know” to specific survey questions. Those who were unsure or refused to provide a response were excluded from the analyses unless otherwise noted. In line with recommendations from Statistics Canada, unweighted counts were not included alongside weighted proportions.

Quality Evaluation

Advanis, a company with experienced project staff and over 25 years experience in conducting telephone survey research, was hired to provide support in the development and execution of the survey. Advanis’ management staff and team of trained interviewers provided ten hours of pilot test survey calls prior to initiating data collection. The feedback obtained from participants and interviewers during the pilot test informed revisions of the final survey instrument. We also piloted the survey instrument with a Patient/Public Partner to collect feedback regarding the survey questions, flow, length, and any other issues that could be identified to aid in survey refinement.

Disclosure Control

Researchers are ethically prohibited from releasing information about study participants which could identify them. Cell sizes of less than five were suppressed throughout this report to protect study participant confidentiality. This is indicated in tables by using an “x”. In cross-tabulations where one cell was less than five, all estimates were suppressed to prevent residual disclosure.

Estimate Accuracy

To assess the reliability of survey estimates, we calculated the coefficient of variation. The coefficient of variation (CV) is the ratio of the standard error of an estimate to the estimate itself, expressed as a percentage. Table 1 shows the CV cutoffs determined by Statistics Canada.¹⁷ We used these cut offs to describe the reliability of estimates, and to make decisions about data categorization (see ‘Variables’ section for further details). The color scheme shown in Table 1 was used to document the reliability of all estimates in the appendix tables.

Table 1. Data Reliability Categories¹⁷

Data		
Reliability	CV value	Description
Sufficiently reliable	≤ 16.5%	No release restrictions: data are of sufficient accuracy that no special warnings to users or other restrictions are required.
Potentially unreliable	> 16.5% & ≤33.3%	Release with caveats: data are potentially useful for some purposes but should be accompanied by a warning to users regarding their accuracy.
Highly unreliable	> 33.3%	Not recommended for release: data contain a level of error that makes them so potentially misleading that they should not be released in most circumstances. If users insist on inclusion of Category 3 data in a non-standard product, even after being advised of their accuracy, the data should be accompanied by a disclaimer. The user should acknowledge the warnings given and undertake not to disseminate, present or report the data, directly or indirectly, without this disclaimer.

Interpretation of Results

The results of this cross-sectional survey can be used to understand the prevalence and correlates of gambling participation, at-risk and problem gambling, and online gambling in PEI at the time of data collection (Fall/Winter 2019-20). Caution should be used in applying these results to the current state of gambling in PEI as this data was collected prior to the COVID-19 pandemic. These results can also be compared to previous provincial gambling prevalence surveys to assess changes in gambling behaviours and correlates over time. Comparisons to previous survey results have been highlighted throughout this report, including appropriate disclaimers regarding differences in methodology which may limit the comparability of estimates.

Study Participant Overview

Our sample included 1,201 Islanders. While the survey sampling method placed soft quotas on age and gender, some differences between the survey sample and the total PEI adult population remained due to differing response rates. As shown in Appendix C:

- Individuals aged 18-34 are underrepresented, and individuals aged 55+ are overrepresented.
- Queens County is underrepresented, and Kings County is overrepresented. For Kings County, this was partly due to soft quotas used to ensure sufficient numbers for the best possible estimates for each county.
- Women are slightly overrepresented.

As shown in Appendix C, the weighted estimates for county, age, and gender are more representative of the PEI population. The weighted estimates used in this report should minimize bias in the analysis that may have otherwise resulted from the sample characteristics in these areas.

Individuals who were never married are underrepresented in our sample and those who are divorced, widowed, or separated are overrepresented. As shown, the age, gender, and county weighted estimates for marital status are more in line with those from the PEI census, indicating that this weighting helped with representativeness in this area.

Our sample underrepresents those with a high school diploma or less and overrepresents those having completed a bachelor's or more advanced degree. Additionally, our sample overrepresents those with an annual household income of less than \$40,000 per year and underrepresents those with an annual household income of more than \$80,000 per year. Weighting did not substantially correct the non-representativeness in these areas (though it did improve the representativeness of those with a household income of more than \$80,000 per year), and therefore this should be taken into consideration when interpreting survey results.

RESULTS AND INTERPRETATION

Gambling Participation in PEI

Past-Year Prevalence of Gambling

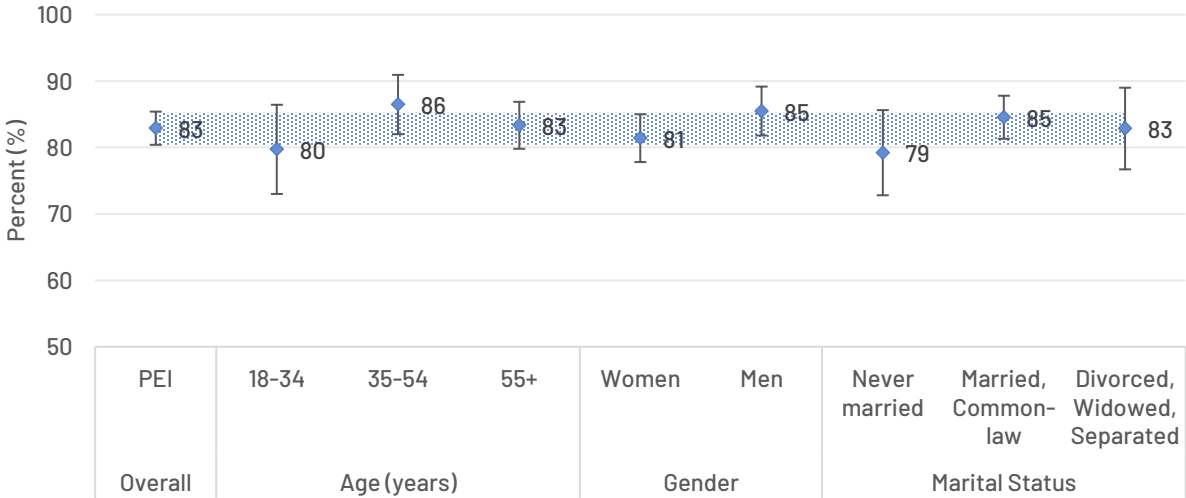
Overall, an estimated 83% of Islanders aged 18 and over had participated in one or more gambling activities in the 12-month period prior to the survey (Figure 1). For approximately 16% of the population, the only gambling activity reported was the purchase of raffle or fundraising tickets. Prevalence estimates presented in this report include gamblers who had only participated in charitable gambling, which is consistent with Doiron¹ and the opinions of other experts.⁹ However, previous studies have suggested that only approximately 17% of North American adults consider purchasing raffle or fundraising tickets to be a form of gambling⁹. For this reason, estimates of gambling prevalence excluding individuals who only participated in these charitable gambling activities are presented in Appendix D. This section of the report highlights specific instances where excluding the proportion of the population who only participated in charitable gambling changes the overall significance of the relationship between gambling prevalence and demographic categories.

Of the survey respondents who reported the purchase of raffle or fundraising tickets as the only form of gambling they participated in in the last year, so few were at-risk gamblers that we cannot report this data due to cell suppression rules. For the remainder of this report, we chose to include charitable-only gamblers to keep estimates consistent with previous PEI prevalence studies, since excluding this large group of non-problem gamblers would inflate the prevalence estimates for at-risk gambling.

Demographic Characteristics of Past-Year Gamblers

Past year gambling participation on PEI was not significantly different across age groups, gender, or marital status (Figure 1). However, when charitable gambling was excluded, men were significantly more likely than women to have participated in gambling in the past year (71% vs. 64%, respectively; $p = 0.02$; Appendix D).

Figure 1. Gambling participation by age, gender, and marital status, PEI, 2019.

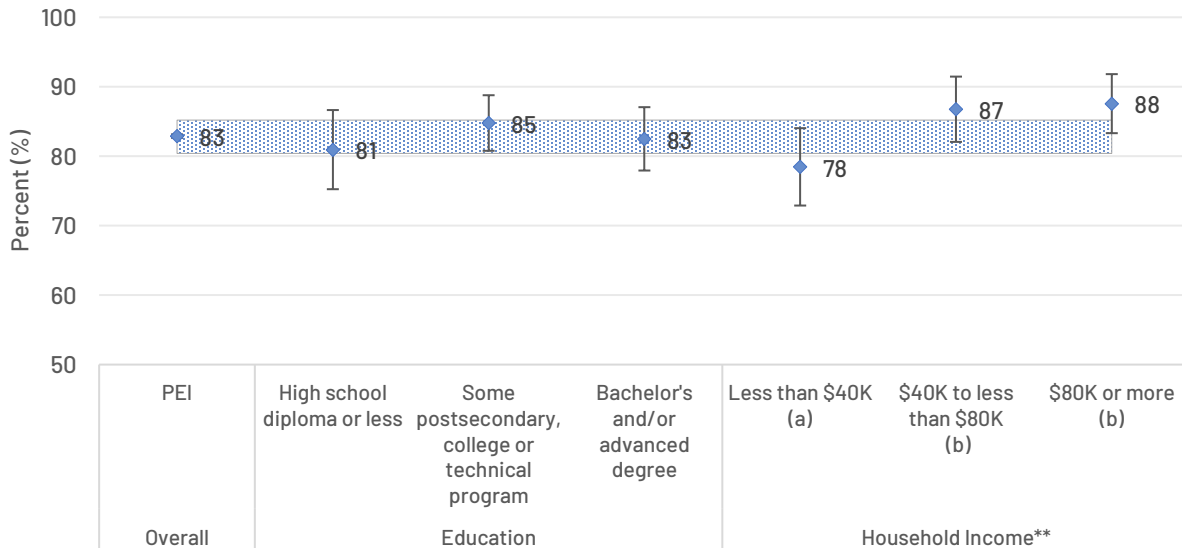


Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who provided valid responses for all gambling activity questions and relevant demographic questions. The blue band in the figure represents the overall PEI estimate and 95% confidence interval. Some estimates differ slightly from Appendix D due to rounding.

As shown in Figure 2, past-year gambling participation did not differ significantly by education level but varied significantly by household income. Islanders with a household income of less than \$40,000 per year were less likely to participate in gambling than those in households with incomes of \$40,000 to \$80,000 and more than \$80,000 per year. When charitable gambling was excluded, gambling participation was not significantly different between household income categories (65.9%, 67.5%, and 68.8% of Islanders with household incomes of less than \$40,000, \$40,000-\$80,000, and greater than \$80,000, respectively; $p = 0.76$).

The association between gambling participation and past-year employment status was examined. Employment status was categorized as: employed at any point in the past year, unemployed for the past year (i.e., unemployed and looking for work with no period of employment), and out of the labour force (students, retirees, homemakers, and those unable to work due to illness, injury, or disability). Due to small cell sizes, we were unable to report on the association between employment and any form of gambling participation or risk in this report.

Figure 2. Gambling participation by highest level of education completed and household income, PEI, 2019.

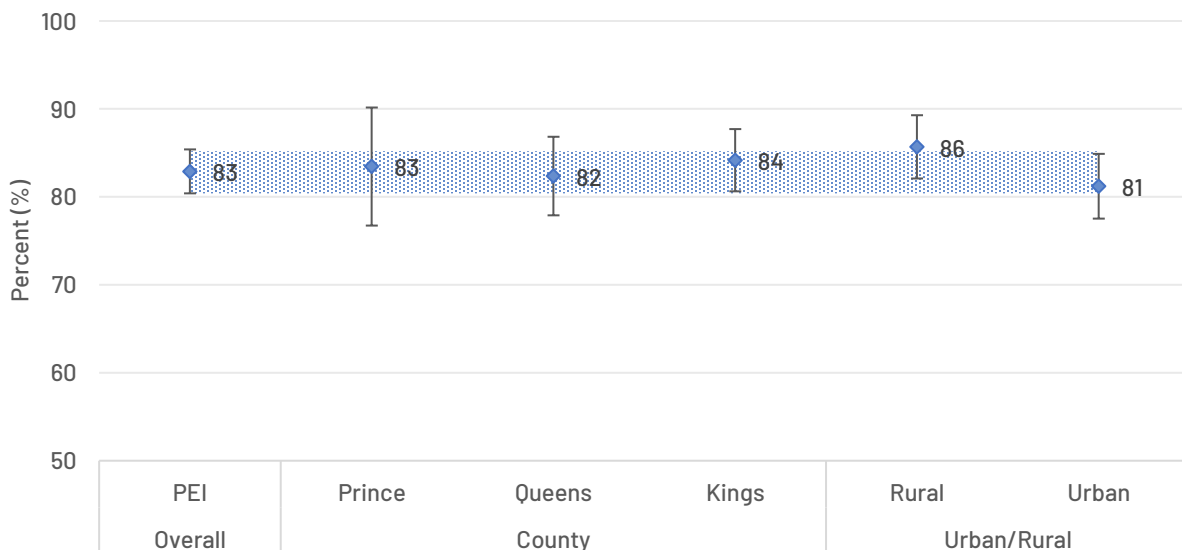


Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who provided valid responses for all gambling activity questions and relevant demographic questions. The blue band in the figure represents the overall PEI estimate and 95% confidence interval. Some estimates differ slightly from Appendix D due to rounding.

p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b) had estimates that differed significantly from one another.

The prevalence of gambling participation was examined across Prince, Queens, and Kings Counties, and between Islanders living in urban versus rural communities. Gambling participation was similar across Kings, Queens, and Prince counties and between urban and rural Islanders (Figure 3), regardless of the inclusion of charitable gambling.

Figure 3. Gambling participation by county and rurality, PEI, 2019.

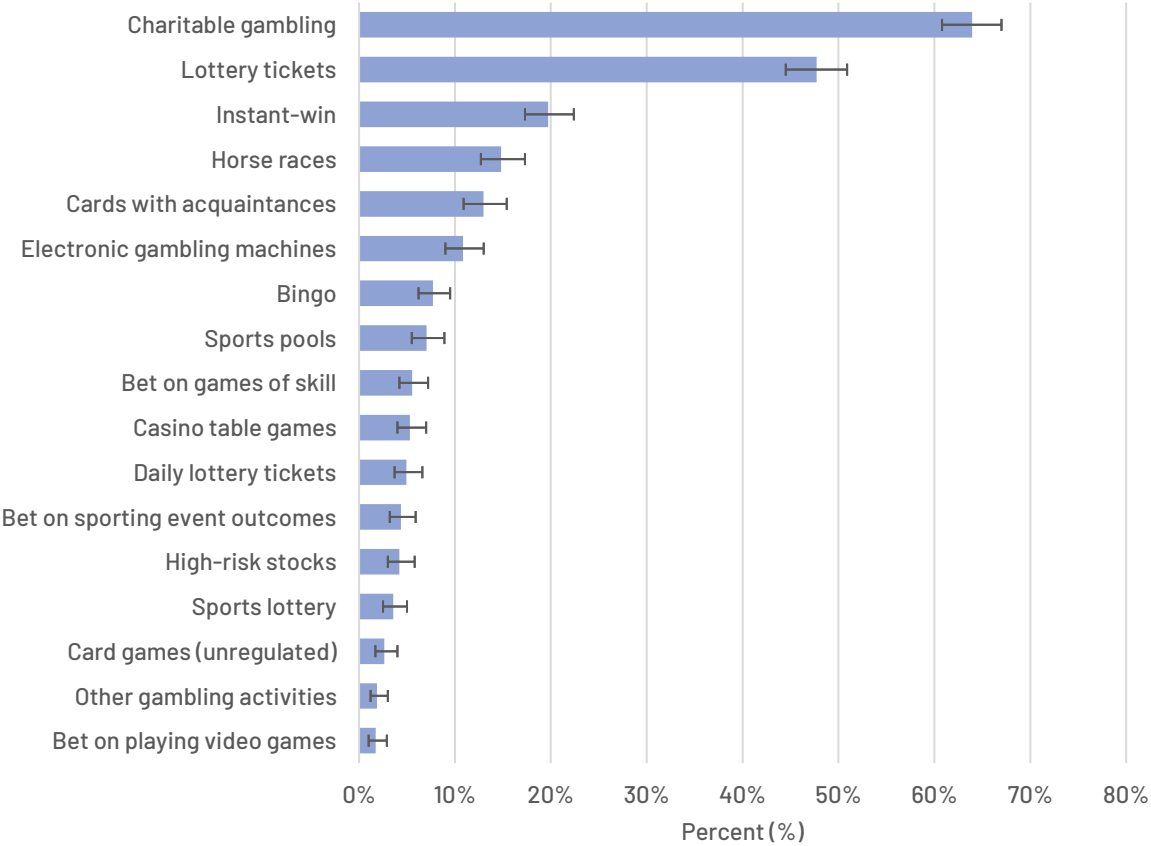


Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who provided valid responses for all gambling activity questions and relevant demographic questions. The blue band in the figure represents the overall PEI estimate and 95% confidence interval.

Past-Year Participation in Specific Gambling Activities

The prevalence of past year participation in various gambling activities is illustrated in Figure 4. The most common activities Islanders reported participating in the past year were purchasing raffles and/or fundraising tickets (i.e., charitable gambling; 64%) and lottery tickets (48%), followed by instant-win tickets (20%), betting on horse races (15%), betting on card or board games with family or friends (13%), and playing on electronic gambling machines (11%). There was an increase in the prevalence of charitable gambling and betting on horse races (by 27% and 100%, respectively) since Doiron’s 2005 survey. The sale of lottery tickets and instant-win tickets have decreased in the same time period by 26% and 40%, respectively. It is difficult to assess changes in electronic gambling machine usage since 2005 as the categorization of this gambling activity was not consistent between surveys.

Figure 4. Participation in specific gambling activities, PEI, 2019.



Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who provided valid responses to each gambling activity question (see Appendix E for additional details about gambling activity participation estimates).

While a detailed examination of demographic characteristics for past-year participants of each gambling activity is beyond the scope of this study, for the sake of completeness these weighted estimates have been included in Appendix F.

Online versus In-Person Gambling in PEI

Past-Year Participation in Online Gambling

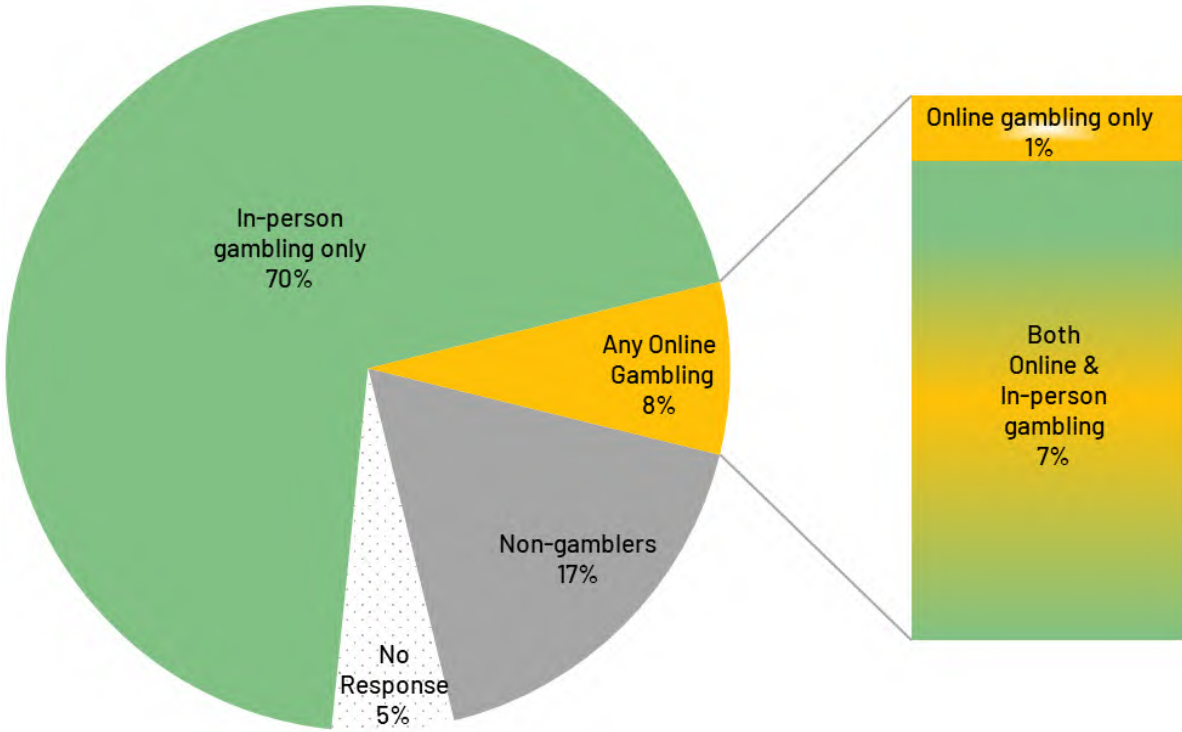
For gambling activities with online options, participants were asked to identify whether they had participated in the gambling activity in-person, online, or both. The prevalence of participation in any online gambling was calculated for survey respondents with complete responses to all gambling activity frequency questions. A large proportion of participants chose not to respond or did not know the answer to method of access survey questions. For several gambling activities, there were a higher number of respondents who chose not to answer the question than who reported online gambling. As such, we have illustrated in Figure 5 the weighted proportion of respondents who were non-gamblers, in-person gamblers only, and online gamblers alongside the proportion of respondents who chose not to answer these questions.

While this missing data results in information loss and reduced statistical power for analyses examining online versus in-person gambling, another important potential consequence to consider is the potential for selection bias to impact estimates. The impact of missing data depends on whether non-response to the online gambling question(s) occurred at random, or if it was related to the online gambling status, level of gambling risk, or some other relevant characteristic that was more common in participants with no response. For example, if a higher proportion of online gamblers than in-person gamblers chose not to respond to online gambling questions, the online gambling prevalence estimate would be an underestimate. If the non-responding online gamblers were also more likely to be at-risk gamblers, the strength of the association between online gambling and gambling risk would also be underestimated. In the case of this survey, participants may have been reluctant to report forms of online gambling due to the legality of participation in unregulated online gambling platforms. Because of this, the reported prevalence of online gambling in PEI may be an underestimate. Appendix G1 details the prevalence of online gambling by demographic variables for these categories of participants, including those for whom this data is missing.

When the distribution of demographic characteristics was compared between survey participants who provided valid “method of access” responses (i.e., responders) and those who responded “don’t know” or chose not to respond (i.e., non-responders), the only significant difference noted was in education. The distribution of education levels among the non-responder subgroup showed that they had attained lower levels of education than the responder subgroup. A higher proportion of non-responders than responders had completed a high school diploma or less (39% versus 22%, respectively), and a smaller proportion of non-responders than responders had completed at least a bachelor’s degree (21% vs 36%, respectively).

Assuming the two most extreme scenarios, where respondents who chose not to provide information about the location of their gambling were either all in-person only gamblers, or all online gamblers, the prevalence of past-year online gambling in the PEI population can be estimated to range from approximately 8% to 13%. Of the 8% of respondents who reported online gambling, approximately 87% (7% of all respondents) reported gambling both in-person and online, while the remaining 13% (1% of all respondents) reported gambling online only. When looking among past-year gamblers only (and excluding non-responders), the proportion of online gamblers was approximately 10%.

Figure 5. Participation in online and in-person gambling including non-response data, PEI, 2019.

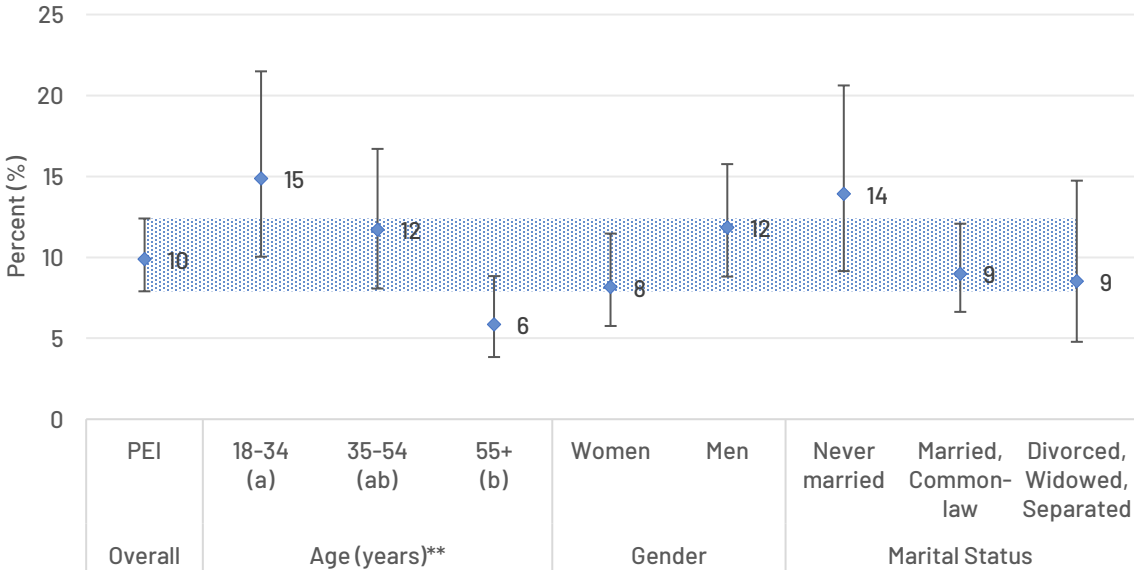


Weighted prevalence estimates calculated from survey respondents who provided valid responses for all gambling activity questions.

Demographic Characteristics of Online Gamblers

The following section examines the demographic characteristics of survey respondents who reported past-year gambling, and for whom there was complete gambling location information for all gambling activities. The proportion of Island gamblers who reported gambling online (as opposed to in-person only) in the past year was examined across demographic variables (Figure 6); see Appendix G2 for details. Island gamblers between 18 and 34 years of age were more likely to report online gambling in the past year compared with those aged 55 and older. Online gambling prevalence among gamblers was similar between men and women and was not associated with marital status.

Figure 6. Proportion of gamblers who reported online gambling, by age, gender, and marital status, PEI, 2019.

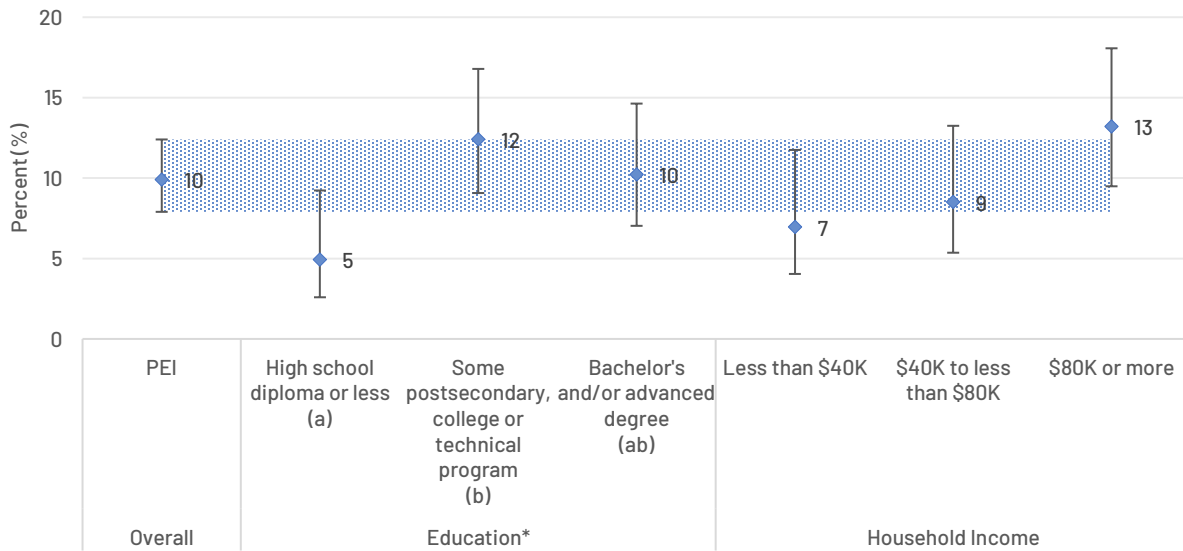


Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who were past-year gamblers and provided valid responses about method/location of gambling access for gambling activities they had participated in during the previous year. The blue band in the figure represents the overall PEI estimate and 95% confidence interval.

p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b) had estimates that differed significantly from one another.

As shown in Figure 7, online gambling participation among Island gamblers was lower among those with a high school diploma or less compared with those who had some post-secondary education or who had completed a college or technical program, but not significantly different from those who had received a bachelor's or more advanced degree. Online gambling participation did not vary significantly by household income.

Figure 7. Proportion of gamblers who reported online gambling, by highest level of education completed and household income, PEI, 2019.

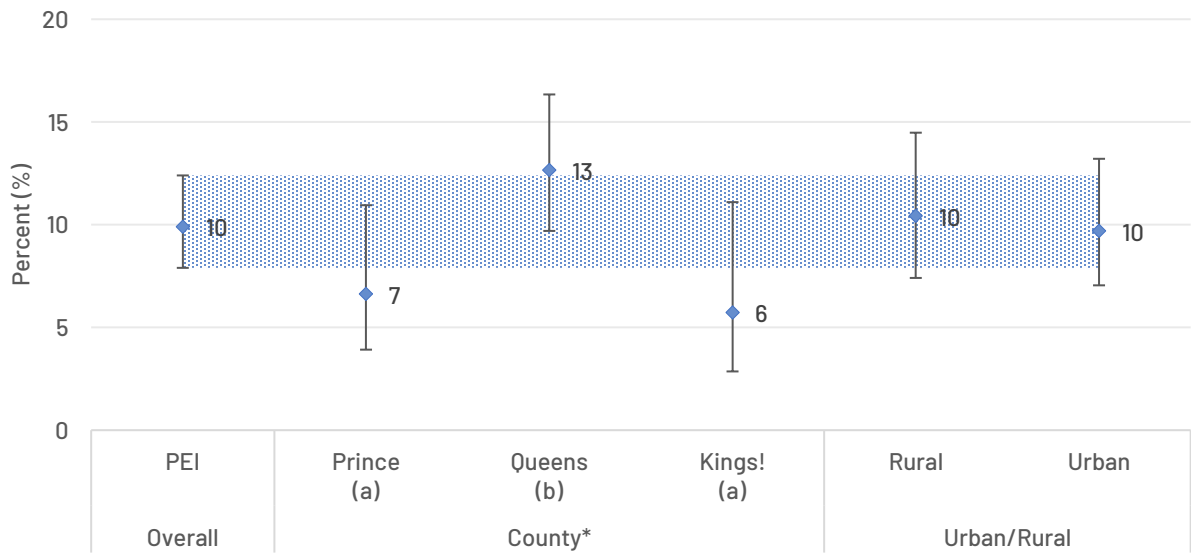


Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who were past-year gamblers and provided valid responses about method/location of gambling access for gambling activities they had participated in during the previous year. The blue band in the figure represents the overall PEI estimate and 95% confidence interval.

p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b) had estimates that differed significantly from one another.

Figure 8 illustrates the prevalence of past-year online gambling among Island gamblers by county and by rurality. Online gambling was significantly more prevalent in Queens County than Prince County or Kings County but did not differ between Islanders living in urban versus rural areas.

Figure 8. Proportion of gamblers who reported online gambling, by county and rurality, PEI, 2019.



Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who were past-year gamblers and provided valid responses about method/location of gambling access for gambling activities they had participated in during the previous year. The blue band in the figure represents the overall PEI estimate and 95% confidence interval.

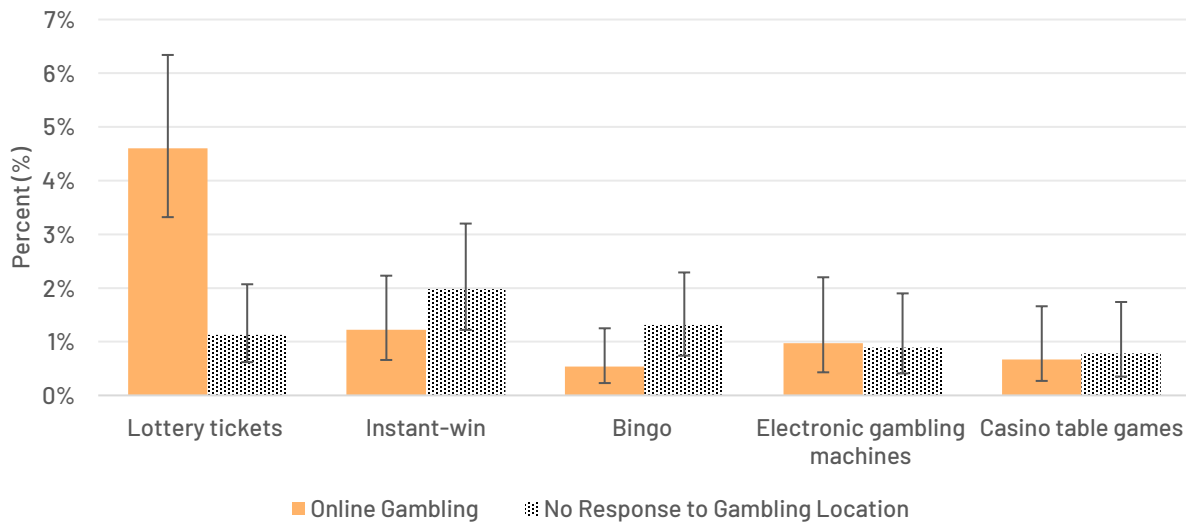
p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b) had estimates that differed significantly from one another.

! Interpret with caution - highly unreliable estimate.

Gambling Activity Participation and Online Gambling Status

The prevalence of online gambling participation among past-year gamblers for specific gambling activities is illustrated in Figure 9, alongside the proportion of Islanders who chose not to respond or answered that they did not know when asked about the method of access of their gambling for each activity. We are unable to report on the prevalence of purchasing online daily lottery tickets, and betting on horse races, sports lotteries, and sports pools due to cell sizes smaller than five. For all activities except for purchasing lottery tickets, the proportion of missing data is more than or similar to the proportion of gamblers indicating participation in online gambling. This makes it difficult to estimate the overall prevalence of online gambling for each activity. Despite the large amount of missing data, it appears that the activity with the highest prevalence of online participation is the purchase of lottery tickets. See Appendix H for further details.

Figure 9. Online participation and non-response for specific gambling activities, PEI, 2019.



Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who were past-year gamblers.

The relationships of online gambling with gambling risk and substance use are presented in the 'Online Gambling Participation and Gambling Risk' and 'Substance Use and Gambling' report sections.

Gambling Risk in PEI

This section of the report examines the prevalence of gambling in Prince Edward Island by Problem Gambling Severity Index (PGSI) risk levels. The nine-item PGSI was used to classify PEI gamblers as being in one of four PGSI subtypes that differ by level of gambling risk: non-problem gamblers, low-risk gamblers, moderate-risk gamblers, and severe-risk gamblers. Non-gamblers were examined separately from non-problem gamblers due to their distinct characteristics. This report section also describes gambler subtypes by their demographic characteristics, gambling activities and behaviours, and other correlates such as substance use, aspects of mental health, and other psychological factors.

Classification of Gambling Risk

Four gambling risk subtypes were based on survey participant responses to the nine scoring PGSI questions. The PGSI questions were only asked of past-year gamblers, with total scores ranging between 0 and 27 points. Each question was assigned a score according to the response: 0 for “Never”, 1 for “Sometimes”, 2 for “Most of the time”, and 3 for “Almost always”.

Past-year gambling participation and total PGSI scores were used to classify past-year gamblers into gambling risk subtypes according to the Canadian Program Gambling Index methods and descriptions^{7,8}:

PGSI Score	PGSI Gambler Subtype	Description
n/a	Non-gambler	Survey respondents in this group had not participated in any gambling activities in the year prior to the survey. They were not asked survey questions related to gambling participation, including the PGSI questions.
0	Non-problem gambler	Survey respondents in this group responded “Never” to all questions about problem gambling behaviours and did not report any adverse consequences of gambling. Frequent gamblers with large time and money investments could still fit into this category, including professional gamblers.
1-2	Low-risk gambler	Survey respondents in this group responded “Never” to most questions about problem gambling behaviour and adverse consequences, with one or two “Sometimes” responses or a single “Most of the time” response. Low-risk gamblers may be at risk when they are heavily involved in gambling and have one or two other problem gambling correlates, but they are not likely to have experienced adverse consequences from their gambling.
3-7	Moderate-risk gambler	Survey respondents in this group responded “Never” to most questions about problem gambling behaviour, with one or more “Most of the time” or “Always” responses. Moderate-risk gamblers may be at risk when they are heavily involved in gambling and have several other problem gambling correlates. They may or may not have experienced adverse consequences from their gambling.
8+	Severe-risk gambler	Survey respondents in this group had experienced adverse consequences from gambling. Severe-risk gamblers are likely to be heavy gamblers but can be involved in gambling at any level. They may have lost control of their behaviour and are likely to have more problem gambling correlates than other gambler subtypes.

While some researchers have proposed the use of different PGSI cut points,¹⁸ the original PGSI subtype classification system is used in this report to remain consistent with the 2005 PEI gambling prevalence survey.¹ Due to sample size restrictions, many estimates become unreliable and/or must be suppressed due to cell sizes less than five when stratified by the gambling risk groups. In these cases, while the unreliable estimates are not included in the main report, they are presented in appendices with colour codes that indicate the level of accuracy and restrictions/disclaimers for interpreting each estimate.

For the main report, gambling risk level categories are combined where appropriate to increase the reliability of the estimates, and so that the characteristics and experiences of lower-risk gamblers are not excluded from the population-level analyses of gambling impacts and issues.

To accomplish these goals, the following groups are used throughout the report and appendices:

- Moderate-to-severe risk gamblers (PGSI = 3+)
 - Equivalent to the “Gambling Problem” category used in the 2006 “Gambling and Problem Gambling in Prince Edward Island” report.¹
- At-risk gamblers (PGSI = 1+)
 - Past-year gamblers with *any* level of gambling risk
 - Equivalent to “at-risk” and “any-risk” categories used in other gambling prevalence studies and gambling analyses that focused on public health and prevention and social costs.¹⁹⁻²²

While the decision to examine the at-risk gamblers was made in part because of the small sample size and to reduce the risk of participants being identified in the data, there is substantial evidence in the literature suggesting that a greater proportion of the total burden of harm from gambling is associated with low and moderate risk gamblers.^{23,24} For this reason, examining the characteristics and behaviours of gamblers with any level of risk is also important to aid in public health decision making.

The nine scoring and two non-scoring PGSI survey items and the frequency of affirmative responses in past-year PEI gamblers are shown in Table 2. Valid responses for all nine scoring PGSI questions were obtained for 99.1% of past-year gamblers, and respondents who had not gambled in the year prior to the survey were not asked the PGSI questions.

As every PGSI question had small cell sizes and highly unreliable estimates for the “Most of the time” and “Almost always” categories, all response categories were collapsed to examine the prevalence of any affirmative response. The only PGSI question with responses that could be disaggregated further into sufficiently reliable estimates was the question on feelings of guilt about gambling, with 3.7% (95% CI: 2.5%, 5.3%) of past-year gamblers responding “Sometimes” and 1.8% (1.0%, 3.2%) responding either “Most of the time” or “Always”.

Table 2. Affirmative responses to scoring* and non-scoring PGSI statements by PEI gamblers, 2019.

Thinking about the past 12 months...	Sometimes/ Most of the time / Almost Always	
	%	95% CI
Problem Gambling Behaviour (scored)		
*1. How often have you bet more than you could really afford to lose?	3.2%	(2.2% , 4.7%)
*2. How often have you needed to gamble with larger amounts of money to get the same feeling of excitement?	3.0%	(2.0% , 4.5%)
*3. When you gambled, how often did you go back another day to try to win back the money you lost?	3.7%	(2.6% , 5.4%)
*4. How often have you borrowed money or sold anything to get money to gamble?	0.5%!	(0.2% , 1.5%)
*5. How often have you felt that you might have a problem with gambling?	2.5%	(1.6% , 3.9%)
Adverse Consequences (scored)		
*6. How often have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?	2.0%	(1.2% , 3.4%)
*7. How often have you felt guilty about the way you gamble, or what happens when you gamble?	5.5%	(4.1% , 7.5%)
*8. How often has your gambling caused you any health problems, including stress or anxiety?	2.3%	(1.4% , 3.7%)
*9. How often has your gambling caused any financial problems for you or your household?	1.5%	(0.8% , 2.9%)
Other (not scored)		
10. How often have you felt like you would like to stop betting money or gambling but you didn't think you could?	2.0%	(1.2% , 3.3%)
11. How often have you gambled as a way of escaping problems or to help you feel better when you were depressed?	2.9%	(1.9% , 4.4%)

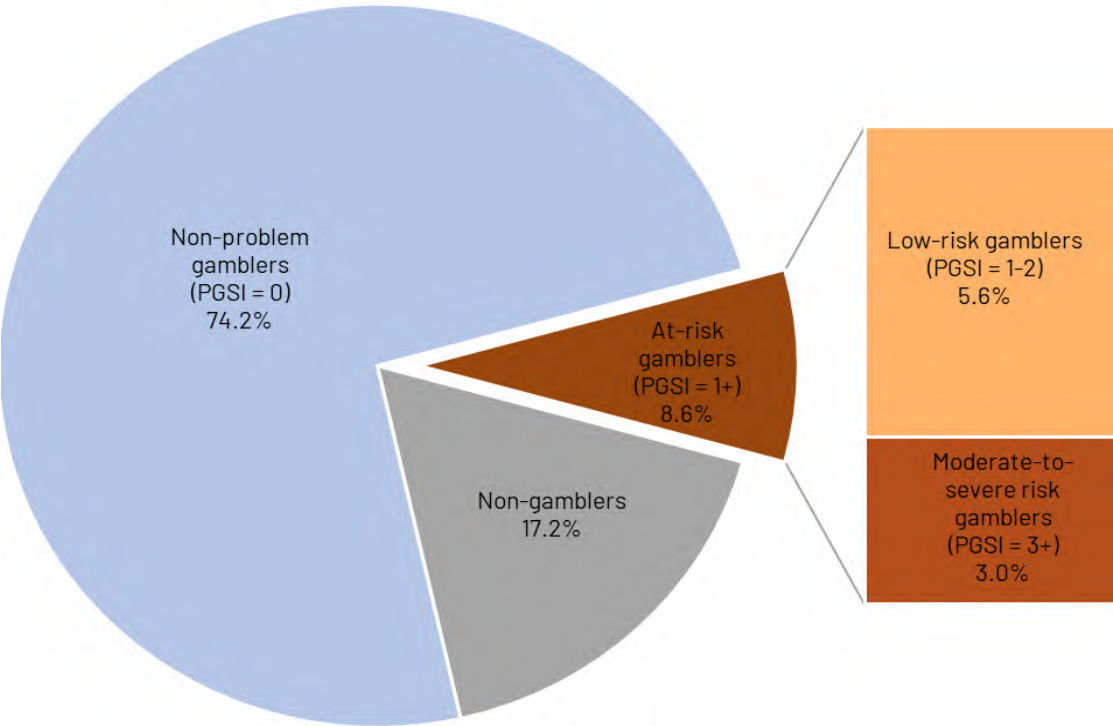
Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who were past-year gamblers and provided valid responses to relevant PGSI survey questions.

! Interpret with caution - highly unreliable estimate

Prevalence of Gambling Risk in Prince Edward Island

In the year prior to the survey, most Islanders were either non-gamblers (17.2%) or non-problem gamblers (74.2%). Figure 10 shows that the overall prevalence of gamblers at any level of risk in the adult population of PEI was 8.6%, with two-thirds of all at-risk gamblers classified as low-risk gamblers. Moderate-risk gamblers and severe-risk gamblers made up the remaining one-third of at-risk gamblers, with a combined prevalence of 3.0%. Prevalence estimates for moderate-risk and severe-risk gamblers were combined due to small cell sizes resulting in unreliable estimates for the individual categories.

Figure 10. Past-year prevalence of gambling status and gambling risk subtypes, PEI, 2019.



Weighted prevalence estimates calculated from survey respondents who provided valid responses for all gambling activity questions and, if past-year gamblers, the scoring PGSI questions used to calculate gambling risk.

According to these 2019 prevalence estimates for gambling risk subtypes and Statistics Canada population estimates for PEI adults aged 18+ years,ⁱ the numbers of Islanders in each gambling risk category were approximately:

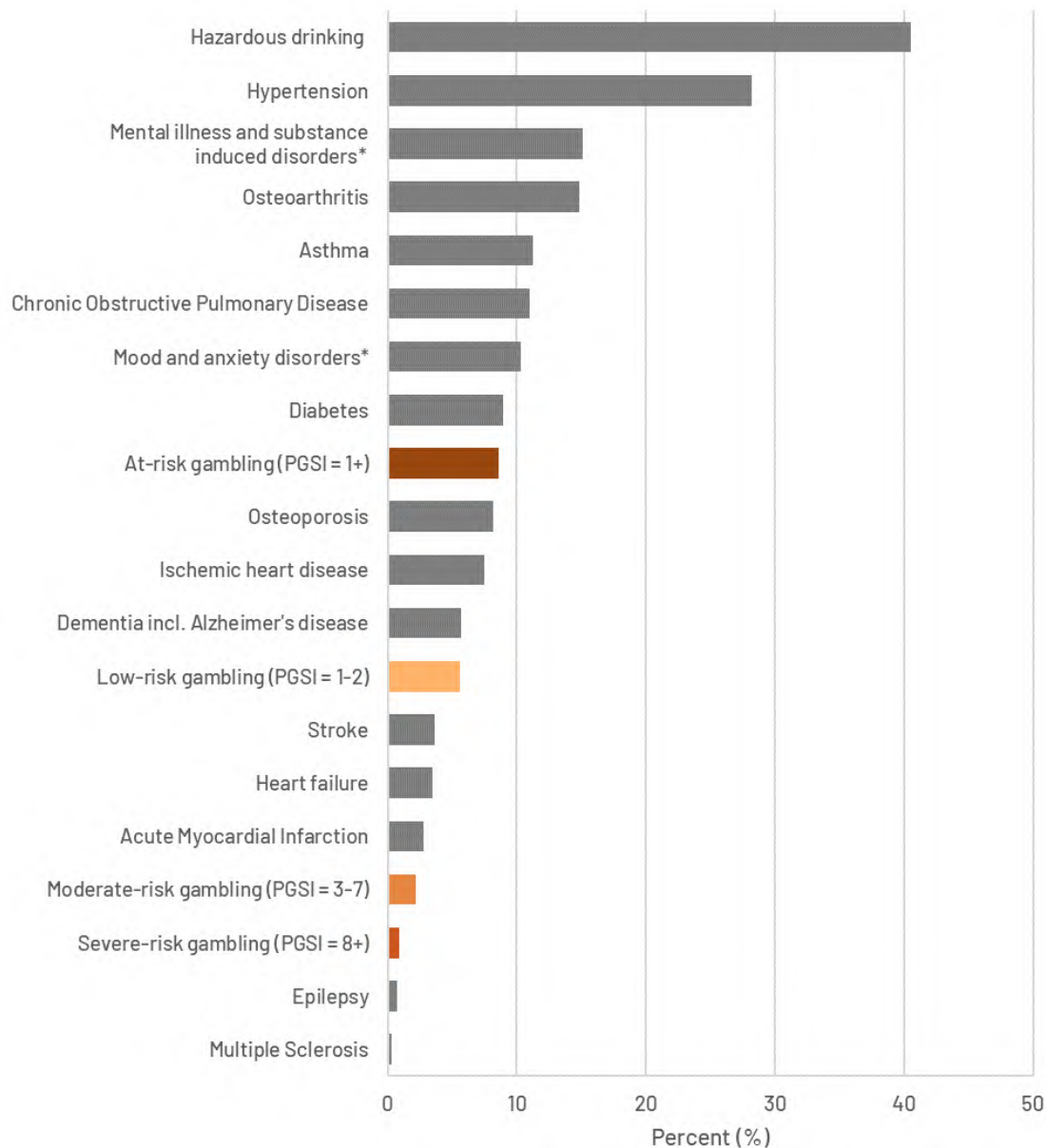
- Non-gamblers: 22,299 (range 19,314 - 25,648)
- Non-problem gamblers: 96,363 (range 92,547 - 99,906)
- Low-risk gamblers: 7,230 (range 5,478 - 9,501)
- Moderate-to-severe risk gamblers: 3,907 (range 2,674 - 5,685)

ⁱ Source: Statistics Canada. Table 17-10-0139-01. 2020 Population estimates, July 1, by census division, 2016 boundaries.

Overall, a total of 8,151 to 15,186 Islanders were at risk of harm from their own gambling.

Figure 11 shows how the overall 2019 prevalence estimate for at-risk gamblers in PEI (PGSI = 1+) is slightly higher than the 2016-17 estimates for osteoporosis and slightly lower than diabetes. Low-risk gambling is twice as prevalent as acute myocardial infarction, but less prevalent than ischemic heart disease. Moderate-risk and severe-risk gambling occur in smaller proportions of the population, but more frequently than conditions such as epilepsy and multiple sclerosis.

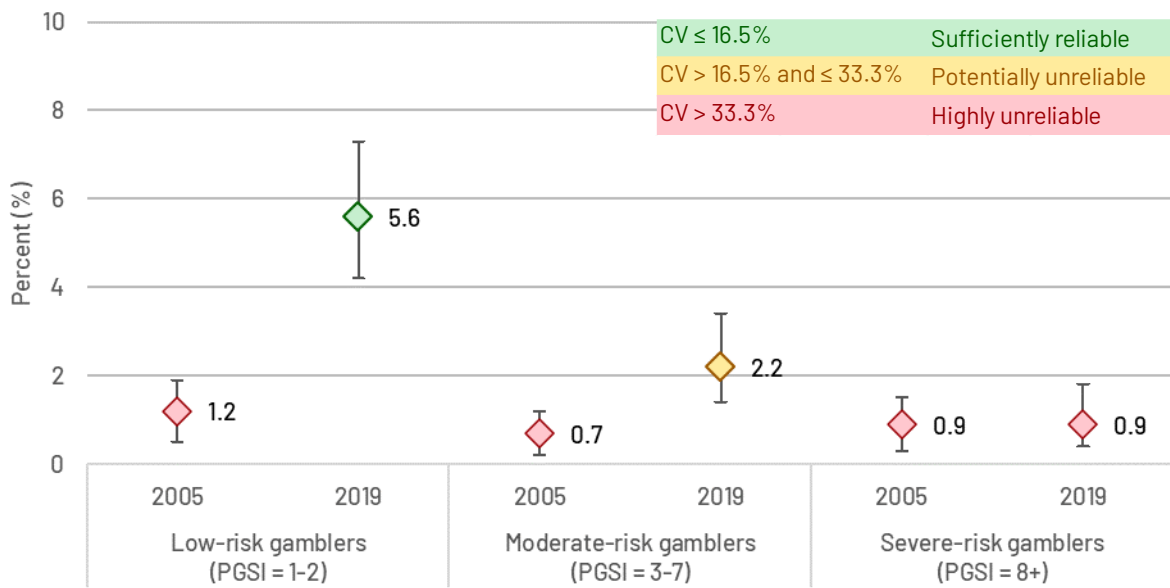
Figure 11. Prevalence of gambling risk subtypes and other health conditions in the Prince Edward Island adult population.



Prevalence estimates for low-risk, moderate-risk and severe-risk gambling, and hazardous drinking (AUDIT-C score of 3+ for women or 4+ for men) were obtained from this 2019 study. Prevalence estimates for all other conditions were obtained from the Canadian Chronic Disease Surveillance System (CCDSS).²⁵ All CCDSS estimates are lifetime prevalence for the most recent year of data available (2016), with the exception of mood and anxiety disorders, and mental illness and substance induced disorders which represent the annual prevalence of use of health services for these conditions.

Figure 12 shows the published prevalence estimates and 95% confidence intervals for gambling risk subtypes in 2005ⁱ alongside the 2019 estimates from the present study.ⁱⁱ While both the 2005 and 2019 PEI gambling prevalence studies used the same PGSI survey items and scoring methods to estimate gambling risk subtypes, **comparisons should be made with caution due to differences in study methods and the unreliability of some estimates due to small sample sizes.** The degree of uncertainty associated with each estimate in Figure 12 was measured by calculating the coefficient of variation (i.e., standard error expressed as a percentage of the estimate). The reliability categories for each estimate are colour-coded in the figure as: green (sufficiently accurate), yellow (potentially useful but caution about accuracy), and red (high potential for inaccurate estimates that could be potentially misleading). See 'Methods: Data Analysis' section for further details.

Figure 12. Prevalence estimates for gambling risk subtypes in 2005 and 2019, PEI residents aged 18+ years.



Source: 2005 self-weighted estimates;ⁱ 2019 weighted estimates (CHCR, present study). Estimates have been color coded to illustrate the reliability of the estimates based on the coefficient of variation.

These caveats notwithstanding, the 2019 PEI prevalence estimates for low-risk gamblers (5.6%) and moderate-risk gamblers (2.2%) were increased compared to the corresponding 2005 estimates (increases of 4.4 and 2.1 percentage points, respectively).

ⁱⁱ The 2019 prevalence estimate for the severe-risk gambler subtype was highly unreliable due to the small number of severe-risk gamblers in the study sample. The severe-risk gambler estimate was only presented separately from the moderate-risk gamblers in Figure 12 to facilitate discussion/comparison with previous PEI estimates.

Comparisons with Other Canadian Gambling Risk Prevalence Estimates

Comparisons with other Canadian gambling prevalence estimates must also be interpreted with caution due to the variation in survey dates (2002 to 2019), methods, and contextual factors. However, Table 3 shows that the 2019 PEI prevalence point estimates for all gambling subtypes are within the range of those reported by other provincial gambling prevalence studies that also used the PGSI to determine gambling risk subtypes.

Table 3. Prevalence estimates of gambling status and PGSI gambling risk subtypes, with severe-risk gamblers defined as PGSI = 8+; Canadian provinces (weighted).

	Non-gamblers	Non-problem gamblers (PGSI=0)	Low-risk gamblers (PGSI=1-2)	Moderate-risk gamblers (PGSI=3-7)	Severe-risk gamblers (PGSI=8+)
Prince Edward Island, 2019 ²⁶	17.2%	74.2%	5.6%	2.2%	0.9%
Prince Edward Island, 2006 ¹	18.1%	79.1%	1.2%	0.7%	0.9%
New Brunswick, 2014 ²⁷	15.4%	75.7%	6.1%	1.8%	1.0%
Newfoundland and Labrador, 2009 ²⁸	22.8%	68.7%	6.2%	1.7%	0.7%
Nova Scotia, 2016 ²⁹	27.2%	66.0%	4.8%	1.3%	0.7%
Quebec, 2014 ³⁰	17.7%	61.8%	2.9%	1.4%	0.4%
Ontario, 2013 ³¹	17.1%	75.8%	4.6%	1.9%	0.6%
Manitoba, 2017 ³²	25.8%	70.8%	2.9%	0.3%	0.2%
Saskatchewan, 2002 ³³	13.4%	71.4%	9.3%	4.7%	1.2%
Alberta, 2011 ³⁴	26.5%	-	-	4.0%	0.9%
British Columbia, 2014 ³⁵	27.5%	61.3%	7.9%	2.6%	0.7%

Prevalence estimates for gambling risk subtypes in PEI have also been published for alternate PGSI gambling risk subtype categories. As the Canadian Community Health Survey included PGSI questions in 2002 and 2018, these estimates have often been referred to, so they have been provided in Table 4 for the sake of completeness. While Table 4 shows that the prevalence estimate for PEI non-gamblers in the 2018 CCHS survey was substantially higher than the non-gambler prevalence estimate found by the current 2019 PEI gambling survey, it is important to understand that comparisons between CCHS and provincial gambling survey prevalence estimates are of limited value due to several key differences in methodology. Furthermore, even comparisons between CCHS estimates from before and after 2015 are often approached with

caution due to substantial changes in CCHS survey sample methods that were implemented in 2015.^{2,36,37} This cautionary approach to CCHS comparisons is particularly important to note when examining the PGSI gambling estimates, as the inclusion criteria for which respondents were asked the PGSI questions changed substantially between the 2002 and 2018 CCHS surveys, and the proportion of face-to-face interviews was much higher in 2002 than in 2018 (86% versus 25%, respectively).

Table 4. Methodological notes, prevalence estimates (and 95% confidence intervals) for PEI estimates produced by provincial and national surveys of gambling status and PGSI gambling risk subtypes among adults (18+), with higher-risk gamblers defined as PGSI = 5+; PEI (weighted).

	Methods	n	Non-gamblers	Non-problem gamblers (PGSI=0)	Low-risk gamblers (PGSI=1-4)	Higher-risk gamblers (PGSI=5+)
PEI Gambling Surveys						
Prince Edward Island (2019)	A1, B1, C1, D1	1,201	17.2% (14.9%-19.8%)	74.2% (71.3%-77.0%)	6.8% (5.3%-8.7%)	1.8% (1.1%-3.0%)
Prince Edward Island (2005)	A1, B1, C1, D2	1,000	18.1%	79.1%	—	—
Prince Edward Island (1999)	A1, B1, C1, D3	809	17.1%	—	—	—
Canadian Community Health Surveys						
Prince Edward Island (2018)	A2, B2, C2, D4	<450	30.4% (25.4%-35.3%)	67.6% (62.6%-72.5%)	X	X
Prince Edward Island (2002)	A3, B2, C2, D5	<1,000	23.7%	72.7%	2.9%	0.7%
Atlantic Canada (PE, NS, NB & NL) (2018)	A2, B2, C2, D4	<450	—	—	2.7% (1.9%-3.5%)	0.6% (0.2%-0.9%)
Atlantic Canada (PE, NS, NB & NL) (2002)	A3, B2, C2, D5	<1,000	—	—	3.0%	1.1%

— = equivalent PGSI estimates not provided in publication

X = estimates suppressed due to small sample suppression rules; Atlantic Canada estimates provided instead.

Missing 95% confidence intervals in table are due to unavailability of CI estimates in the relevant data sources.

Weighted prevalence estimates obtained from (Doiron¹, Doiron & Nicki³⁸, Williams et al.³⁹, and Cox et al.²²). Estimates of CCHS sample sizes obtained via personal communication with Statistic Canada Research Data Centre (2018) and Statistics Canada CCHS survey documentation³⁶.

PE = Prince Edward Island, NS = Nova Scotia, NB = New Brunswick, NL = Newfoundland and Labrador.

Methodological differences that impact comparability of estimates between surveys:

A1) PGSI questions asked to respondents who had participated in any gambling activity in the past year; A2) PGSI questions asked to respondents who had participated once a month or more often in any type of gambling activity; A3) PGSI questions asked to respondents who had participated in some type of gambling activity at least 5 times in the past year;

B1) Initial survey invitation by telephone interviewer, with all surveys administered by telephone; B2) Initial survey invitation by advance mailout, with surveys administered both face-to-face (86% & 25% of 2002 & 2018 surveys, respectively) and by telephone;

C1) Described as a gambling survey; C2) Described as a health and wellbeing survey;

D1) Telephone sampling frame (both landlines and mobile phones) stratified by County with soft quotas for age and gender (estimates weighted); D2) Landline telephone sample selected to represent age, sex, and region (produced self-weighting estimates); D3) Landline telephone sample stratified by region (estimates weighted); D4) Multi-stage area sampling frame (substantially different from D5) used to select adults, with individual selection probabilities based on age and household composition. D5) Area sampling frame used to select dwellings, then individual selection strategy designed to oversample younger and older age groups (estimates weighted).

Comparisons between consistently lower gambling prevalence estimates found by CCHS versus provincial gambling studies and some potential methodological explanations have been well-described by Williams and Volberg.⁴⁰ These methodological issues include differences in: (1) survey administration; (2) survey description; and (3) the gambling participation threshold for asking PGSI questions. Key aspects of these explanations and their relevance to comparisons with the PEI gambling survey estimates are briefly discussed below.

Survey administration and description. Like most other well-resourced Statistics Canada surveys, CCHS surveys use several complementary methods to encourage a representative sample and increase response rates, including: (1) sending an introductory letter to selected households; (2) performing both computer-assisted telephone and face-to-face interviews; and (3) introducing the survey as examining “well-being and health practices” (as the Gambling Module is embedded in a larger health survey). In contrast, PEI’s provincial gambling surveys were all administered by telephone, and the initial contact with potential participants was made by a telephone interviewer who invited them to participate in a survey about “gambling on Prince Edward Island” (1999), “gambling activities and attitudes” (2005), or “gambling activities and health” (2019).

Participants who were administered CCHS survey questions face-to-face may have underreported gambling problems due to a “social desirability effect” that can occur during self-report in-person surveys.⁴⁰ Specifically inviting participants to participate in a “gambling survey” has also been shown to result in a higher proportion of gamblers and at-risk gamblers agreeing to participate because of their interest in the gambling topic.⁹ Both factors could have contributed to the higher prevalence estimates for past-year gamblers and at-risk gambler subtypes in the PEI provincial surveys compared to the CCHS. The potential impact of the survey invitation wording on respondent selection was identified by CHCR while creating the 2019 PEI gambling survey instrument. During consultations with the Department and Health and Wellness about potentially rewording the introduction, the decision was made to prioritize comparability with the 2005 and 1999 PEI gambling prevalence studies instead of minimizing selection bias. Therefore, the focus on “gambling activities” was retained in the survey introduction read by the telephone interviewers.

Finally, while the CCHS 2018 target sample size for PEI was 1,058, the 2018 Rapid Response Gambling Module was only administered during two of the four 3-month collection periods (July-December 2018),⁴¹ with the sample size for each sampling frame allocated equally over the CCHS collection periods. This abbreviated data collection period resulted in approximately 450 PEI residents (15 years or older) responding to the CCHS 2018 gambling module (Statistics Canada, personal communication, July 8, 2021), so fewer than 450 respondents aged 18 years and older would have answered the gambling module questions. As evidenced by the suppression of CCHS 2018 PEI estimates for PGSI=1-4 and PGSI=5+ subtypes (see Table 4), the relatively small sample size of CCHS rapid response modules sometimes means that high-quality estimates are not always produced at more detailed levels. This is a well-acknowledged limitation that has also been pointed out by other authors.^{2,42} Statistics Canada itself has indicated that rapid response modules are intended to provide national estimates for important issues related to the health of Canadians, and while provincial estimates may be calculated from the data collected, they may be of limited value.⁴³

Gambling participation threshold for asking PGSI questions. The 2002 CCHS only asked PGSI questions of participants who had participated in some form of gambling at least five times in the past year, with the less frequent gamblers assumed to be non-problem gamblers. This stricter selection criteria for problem gambling assessment in the CCHS has since changed, as the 2018 CCHS survey used the frequency threshold of gambling once a month or more on any type of gambling. In contrast, the PEI provincial gambling surveys were less restrictive, asking PGSI questions of past-year gamblers of any frequency or gambling activity. The interpretation and comparison problems that have arisen due to surveys with modified CPGI/PGSI survey application methods have been thoroughly discussed.⁴⁴ Most other provincial and international gambling surveys have used the “any past-year gambling” frequency threshold used by the PEI provincial surveys, according to the validated procedure in the original Canadian Problem Gambling Index User Manual.⁸

The methodological differences presented above clearly show the danger in making direct comparisons between these provincial prevalence studies, and between our current study and estimates obtained through the CCHS, without careful consideration of the impact the methodological differences may have on prevalence estimates. While there is limited utility in comparing PEI gambling survey estimates with CCHS estimates, there does appear to be an increase in at-risk gambling in PEI (more specifically, low- and moderate-risk gambling) since the time of Doiron’s 2005 study. While the precise magnitude of the apparent increase in at-risk gambling is difficult to assess due to the unreliability of the estimates, it does warrant attention and further investigation.

Quantifying Gambling-Related Harm Across Gambling Risk Subtypes

Harmful impacts of gambling at the population level have commonly been assessed with population surveys that contain screening instruments such as the Problem Gambling Severity Index (PGSI) to identify at-risk gamblers from self-reports of problem gambling symptoms. Prevalence estimates from these surveys allow for descriptions of the number, distribution, and characteristics of at-risk gamblers, and provide important population-level information for informing policies, resource allocation, and setting priorities. However, as PGSI scores focus exclusively on the probability of experiencing gambling-related problems, they cannot be used to quantify the degree of gambling-related harm.

Focusing primarily on the prevalence of gamblers in the higher-risk subtypes means that the potential negative impacts experienced by gamblers with lower risk levels are often minimized or excluded from consideration. We have attempted to partially address this issue throughout the report and appendices by also considering estimates for gamblers with all levels of risk where possible (at-risk gamblers; PGSI = 1+) and customary estimates for disaggregated gambling risk subtypes. However, simply reframing analyses of prevalence estimates and their correlates does not allow us to quantify the *degree* of gambling-related harm experienced by individuals with different levels of gambling-related risk.

Browne et al.⁴⁵ recommend that “any measure of the population-level impact of gambling should incorporate both prevalence and harm severity across the spectrum of the disorder”. Indeed, approaches that use the prevalence of severe-risk gamblers to indicate all gambling-related harm in a population will underestimate the negative impacts of gambling, much like using the

prevalence of alcohol use disorder would fail to represent all alcohol-related harm in a population.⁴⁵ While the prevalence of gambling-related harms clearly increases with PGSI scores and/or gambling risk subtypes, this understanding does not allow for the degree of impact of the harms to be quantified at either the individual or population level. Summary measures of the population health burden of gambling would be particularly useful for comparing health impacts of gambling versus other health issues when prioritizing health policies and resources.

Measuring the health burden of gambling is a complex task with challenges and methods that have been well-described by several authors.^{4,23,24,46-49} Standardized burden of disease methodologies developed by the World Health Organization (WHO) have been widely adopted to estimate the health impacts of risk factors, injuries, and diseases.^{50,51} These methods have been commonly used to quantify the health burden of a variety of lifestyle behaviours (e.g., alcohol use, drug use, low physical activity). However, gambling-related harms had not been examined with burden of disease methodologies or received much attention in WHO public health agendas until recent years.⁴⁸

Researchers in Australia and New Zealand have been at the forefront of the initial efforts to apply burden of disease methods to the measurement of gambling-related harm at the population level.^{19,23,45,46,52} These authors have thoroughly documented their methods and a detailed discussion about burden of disease methodology and calculations are beyond the scope of this report. Briefly, well-accepted in-depth quantitative and qualitative methods were used to develop disability weights (i.e., harm utility weights) that quantified the amount of gambling-related harm experienced by typical individuals within PGSI gambling risk subtypes/scores.²³ Disability weights are numbers on a scale that reflect the severity of health loss associated with different health states (i.e., PGSI gambling risk subtypes), with full health = 0 and death = 1. A wide variety of treatment providers, academics, regulators, members of the general gambling population, and those impacted by others' gambling were included in the development of these weights, which were then used to extrapolate the gambling-related harm measure to the population.^{23,46} Both the Australian and New Zealand disability weights found negative impacts on quality of life in low-risk and moderate-risk gamblers as well as severe-risk gamblers, with the negative impacts increasing along with gambling risk severity.^{23,46}

To our knowledge, Canadian disability weights for PGSI gambling risk scores and/or subtypes have yet to be developed and/or published. In the absence of locally developed weights, the most conservative published weights (i.e., Australian weights developed by Browne et al.²³) were used to estimate the potential contributions of different PGSI gambling risk subtypes to PEI's burden of gambling harm. Implicit in this methodological decision is the assumption that any relevant cultural, environmental, demographic, or socioeconomic differences between PEI and Australia would not significantly impact the consistency of disability weights between locations. This is not an unreasonable assumption, as several studies, including the large Global Burden of Disease 2010 disability weights measurement study, have found strong evidence of highly consistent disability assessments across different cultural environments.^{53,54} The average Australian disability weights were 0.13 in low-risk gamblers (PGSI = 1-2), 0.29 in moderate-risk gamblers (PGSI = 3-7), and 0.44 in severe-risk gamblers (PGSI = 8+).²³

These gambling disability weights were applied to 2019 PEI prevalence estimates of PGSI gambling risk subtypes to estimate the time spent in states of reduced health (i.e., total years of healthy life lost each year - YLD₁) due to one's own gambling. The following formula was used:ⁱⁱⁱ

$$YLD_1 = (PEI \text{ Adult Population} \times \text{Annual Prevalence (\% of PGSI gambling risk subtype)}) \times$$

$$\text{Average Disability Weight for PGSI gambling risk subtype}$$

Table 5 shows that the aggregate years of healthy life lost each year in all PEI adult gamblers due to their own gambling is estimated to be 2,240 years. The highest proportion of the total estimated YLD₁ occurs in low-risk gamblers (42%), followed by moderate-risk gamblers (36%) and severe-risk gamblers (22%) (Figure 13). Due to the larger number of low-risk gamblers in PEI relative to severe-risk gamblers, low-risk gamblers account for almost twice as much gambling-attributable harm as severe-risk gamblers despite their lower disability weight.

Further burden of harm calculations were beyond the scope of this report. However, estimates stratified by key demographic factors (e.g., gender, socioeconomic status), and estimates of harm caused by another person's gambling would also provide valuable information. While harms from someone else's gambling results in fewer YLDs, Browne et al.²³ showed how the likelihood of being affected by another's gambling increases with higher levels of PGSI gambling risk of the affected person. However, as in harm to oneself, proportionally more harm occurred in non-gamblers, non-problem gamblers, and gamblers in the lower risk groups due to their higher prevalence in the population.

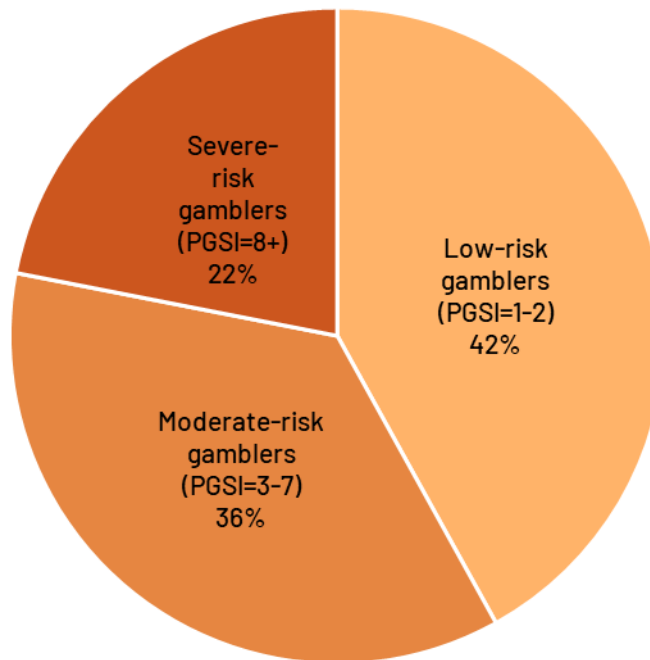
Table 5. Estimates of gambling-related harm to the PEI adult population caused by gambling harm from one's own gambling, by gambling risk subtypes, 2019.

PGSI Gambling Risk Subtype	Disability Weight	Prevalence in population (%)	Total of PEI adult population	Years of Life Lost to Disability (YLD ₁)	% of total gambling-related population harm
Low-risk gamblers (PGSI=1-2)	0.13	5.6%	7,230	940	42.0%
Moderate-risk gamblers (PGSI=3-7)	0.29	2.2%	2,791	809	36.1%
Severe-risk gamblers (PGSI=8+)	0.44	0.9%	1,116	491	21.9%
At-risk gamblers (PGSI=1+)	<i>n/a</i>	8.6%	11,137	2,240	100.0%

Note: Disability weights and calculation methods from Browne et al.²³ Statistics Canada 2020 population estimates used for PEI adults aged 18+ years.⁴³

ⁱⁱⁱ YLD₁ indicates that this is only for a single year. Individuals with PGSI = 0 were assumed to suffer zero harm. Calculations and assumptions are described in detail by Browne et al.²³

Figure 13. Estimated proportions of gambling-related harm to the PEI adult population by gambling risk subtypes, 2019.



Demographic Characteristics and Gambling Risk

Table 6 describes the prevalence of non-problem gamblers (PGSI = 0) and at-risk gamblers (PGSI = 1+) by demographic categories. The prevalence estimates of at-risk gamblers in each category could not be further disaggregated into low-risk gamblers and moderate-to-severe risk gamblers due to unreliable estimates and/or small cell sizes. For the sake of completeness, Appendix I presents a breakdown for all gambling risk subtypes, with colour-coding to clearly indicate the level of unreliability of each estimate and when cell suppression rules were applied.

Table 6 shows that the prevalence of at-risk gamblers differed significantly between categories of several demographic groups: age, gender, education, marital status, and household income. No significant differences were found within geographical variables (i.e., Counties, urban/rural location).

Men were twice as likely as women to be at-risk gamblers. Younger Islanders (18-34 years) were more than three times as likely to be at-risk gamblers compared to those aged 55 years and older. Single Islanders were also 3-4 times as likely to be at-risk gamblers compared to those with another marital status. Inverse patterns were seen for non-problem gamblers, with a higher prevalence of 35+ year-olds, and married/common-law or divorced/widowed/separated Islanders. While Islanders with a total annual household income of less than \$40,000 were less likely to be non-problem gamblers compared to the higher income categories, Islanders in this lower income group were also 1.75 times as likely to be non-gamblers compared to Islanders in the highest income category (\$80,000+).

Table 6. Distribution of gambling status and gambling risk by demographic characteristics, PEI, 2019.

	Non-gamblers	Non-problem gamblers (PGSI=0)	At-risk gamblers (PGSI=1+)
Total	17.2%	74.2%	8.6%
County			
Prince	16.7%	73.0%	10.3%
Queens	17.7%	73.8%	8.6%
Kings	16.1%	79.6%	4.3% [!]
Age (years)***			
18-34	20.4%	64.1% ^a	15.5% ^a
35-54	13.6%	78.2% ^b	8.3% ^{ab}
55+	16.8%	78.4% ^b	4.8% ^b
Gender**			
Women	18.7%	75.5%	5.8% ^a
Men	14.6%	73.6%	11.8% ^b
Education**			
High school diploma or less	19.3%	66.7% ^a	14.1%
Some postsecondary, college or technical program	15.2%	77.5% ^b	7.3%
Bachelor's and/or advanced degree	17.6%	76.0% ^{ab}	6.3%
Marital status***			
Single (Never married)	21.1%	59.1% ^a	19.8% ^a
Married or Common-law	15.5%	79.6% ^b	4.9% ^b
Divorced, Separated or Widowed	17.4%	75.8% ^b	6.8% ^b
Household Income**			
Less than \$40K	21.8% ^a	67.5% ^a	10.8%
\$40K to less than \$80K	13.3% ^{ab}	79.7% ^b	7.0%
\$80K or more	12.4% ^b	80.3% ^b	7.3%
Urban/Rural			
Rural	14.4%	78.2%	7.4%
Urban	18.9%	72.3%	8.8%

Weighted prevalence estimates calculated from survey respondents who provided valid responses for all gambling activity questions, scoring PGSI questions (for past-year gamblers), and relevant demographic questions.
p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b) had estimates that differed significantly from one another within a given gambling status or gambling risk category.
[!] Interpret with caution - highly unreliable estimate.

Gambling Activity Participation by Gambling Risk

Overall Gambling Activity Participation and Gambling Risk

Throughout this section, participation in a specific gambling activity refers to any past-year participation, including in-person and/or online participation. Table 7 shows the participation in specific gambling activities by three subtypes of gambling risk, with the gambling activities listed from highest to lowest overall prevalence in Islanders. Participation estimates for many gambling activities were unstable due to small numbers after being stratified by gambling risk. Only gambling activities with sufficiently reliable estimates and cell sizes were included in the table, with further disaggregated results presented in Appendix J (with relevant caveats and cell suppression rules applied). Significant associations between past-year gambling activity participation rates by gambling risk subtypes were seen for instant-win tickets, horse races, cards with acquaintances, electronic gambling machines, and casino table games. Participation in charitable gambling or lottery tickets was not associated with gambling risk subtype.

Past-year participation estimates for both low-risk gamblers *and* moderate-to-severe risk gamblers were significantly higher than in non-problem gamblers for: instant-win tickets, cards with acquaintances, electronic gambling machines, and casino table games. Participation differences in horse race bets were only significant for low-risk gamblers versus non-problem gamblers. Differences between participation rates of low-risk and moderate-to-severe risk gamblers were not significant for any of the gambling activities.

Table 7. Participation in specific gambling activities by gambling risk subtypes, PEI, 2019.

	Non-problem gamblers (PGSI=0)	Low-risk gamblers (PGSI=1-2)	Moderate-to-severe risk gamblers (PGSI=3+)
Charitable gambling	78.4%	78.5%	62.1%
Lottery tickets	57.5%	59.1%	69.3%
Instant-win***	21.5% ^a	41.9% ^b	56.0% ^b
Horse races**	16.6% ^a	30.2% ^b	33.9% ^{ab}
Cards with acquaintances***	13.2% ^a	40.3% ^b	36.2% ^b
Electronic gambling machines***	9.1% ^a	43.4% ^b	58.7% ^b
Casino table games***	4.3% ^a	21.2% ^b	31.3% ^b

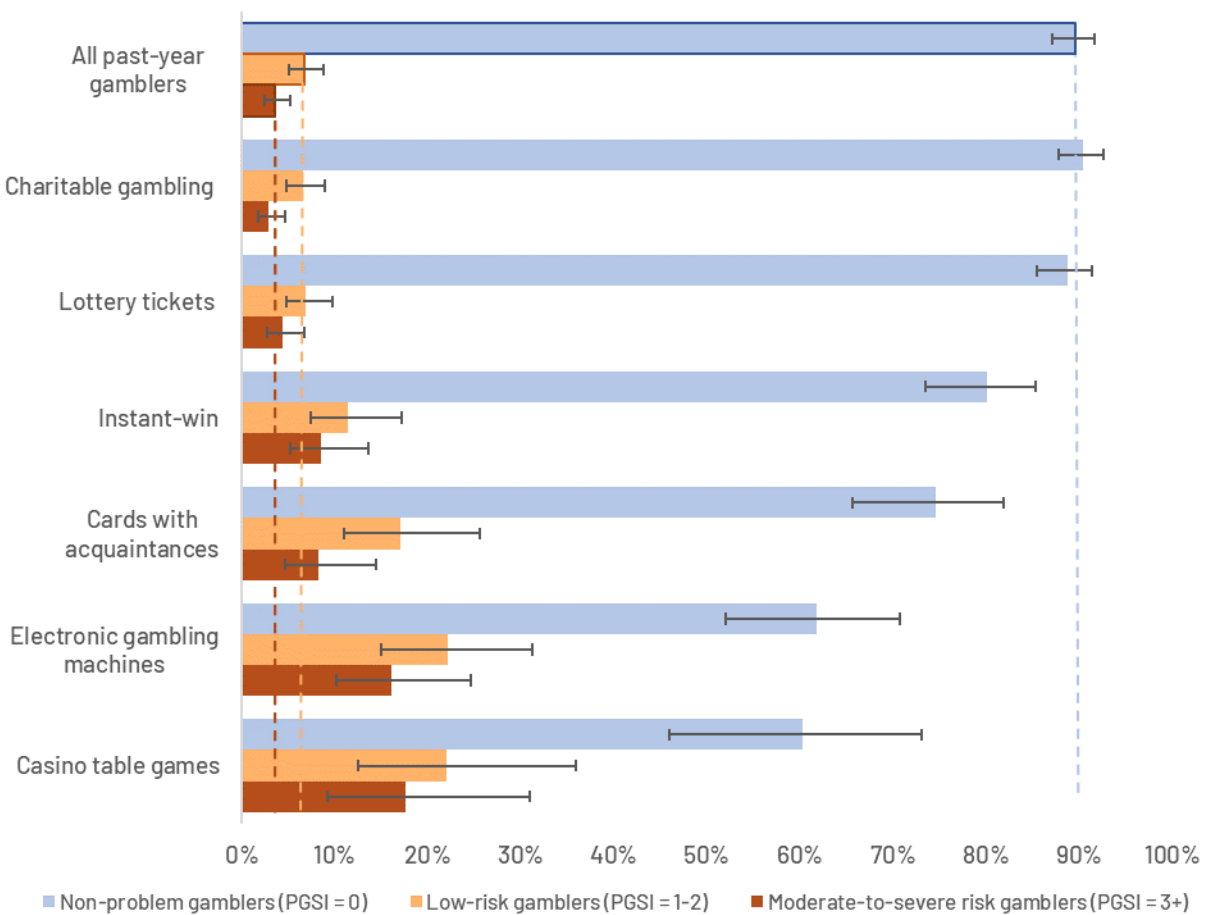
Weighted prevalence estimates calculated from survey respondents who were past-year gamblers and provided valid responses for the scoring PGSI questions and each gambling activity question.

p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b) had estimates that differed significantly from one another.

Figure 14 shows the distribution of non-problem gamblers (PGSI=0), low-risk gamblers (PGSI=1-2) and moderate-to-severe risk gamblers (PGSI=3+) amongst survey respondents who reported participating in each gambling activity during the year prior to the survey. Figure 14 shows how Islanders who played electronic gaming machines (EGMs) or casino table games were most likely to have some level of gambling-related risk, with approximately 40% of EGM and casino table game

players showing some degree of risk (PGSI = 1+), and more than 15% of players classified as moderate-to-severe risk gamblers (PGSI = 3+). Slightly more than 8% of instant-win participants and people who bet on card/board games with acquaintances were moderate-to-severe risk gamblers, with 20% and 25% of participants at-risk gamblers (PGSI = 1+), respectively. Fewer Islanders who bought raffle/fundraising tickets or lottery tickets had gambling-related risk, with non-problem gamblers accounting for approximately 90% of both charitable gambling and lottery ticket participants.

Figure 14. Distribution of gambling risk subtypes within participants of each gambling activity, PEI, 2019.



Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who were past-year gamblers and provided valid responses for the scoring PGSI questions and each gambling activity question.

The use of cross-sectional prevalence estimates to compute prevalence ratios is analogous to how incidence data from cohort studies are used to calculate risk ratios.^{55,56} Prevalence ratios were used to further explore the associations between specific gambling activities and gambling risk.

The prevalence ratios in Table 8 compare the prevalence of at-risk gambling (PGSI = 1+) among those who had participated in a specific gambling activity versus the prevalence of at-risk gambling among those who had not participated in the gambling activity in the past year. A prevalence ratio of 1 means that the chance of a being an at-risk gambler was equal for both participants and nonparticipants of a given activity. Gambling activities with highly unreliable prevalence ratio estimates and/or small cell sizes were excluded from the table. Prevalence ratio estimates for moderate-to-severe risk gamblers (PGSI = 3+) were not included in the table due to highly unreliable estimates and wide confidence intervals.^{iv}

Table 8 shows that past-year participation in several specific gambling activities was significantly associated with gambling risk. The prevalence of at-risk gambling was approximately 5 to 6 times greater in past-year gamblers who played electronic gambling machines, sports lottery, and casino table games compared to gamblers who did not participate in these specific gambling activities. In contrast, the prevalence of at-risk gambling was similar among participants and non-participants of charitable gambling and lottery tickets.

Table 8. Prevalence ratios for at-risk gamblers (PGSI = 1+) by gambling activity participation, PEI, 2019.

Gambling Activity	Prevalence Ratio	(95% CI)
Electronic gambling machines***	6.2	(4.2 , 9.3)
Sports lottery***	5.1	(3.2 , 8.1)
Casino table games***	4.8	(3.1 , 7.3)
Bet on outcomes of sporting events***	4.4	(2.8 , 7.0)
Bet on games of skill***	4.4	(2.8 , 6.8)
Daily lottery tickets***	3.6	(2.2 , 6.0)
Cards with acquaintances***	3.4	(2.2 , 5.1)
Instant-win***	2.8	(1.8 , 4.3)
Sports pools***	2.7	(1.6 , 4.5)
Horse races**	2.1	(1.3 , 3.3)
Bingo	1.5	(0.9 , 2.8)
Lottery tickets	1.2	(0.8 , 1.9)
Charitable gambling	0.8	(0.5 , 1.2)

Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who were past-year gamblers and provided valid responses for the scoring PGSI questions and each gambling activity question.

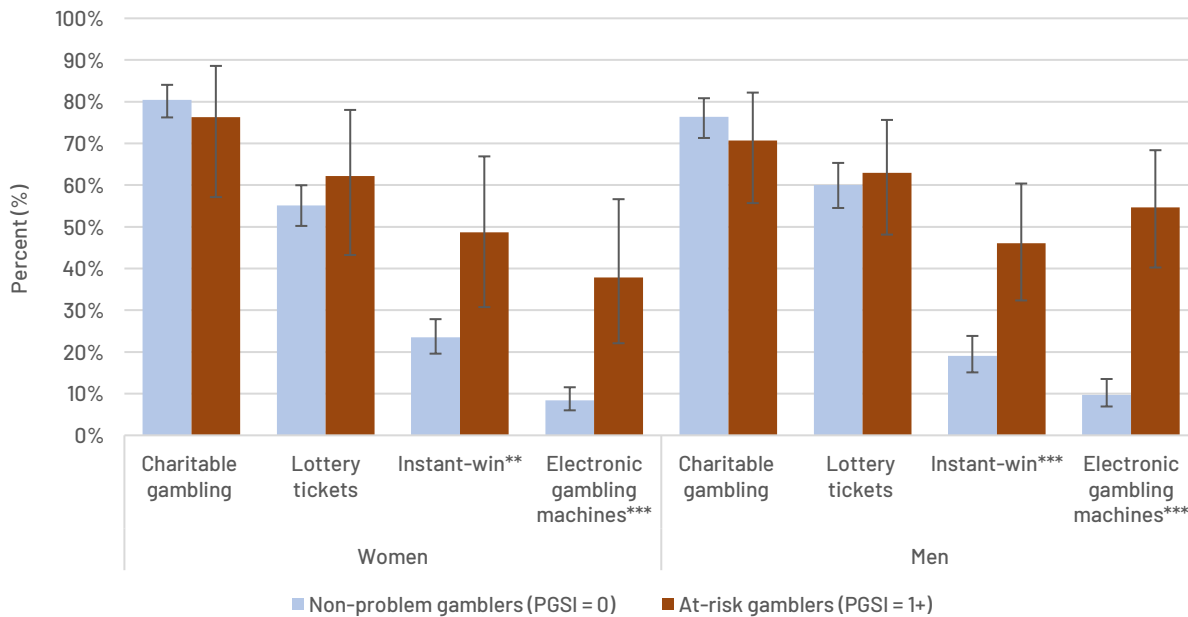
Poisson regression (with no exposure or offset specified) was used to calculate prevalence ratios and p-values: *p<0.05, **p<0.01, ***p<0.001.

^{iv} To aid comparison with the relative risk estimates (RRs) presented for moderate-to-severe risk gamblers in Doiron's 2006 PEI gambling survey report, the 2006 RR point estimates all fell within the 95% confidence intervals for all 2019 moderate-to-severe risk gambler [highly unreliable] PR estimates for analogous gambling activity categories. As VLTs are included within the electronic gambling machine category in 2019, the 2006 estimate of RR=38 could not be directly compared, but for electronic gambling machines in 2019, the [highly unreliable] PR estimate was 9.3 (95% CI: 4.4-19.9).

Gender-Specific Gambling Activity Participation and Gambling Risk

Gender-specific prevalence estimates were calculated for gambling activities with sufficiently reliable stratified estimates. Figure 15 shows that similar past-year participation patterns were seen for women and men, with both genders showing significantly higher proportions of at-risk gamblers (PGSI = 1+) playing instant-win and electronic gambling machines relative to non-problem gamblers (PGSI = 0). Women and men who were at-risk gamblers were 4.5 and 5.6 times as likely to have played electronic gambling machines compared to women and men who were non-problem gamblers, with at-risk women and men 2.1 and 2.4 times as likely to have played instant-win games compared to non-problem gamblers. No significant differences between gambling risk subtype participation rates were found for charitable gambling or lottery participation among women or men.

Figure 15. Gender-specific gambling activity participation by gambling risk, PEI, 2019.



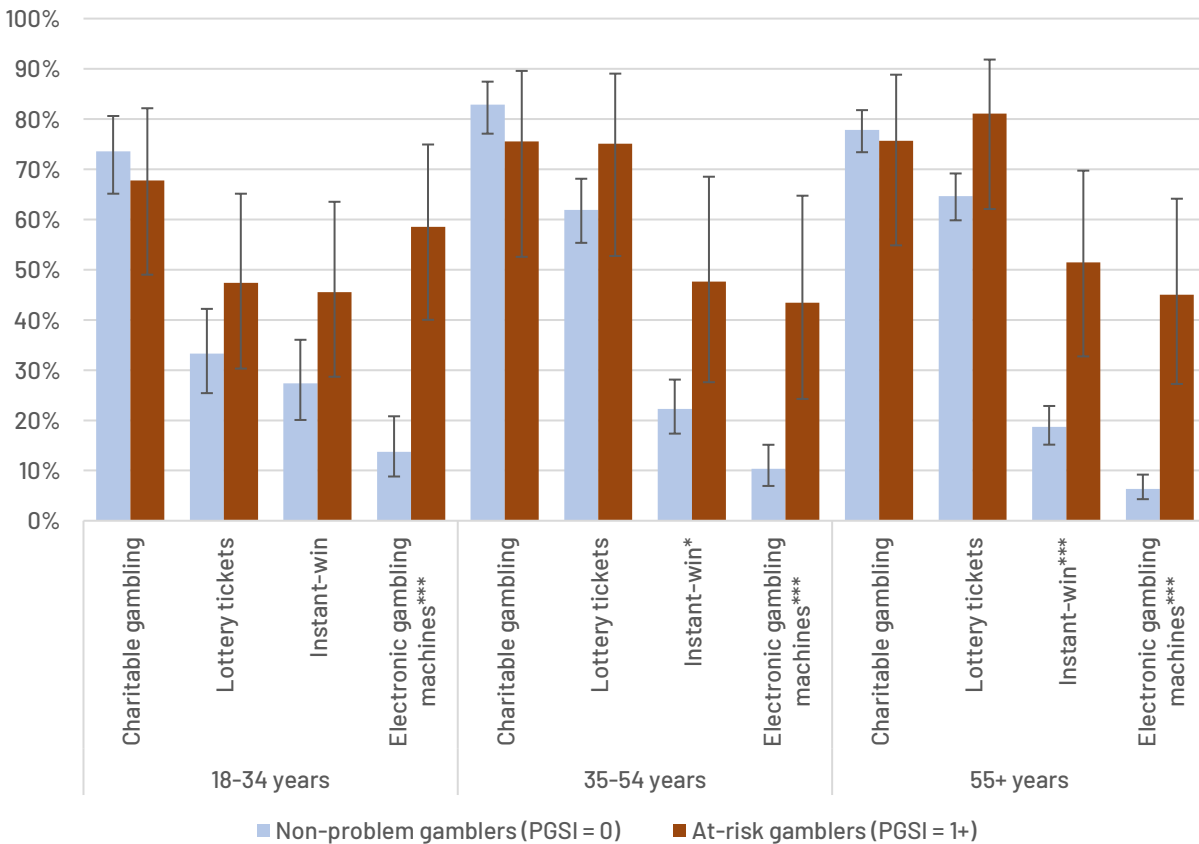
Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who were past-year gamblers and provided valid responses for the gender question and scoring PGSI questions.
 p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates.

Age-Specific Gambling Activity Participation and Gambling Risk

Figure 16 show(s) how gambling activity participation rates for non-problem and at-risk gamblers showed generally similar patterns in the three age categories. Higher proportions of at-risk gamblers (PGSI = 1+) than non-problem (PGSI = 0) gamblers reported playing instant-win and electronic gambling machines (EGMs) in the year prior to the survey, with all differences between risk subtypes significant except for instant-win players aged 18-34 years. Participation rate differences were greatest in the oldest age category for both EGM and instant-win. Among 55+ year-olds, at-risk gamblers were 7.1 times as likely as non-problem gamblers to report playing EGMs in the previous year, whereas 18-34 and 35-54 year-old at-risk gamblers were 4.3 and 4.1 times as likely to have played EGMs compared to non-problem gamblers of similar age. Less pronounced age differences were seen for instant-win participation, with 55+, 35-54 and 18-34 year-old at-risk gamblers 2.7, 2.1 and 1.7 times more likely than similarly-aged non-problem gamblers to have played instant-win in the previous year. No significant differences were seen between gambling risk subtype participation rates in charitable gambling or lottery participation within any of the age categories.

Geographical comparisons of gambling activity participation by gambling risk subtypes could not be made due to the large number of unreliable estimates produced when stratified by location.

Figure 16. Age-specific gambling activity participation by gambling risk, PEI, 2019.



Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who were past-year gamblers and provided valid responses for the scoring PGSI questions, age question, and each gambling activity question. p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates

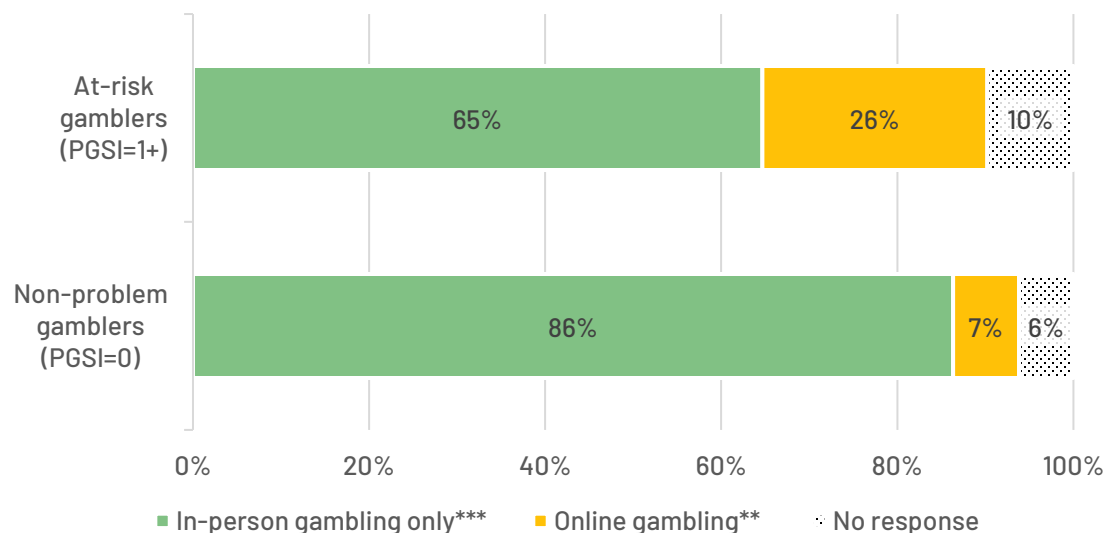
Online Gambling Participation and Gambling Risk

Figure 17 shows the estimated prevalence of past-year online gambling, in-person gambling, and non-response for non-problem gamblers (PGSI = 0) and at-risk gamblers (PGSI = 1+). Estimates for further disaggregated risk levels were not sufficiently reliable to examine. Online gambling prevalence estimates must be interpreted with caution due to a relatively high proportion of respondents with missing data for the online gambling question(s) answering “Don’t know” or choosing not to respond (see ‘Past-Year Participation in Online Gambling’ section and Appendix H for details). Figure 17 shows how 6% of non-problem gamblers and 10% of at-risk gamblers did not provide responses to the online versus in-person gambling question(s).

One-quarter of at-risk gamblers participated in online gambling during the prior year compared to fewer than one in ten non-problem gamblers. When missing data from non-responders was excluded, this association between gambling risk status and online gambling participation was significant, with the prevalence ratio showing that gamblers who participated in online gambling were 3.6 times as likely to be at-risk gamblers compared to gamblers who only gambled in person (95% CI: 2.2-5.7 times; $p < 0.001$). The prevalence ratio estimate for moderate-to-severe risk gamblers (PGSI = 3+) was too unreliable to report.

Given the large amount of missing data for the online versus in-person gambling variable, an additional sensitivity analysis was performed to explore the potential impact of excluding non-responders. In the most conservative situation possible, where all non-responding at-risk gamblers were in-person gamblers and all non-responding non-problem gamblers were online gamblers, the prevalence ratio still showed that online gamblers were 2.0 times as likely to be at-risk gamblers compared to in-person gamblers (95% CI: 1.2-3.2 times; $p = 0.007$).

Figure 17. Online gambling participation and non-response by gambling risk, PEI, 2019.



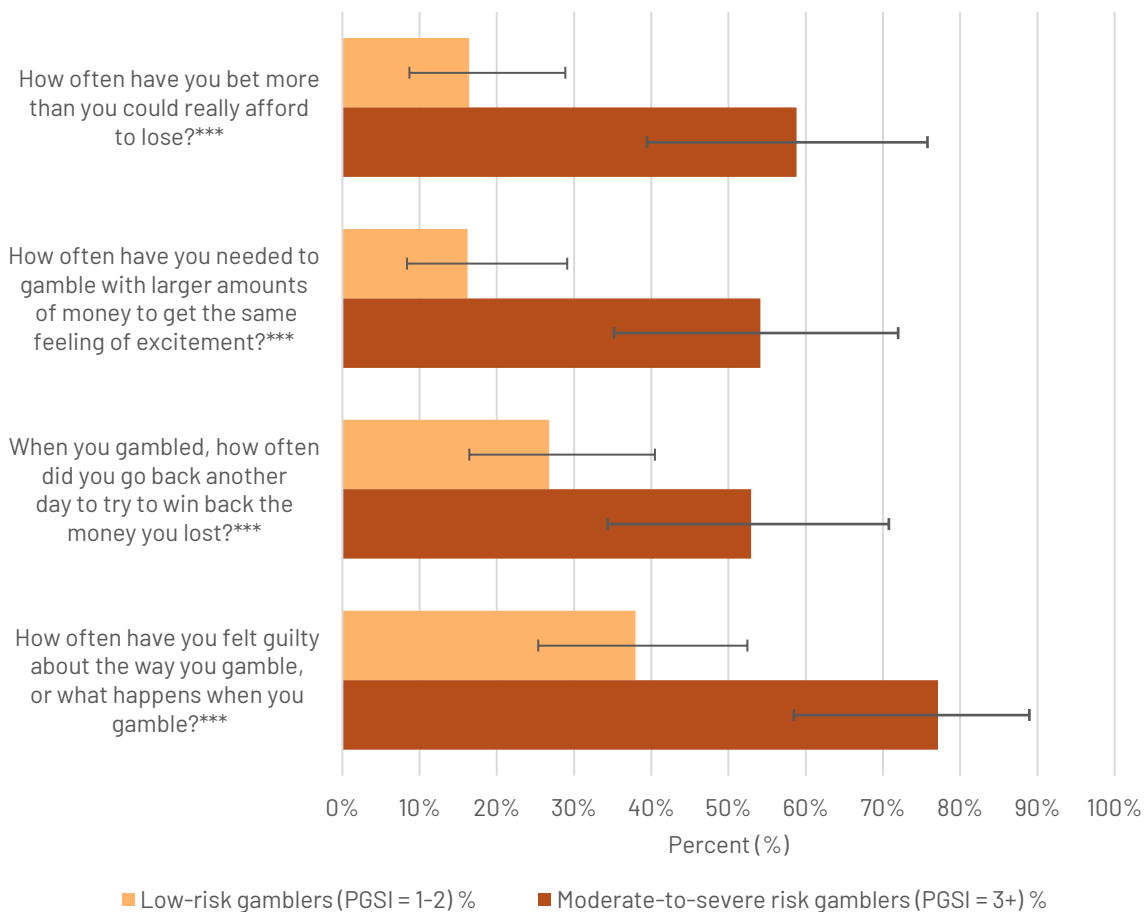
Weighted prevalence estimates calculated from survey respondents who were past-year gamblers and provided valid responses for the scoring PGSI questions and all gambling methods questions for relevant past-year gambling activities. p -value symbols (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$) indicate significant differences between estimates by gambling risk.

PGSI Responses and Gambling Risk

Responses to PGSI survey questions by past-year gamblers were examined according to gambling risk levels. Figure 18 shows the estimated proportions of low-risk gamblers (PGSI = 1-2) and moderate-to-severe risk gamblers (PGSI = 3+) who responded affirmatively to PGSI questions with sufficiently reliable estimates and cell sizes. Results for non-problem gamblers (PGSI = 0) are not presented, as by definition they responded “never” to all nine scoring PGSI questions, and estimates for the two non-scoring PGSI questions were not sufficiently reliable to present.

Significantly higher proportions of moderate-to-severe risk gamblers than low-risk gamblers responded affirmatively to all four PGSI questions examined. Moderate-to-severe risk gamblers were approximately 3.5 times as likely as low-risk gamblers to report betting more than they could afford to lose and needing to gamble with increasing amounts to get the same feelings of excitement. Moderate-to-severe risk gamblers were also twice as likely to report returning another day to attempt to win back losses and gambling-related guilt compared to low-risk gamblers.

Figure 18. Affirmative responses to specific PGSI questions by gambling risk subtypes, PEI, 2019.



Weighted prevalence estimates and 95% confidence intervals calculated from PGSI item responses of survey respondents who were at-risk gamblers (PGSI = 1+).

p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates.

Affirmative responses included: Sometimes, Most of the time, or Almost always.

Substance Use and Gambling

Alcohol Use and Gambling

We asked survey respondents several questions related to their use of alcohol in the last year. An estimated 76.7% of the PEI adult population consumed alcohol in the past year. Both non-problem gamblers and at-risk gamblers were significantly more likely to have consumed alcohol in the past year compared to non-gamblers (83.2% and 77.2% versus 48.6%, respectively)(Figure 19). The prevalence of past-year alcohol use was not significantly different between non-problem and at-risk gamblers. The denominator for prevalence estimates in this section includes both past-year drinkers and abstainers in order to accurately reflect the total population at risk (see Appendix K and Appendix L for details).

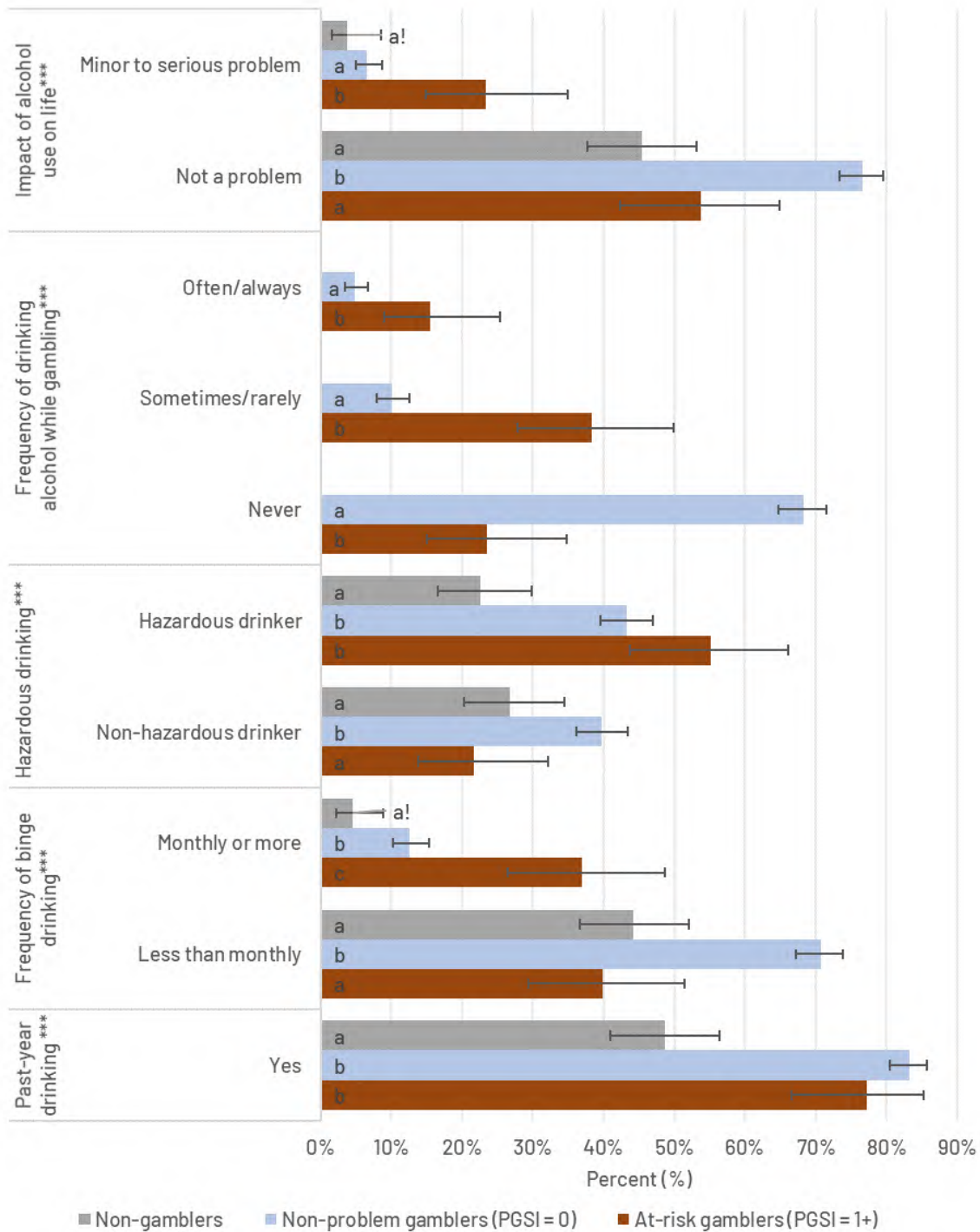
When asked about the frequency of drinking alcohol while gambling, 12.9% of gamblers reported rarely or sometimes drinking while gambling, and 5.9% of gamblers reported drinking alcohol often or always while gambling in the past year. More than half of at-risk gamblers (54%) reported drinking while gambling in the past year, compared with just under 15% of non-problem gamblers. Among at-risk gamblers, 38% reported drinking alcohol rarely or sometimes while gambling, while 15% of at-risk gamblers reported drinking alcohol often or always while gambling (Figure 19).

The frequency of binge drinking was significantly associated with gambling risk. At-risk gamblers were significantly more likely to binge drink at least once a month compared to non-problem gamblers and non-gamblers (37% versus 13% and 4%, respectively).

Hazardous drinking, defined as having a score greater than or equal to three for women and four for men using the AUDIT-C assessment tool, was approximately twice as prevalent in non-problem (43%) and at-risk (55%) gamblers than in non-gamblers (23%). Hazardous drinking did not differ significantly between non-problem and at-risk gamblers.

Finally, survey respondents who had used alcohol were asked to describe the impact of alcohol use in their life. More than one in five at-risk gamblers (23%) reported alcohol being a minor to serious problem in their life, which was significantly greater than the proportion of non-problem gamblers (7%) or non-gamblers (4%). Survey respondents who indicated that alcohol use was a problem in their life were asked to describe the relationship of their alcohol problem to their gambling. Despite the associations between gambling risk and alcohol use described above, very few of the respondents who indicated that alcohol was a problem in their life reported that their alcohol problem was associated with their gambling. This data cannot be presented due to cell suppression rules.

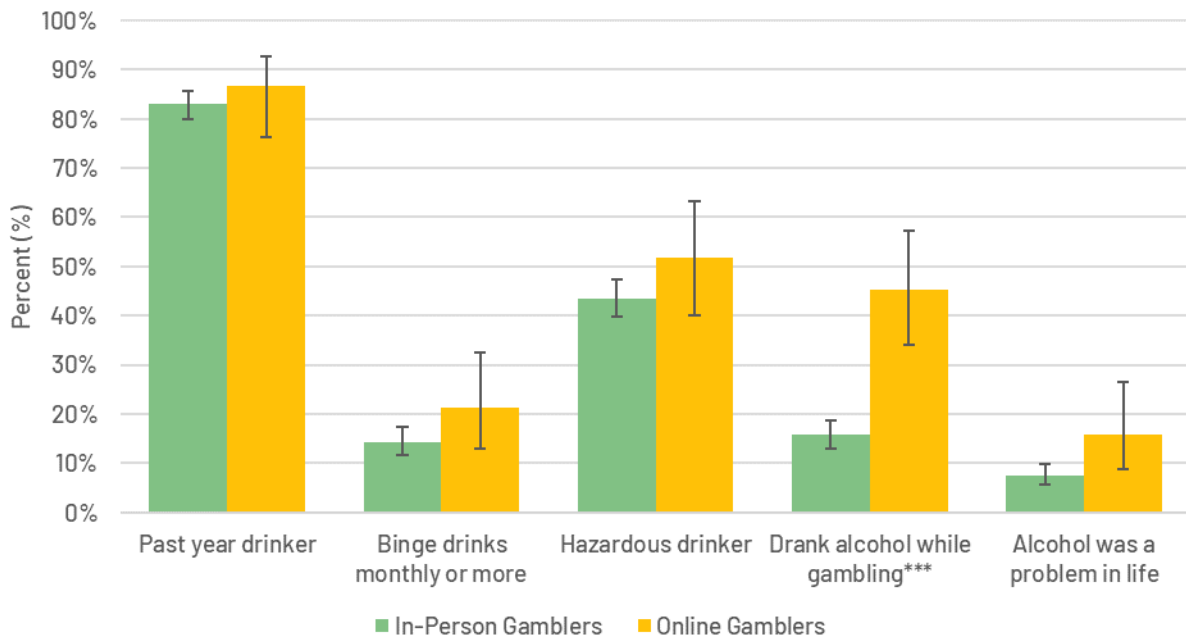
Figure 19. Alcohol use by gambling status and gambling risk, PEI, 2019



Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who provided valid responses for gambling activity questions, scoring PGSI questions (if past-year gamblers), and relevant alcohol use survey questions. Prevalence estimates in figure categories do not add to 100% as non-drinkers were included in the denominator for prevalence calculations but non-drinker subgroup results were excluded from the figure since they had negative responses to all alcohol questions (i.e., alcohol question responses for approximately 50% of non-gamblers, 17% of non-problem gamblers, and 23% of at-risk gamblers). p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b) had estimates that differed significantly from one another.

We also examined the relationship between alcohol use and online gambling. No significant associations were found between online gambling status and past-year drinking, frequency of binge drinking, or hazardous drinking. However, online gamblers were almost three times as likely to report drinking while gambling compared to in-person only gamblers (45% versus 16%, respectively)(Figure 20). As mentioned previously, due to the large proportion of missing data on method/location of gambling access, these results should be interpreted with caution as the prevalence estimates excluded non-responders. Despite the lack of statistical significance for some of these outcomes, there does appear to be a potential trend of higher prevalence of problematic drinking among online gamblers compared with in-person only gamblers. For example, while the difference was not statistically significant, twice the proportion of online gamblers reported that alcohol was a problem in their life compared to in-person only gamblers (16% versus 8%, respectively).

Figure 20. Alcohol use and online gambling, PEI, 2019.

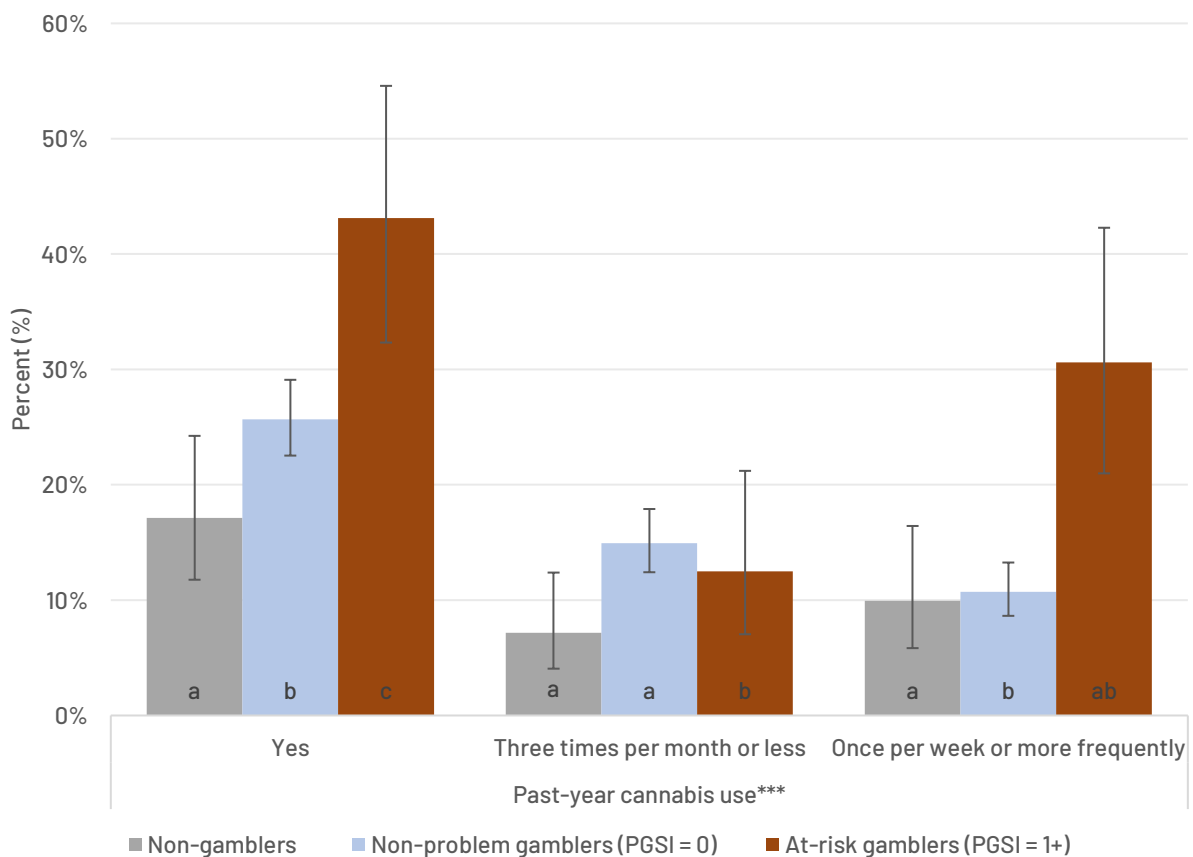


Weighted prevalence estimates and 95% confidence intervals calculated from past-year gamblers who provided valid responses about method/location of gambling access for gambling activities they had participated in during the previous year. p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates.

Cannabis Use and Gambling

We asked participants several questions related to their use of cannabis in the last year (Figure 21). The prevalence of past-year cannabis use was highest among at-risk gamblers (43%), followed by non-problem gamblers (26%) and non-gamblers (17%). When asked about the frequency of their cannabis use, a similar proportion of non-problem gamblers (15%) and at-risk gamblers (13%) reported using cannabis three times per month or less. At-risk gamblers (31%) were approximately three times as likely to use cannabis at least weekly as non-gamblers (10%) and non-problem gamblers (11%). For those who indicated cannabis being a problem in their life across all risk levels (2%), so few reported their problem with cannabis being related to their gambling that we cannot present this data due to cell suppression rules.

Figure 21. Cannabis use by gambling status and gambling risk, PEI, 2019



Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who provided valid responses for the gambling activity questions, scoring PGSI questions (if past-year gamblers), and relevant cannabis use survey questions.

Prevalence estimates in figure categories do not add to 100% as non-cannabis-users were included in the denominator for prevalence calculations but excluded from the figure since they had negative responses to cannabis use questions (i.e., cannabis question responses for approximately 83% of non-gamblers, 74% of non-problem gamblers, and 57% of at-risk gamblers).

p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b) had estimates that differed significantly from one another.

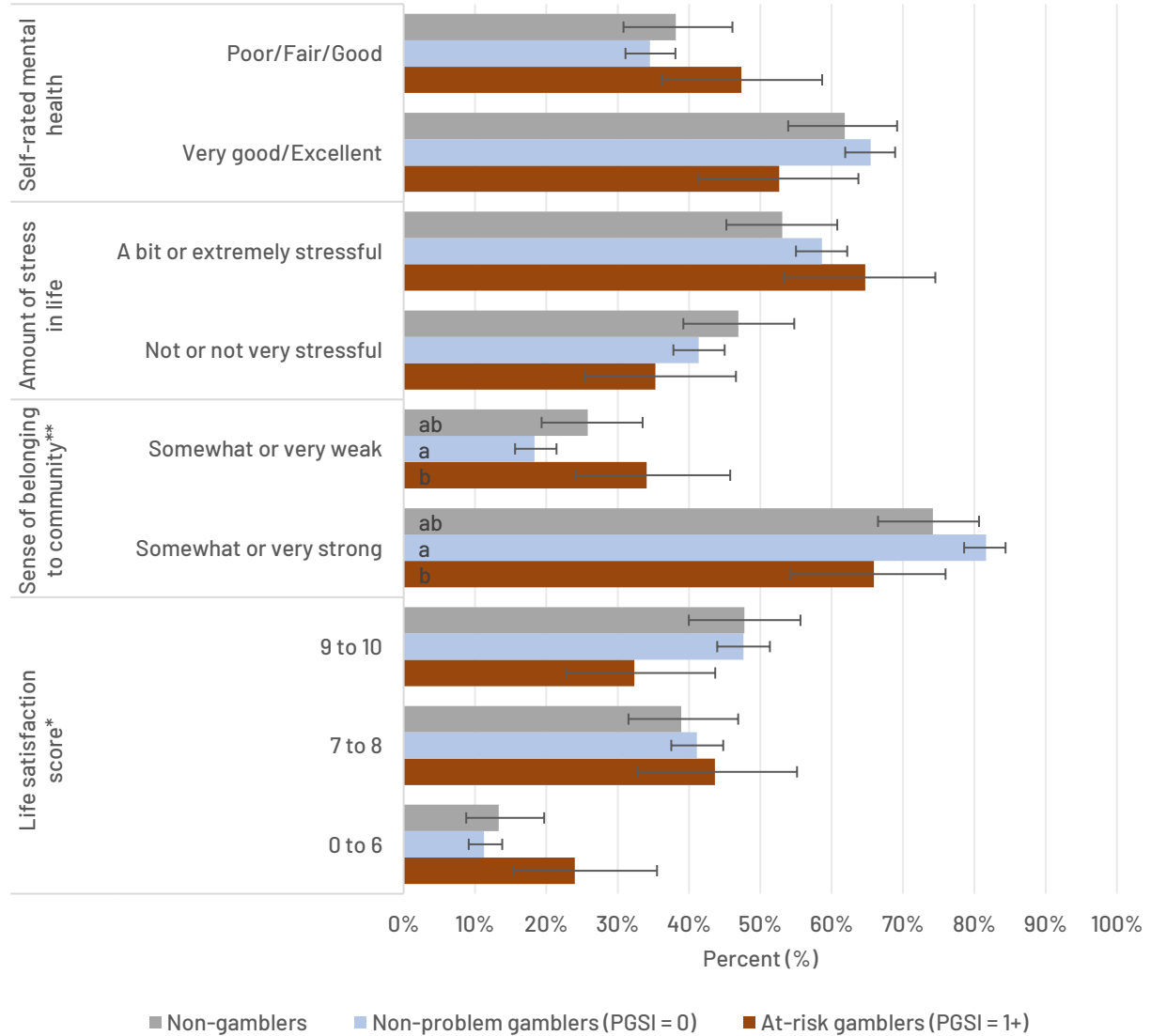
We also examined past-year cannabis use between online and in-person only gamblers. There were no significant differences in past-year cannabis use or frequency of cannabis use between online and in-person only gamblers. Due to small cell sizes, we were unable to examine the relationship between gambling location and the use of cannabis while gambling, or the impact of cannabis use on one's life.

Mental Health and Gambling

The relationship between gambling risk and aspects of mental health were examined (Figure 22). There were no significant differences in the past-year self-reported mental health or the amount of stress in life of non-gamblers, non-problem gamblers and at-risk gamblers. At-risk gamblers were significantly more likely than non-problem gamblers (34% versus 18%, respectively) to report a somewhat or very weak sense of belonging to their community. Non-gamblers did not differ significantly in their sense of belonging to their community from at-risk and non-problem gamblers. Overall, a significant association between lower life satisfaction and higher gambling risk was found, however post-hoc pairwise comparisons did not reveal significant differences between the groups. This is likely due in part to the conservative alpha cutoff value for multiple post-hoc comparisons using the Bonferroni correction. In general, non-gamblers and non-problem gamblers had similar life satisfaction scores, and more at-risk gamblers had lower life satisfaction scores. For example, approximately twice as many at-risk gamblers reported a life satisfaction score in the lowest category (0-6) compared to non-problem or non-gamblers (24% versus 11% and 13%, respectively).

Self-rated mental health, amount of stress in life, sense of belonging to community, and life satisfaction were also compared between online and in-person gamblers only. No significant differences were found (Appendix L).

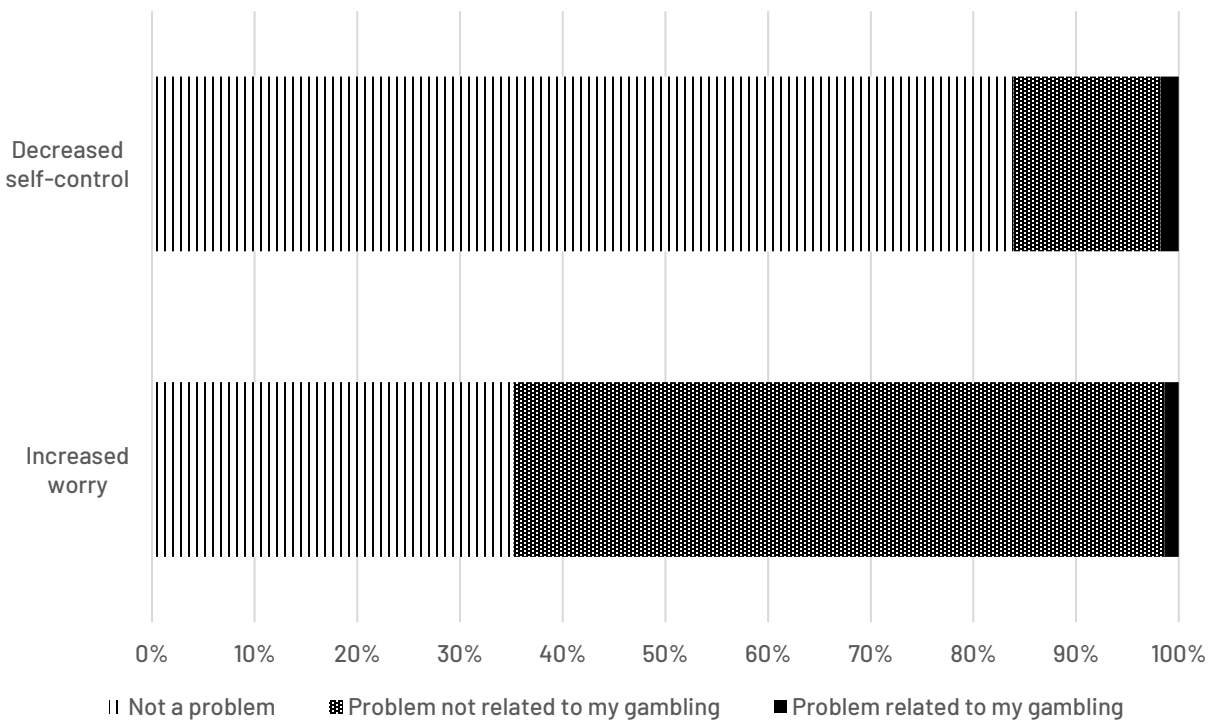
Figure 22. Self-reported mental health by gambling status and gambling risk, PEI, 2019



Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who provided valid responses for the gambling activity questions, scoring PGSI questions (if past-year gamblers), and relevant mental health survey questions. *p*-value symbols (**p*<0.05, ***p*<0.01, ****p*<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b) had estimates that differed significantly from one another.

We asked survey respondents about the impact of psychological factors such as increased worry, and decreased hope and self-control on their lives (Figure 23). Overall, 65% of gamblers indicated that increased worry was a minor to serious problem in their life, but only 1% indicated that this was associated with their gambling. Additionally, 19% of gamblers reported that decreased self-control was a problem in their life, with only 2% indicating that this was related to their gambling. Finally, 26% of gamblers reported decreased hope being a problem in their life, but due to highly unreliable estimates, we are unable to report on the relationship between decreased hope and gambling.

Figure 23. Relationship between increased worry and decreased self-control in life and gambling

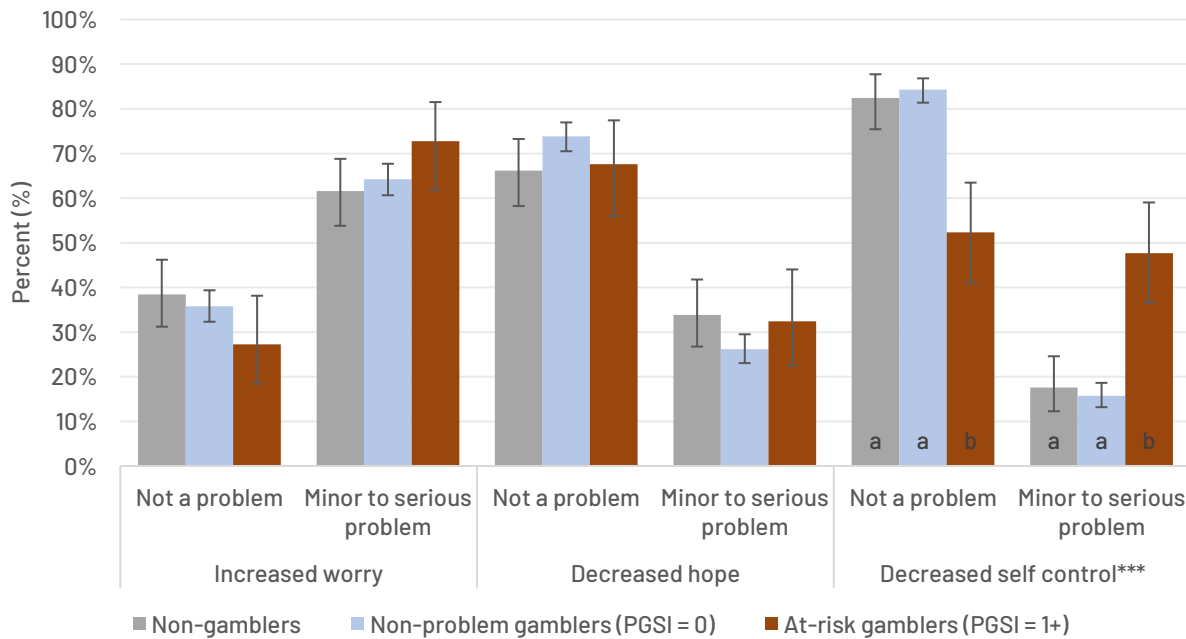


Weighted prevalence estimates calculated from past-year gamblers who provided valid responses for the relevant questions about the degree of problems each psychological factor caused in their lives, and for problematic factors, valid responses to follow up questions about their perceived relationships to gambling.

The impact of increased worry and decreased hope did not differ significantly by levels of gambling risk, however at-risk gamblers were significantly more likely to report decreased self-control being a minor to serious problem in their life compared to non-problem gamblers or non-gamblers (48% versus 16% and 18%, respectively; Figure 24). Due to small cell sizes and unreliable estimates, we are not able to examine the relationship between these problems and gambling across risk levels.

Increased worry, decreased hope, and decreased self-control were also examined between online and in-person only gamblers. No significant differences were observed (Appendix L).

Figure 24. Psychological factors by gambling status and gambling risk



Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who provided valid responses for the gambling activity questions, scoring PGSI questions (if past-year gamblers), and relevant psychological survey questions. p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b) had estimates that differed significantly from one another.

Income Sources and Gambling Risk

Doiron¹ showed an association between gambling risk subtypes and receiving social assistance and/or employment insurance benefits. Given the small cell sizes when the financial assistance variables were stratified by gambling risk subgroups and the absence of a specific 2006 survey question about financial assistance types, we further examined this association in the 2019 gambling prevalence survey.

Survey respondents were asked to indicate which sources of personal income they had received in the past year: wages and salaries, income from self-employment, employment insurance, workers' compensation benefits from Canada or Quebec Pension Plan, Old Age Security and Guaranteed Income Supplement, and/or social assistance or welfare. Fewer than 4% of survey respondents were missing data for this income source question (i.e., "Don't know" or nonresponse).

When past-year income source estimates were stratified by gambling risk levels, unreliable estimates and small cell sizes precluded valid comparisons between moderate-to-severe risk gamblers (PGSI = 3+) and low-risk gamblers (PGSI = 1-2) for all income sources except wages and salaries, and benefits from the Canada or Quebec Pension Plan.

Table 9 shows that the only significant differences seen between the subgroup prevalence estimates were: (1) higher proportions of both non-problem gamblers and low-risk gamblers received wages/salaries (68% and 72%, respectively) compared to non-gamblers (55%); and (2) non-gamblers and non-problem gamblers were more than twice as likely as low-risk gamblers to receive CPP/QPP benefits (30% versus 13%). The proportion of moderate-to-severe risk gamblers receiving wages/salaries or CPP/QPP benefits did not differ significantly from any of the other gambler or non-gambler subgroups. The associations reported by Doiron¹ between problem gambling and receipt of social assistance and employment insurance were not observed in our study. Due to extremely small cell sizes and unreliable estimates, we are unable to present the detailed results in this report. However, as the association reported by Doiron¹ was also based on extremely small numbers and the source of this data was unclear, these past results should be interpreted with extreme caution.

Table 9. Personal income from wages and salaries and Canada/Quebec Pension Plan benefits by gambling status and gambling risk subtypes, PEI, 2019.

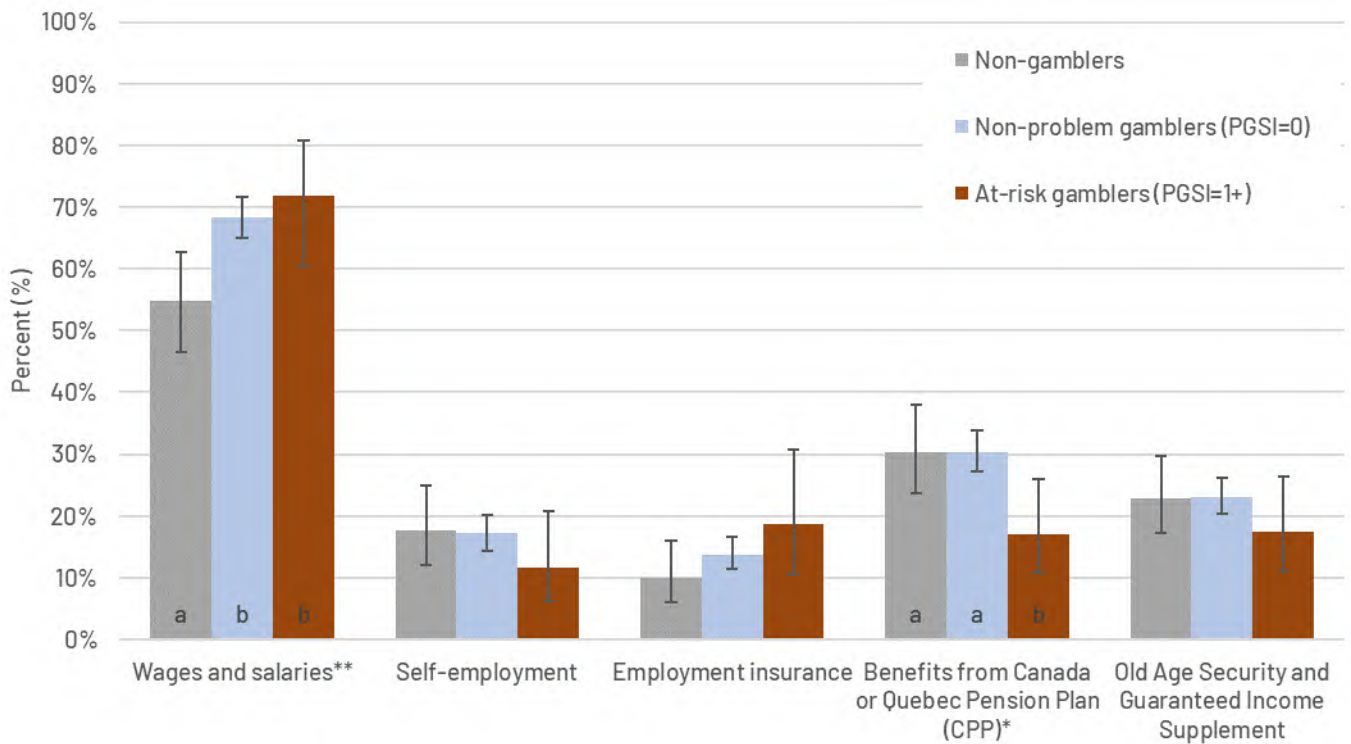
	Non-gamblers		Non-problem gamblers (PGSI=0)		Low-risk gamblers (PGSI=1-2)		Moderate-to-severe risk gamblers (PGSI=3+)	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Wages and salaries*	54.8%^a	(46.6% , 62.7%)	68.4%^b	(65.0% , 71.7%)	71.5%^b	(57.4% , 82.4%)	72.5%^{ab}	(52.2% , 86.4%)
Benefits from Canada or Quebec Pension Plan*	30.3%^a	(23.7% , 37.9%)	30.4%^a	(27.2% , 33.8%)	13.1%^b	(6.8% , 23.7%)	24.9%^{ab}	(12.8% , 42.9%)

Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who provided valid responses for the personal income survey question and the scoring PGSI questions.

p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b,c) had estimates that differed significantly from one another.

Figure 25 shows the prevalence estimates for all income sources with reliable estimates after stratifying by non-gambler, non-problem gambler, and at-risk (PGSI = 1+) gambler subgroups. Similar differences were observed as in the previous disaggregated estimates for wages/salaries and CPP, with a higher proportion of both gambler subgroups receiving wages/salaries than non-gamblers, and a lower proportion of at-risk gamblers receiving CPP compared to non-problem gamblers or non-gamblers. No significant differences between the proportions of non-gambler/gambler subgroups were seen for receiving past-year income from self-employment, employment insurance, or old age security.

Figure 25. Personal income from wages/salaries, self-employment, CPP benefits, and Old Age Security by gambling status and gambling risk, PEI, 2019.



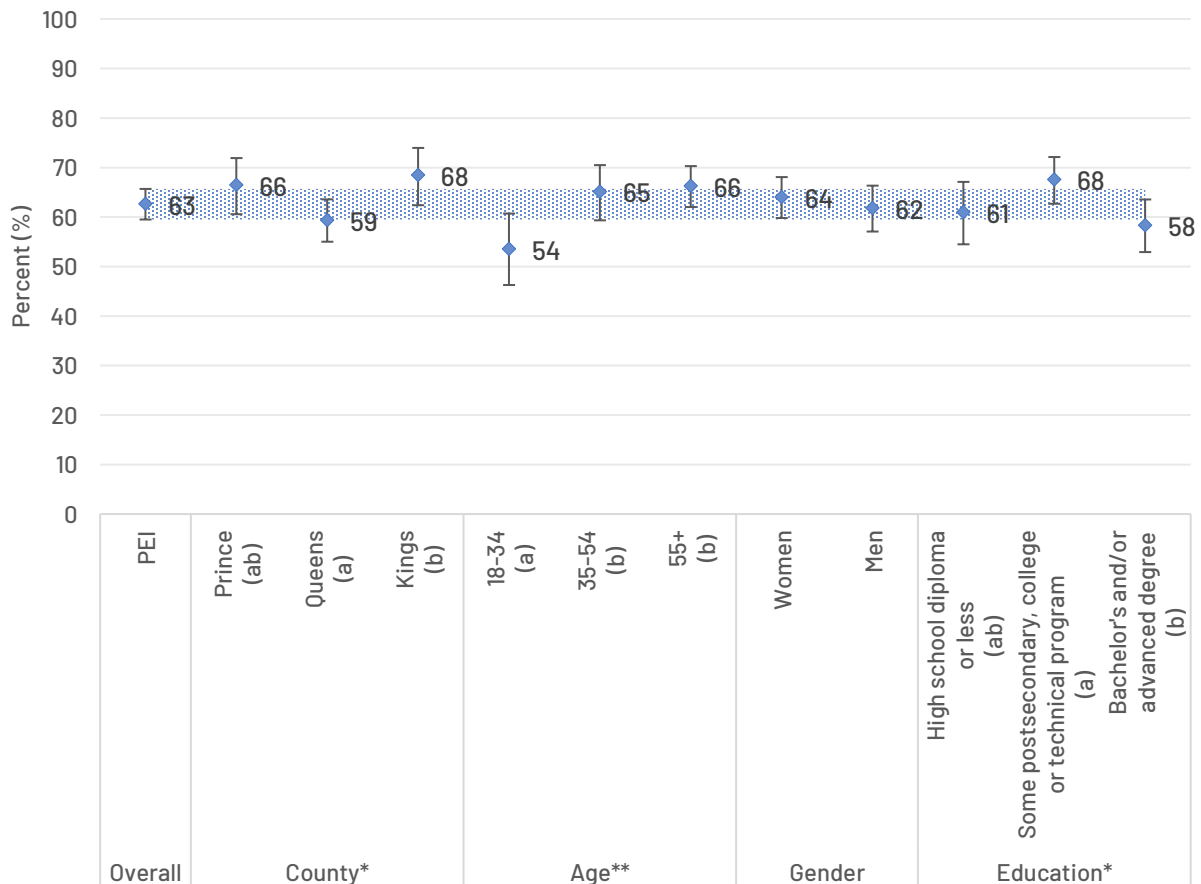
Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who provided valid responses for the personal income survey question and the scoring PGSI questions. p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b,c) had estimates that differed significantly from one another.

Gambling Support and Treatment Services in PEI: Public Awareness and Attitudes

All survey respondents were asked whether they were aware of the availability of specific gambling treatment and support services. These responses were examined by demographic categories to identify potential subgroups with different levels of awareness. No differences among income or rurality subgroups were seen for awareness of any support or treatment services.

Figure 26 shows that a significantly smaller proportion of 18–34-year-olds were aware of problem gambling treatment services in PEI compared to the older 35–54 year and 55+ year age groups (54% versus 65% and 66%, respectively). Islanders who had completed some or all of a postsecondary, college or technical program were more likely to be aware of problem gambling treatment services than those with Bachelor’s and/or advanced degrees.

Figure 26. Awareness of problem gambling treatment services available in PEI by county, age, gender and highest level of education completed, 2019.

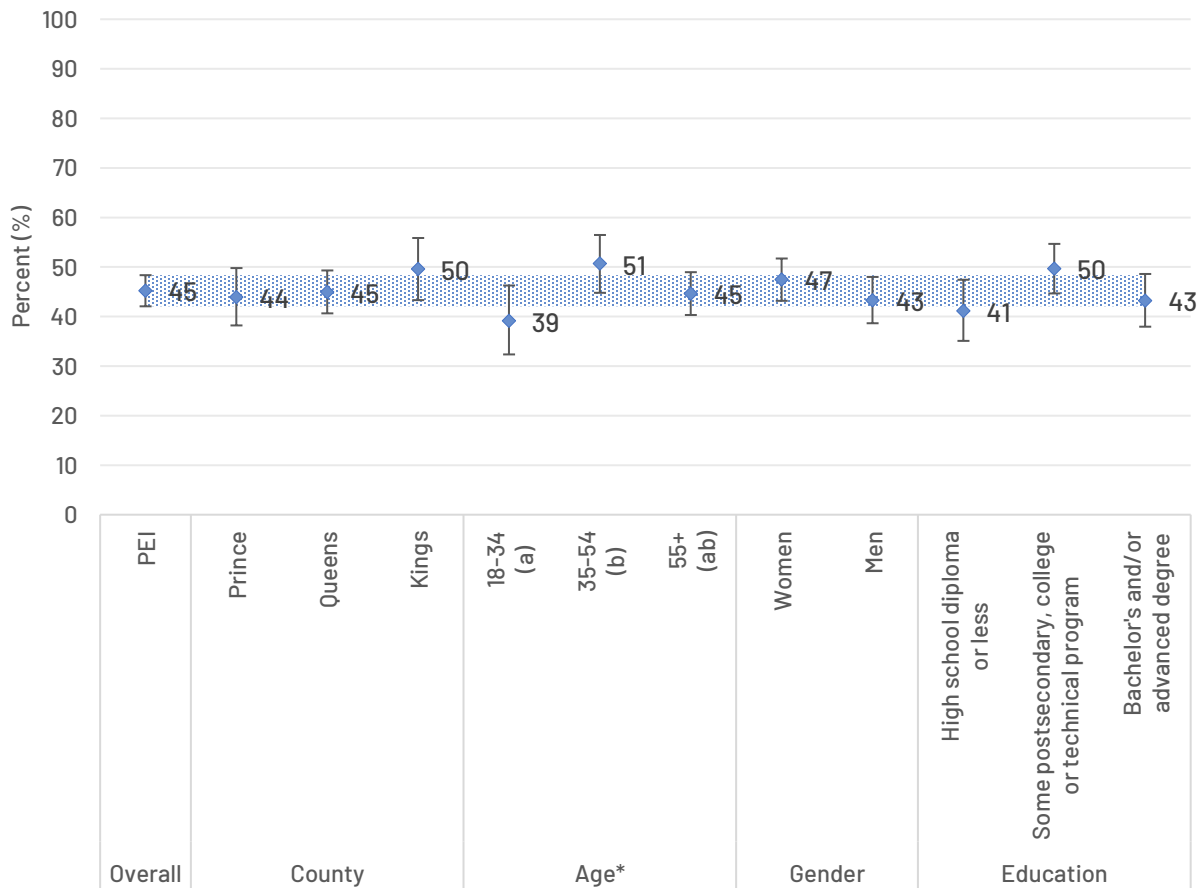


Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who provided valid responses for the gambling treatment service awareness survey question and relevant demographic questions. The blue band in the figure represents the overall PEI estimate and 95% confidence interval.

p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b) had estimates that differed significantly from one another.

Figure 27 shows how the level of awareness for the toll-free PEI Gambling Support Line was also lowest in the 18–34-year-old age group (39%), a proportion that was significantly lower than the 51% of Islanders aged 35–54 years who were aware of the gambling support line.

Figure 27. Awareness of the toll-free PEI Gambling Support Line by county, age, gender and highest level of education completed, 2019.

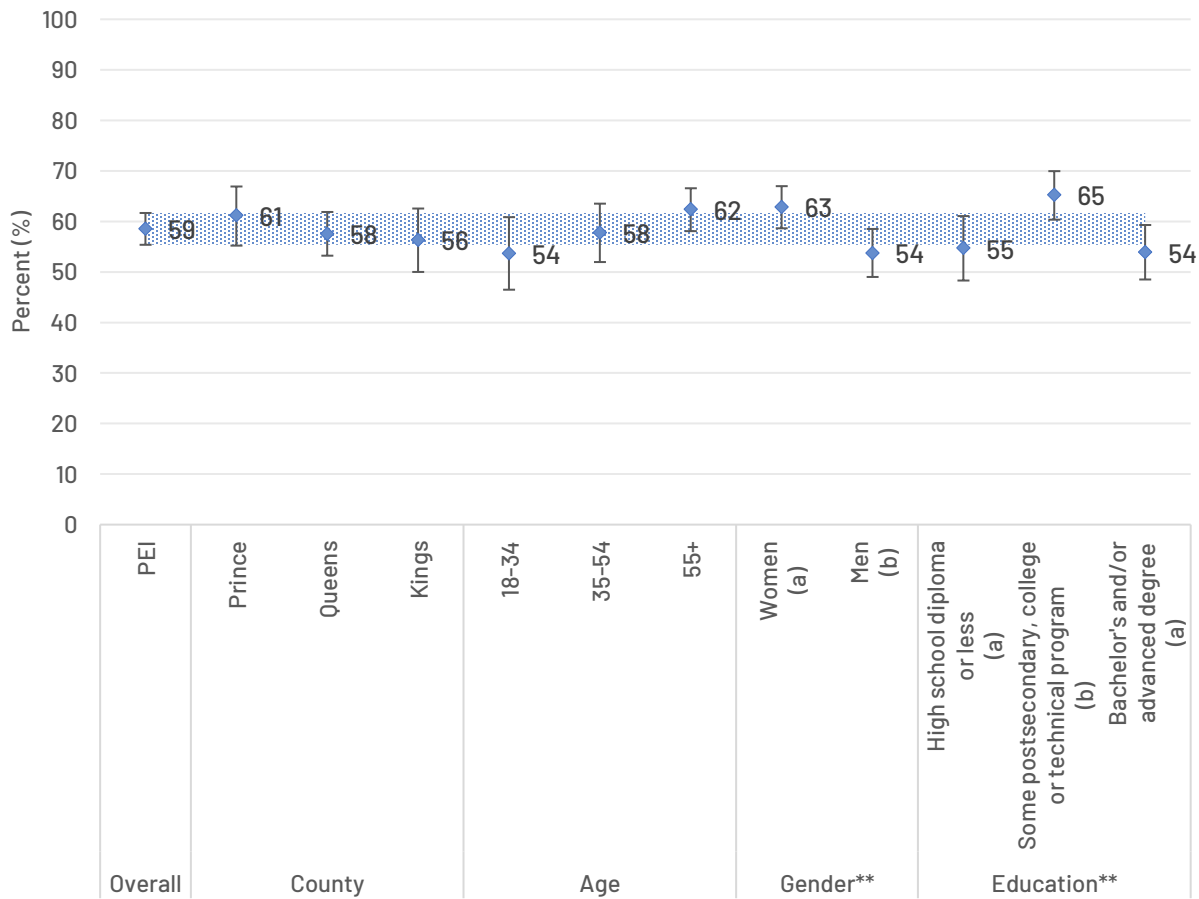


Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who provided valid responses for the gambling treatment service awareness survey question and relevant demographic questions. The blue band in the figure represents the overall PEI estimate and 95% confidence interval.

p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b) had estimates that differed significantly from one another.

Figure 28 shows that a significantly lower proportion of men than women were aware of in-person individual counselling for gambling issues (54% versus 63%, respectively). A larger proportion of Islanders who had completed some or all of a postsecondary, college or technical program were aware of the gambling counselling option than either Islanders with a high school diploma or less, or with Bachelor's and/or advanced degrees (65% versus 55% and 54%, respectively).

Figure 28. Awareness of in-person individual counselling for gambling issues through Addiction Services by county, age, gender and highest level of education completed, PEI, 2019.



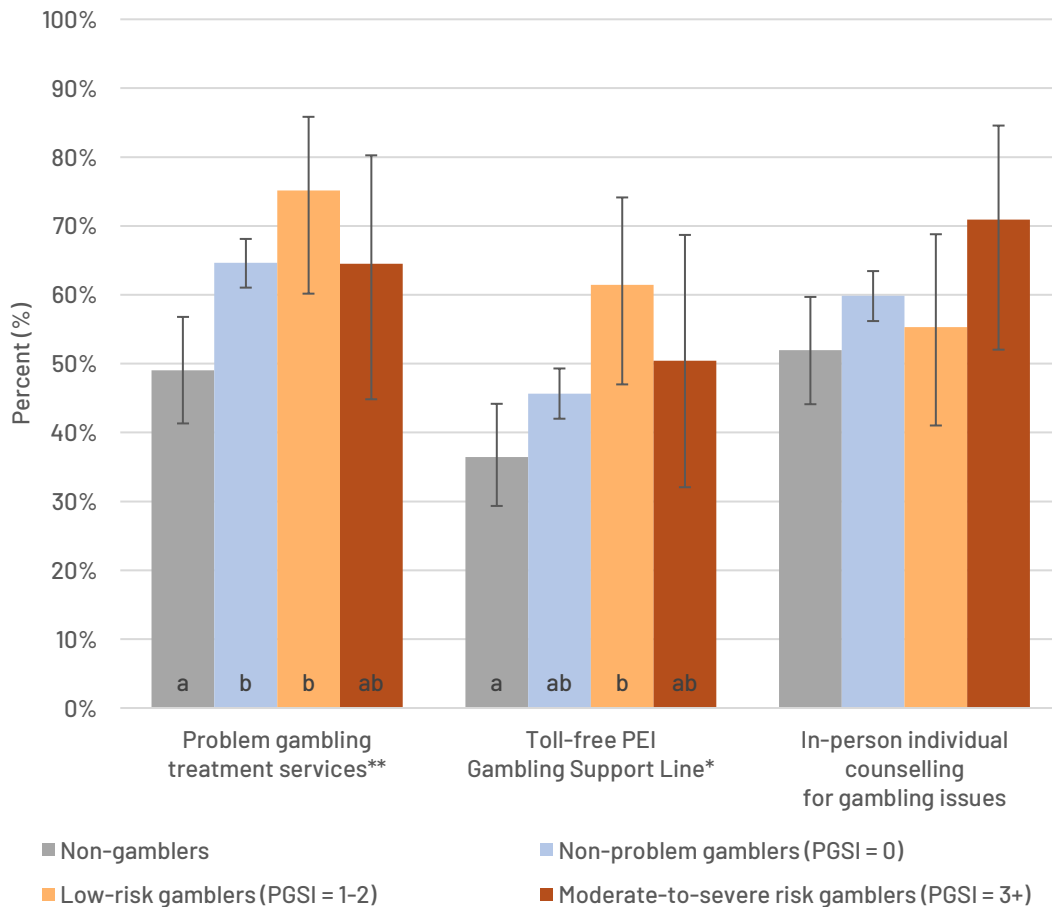
Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who provided valid responses for the gambling treatment service awareness survey question and relevant demographic questions. The blue band in the figure represents the overall PEI estimate and 95% confidence interval.

p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b) had estimates that differed significantly from one another.

Figure 29 shows how 65% of non-problem gamblers and 75% of low-risk gamblers were aware of problem gambling treatment services in PEI, compared to a significantly lower proportion of non-gamblers (49%). Higher levels of awareness were found in all gambling status and gambling risk subtypes in 2005 when the same question was asked (69% of non-gamblers, 74% of non-problem gamblers, 100% of low-risk gamblers, and 88% of moderate-to-severe-risk gamblers)¹. However, the significance of these differences is difficult to interpret due to small numbers and wide confidence intervals.

More low-risk gamblers were aware of the toll-free PEI Gambling Support Line than non-gamblers (62% vs. 36%). The level of awareness of gambling services/supports did not differ significantly between moderate-to-severe risk gamblers and any other gambling participation or gambling risk subgroups.

Figure 29. Awareness of gambling support and treatment services by gambling status and gambling risk subtypes, PEI, 2019.



Weighted prevalence estimates and 95% confidence intervals calculated from survey respondents who provided valid responses for the gambling treatment service awareness survey question and the scoring PGSI question. p-value symbols (*p<0.05, **p<0.01, ***p<0.001) indicate variables with significant differences among category estimates; for variables with significant differences, categories without a common letter (a,b) had estimates that differed significantly from one another.

Finally, we asked at-risk gamblers (PGSI = 1+) if they would attempt to seek treatment in PEI if they thought that they had a gambling problem. Approximately 17% (95% CI 9.5%-27.6%) of at-risk gamblers indicated that they would not seek treatment. This is slightly lower than the 2005 estimated one-third of at-risk gamblers who reported they would not be willing to seek treatment.¹ When asked for reasons why they would not seek treatment, responses included concerns about confidentiality, especially in such a small population, and lack of trust in the system. Others reported that they would try to deal with the problem on their own or seek help from family or friends. These reasons were similar to those previously reported by Doiron.¹

FUTURE DIRECTIONS

This study is an important step in understanding the current prevalence and correlates of at-risk and problem gambling on PEI. A crucial next step would be to engage with Islanders who have lived experience with at-risk and problem gambling to help gain a deeper understanding of these study results, and to serve as partners for any future research in this area.

One of our study objectives was to identify potential subgroups of at-risk gamblers for more in-depth study. We were able to show associations between at-risk gambling behaviour and demographic groups, lifestyle behaviours, and participation in specific gambling activities. However, while cross-sectional studies allow us to observe whether an association exists, they do not allow us to determine the nature of the relationship. For example, we observed a relationship between at-risk gamblers and online gambling. A cross-sectional study like this cannot determine whether: (1) at-risk gambling behaviours and/or consequences led to online gambling, (2) online gambling led to becoming an at-risk gambler, or (3) another outside factor exists that makes individuals more likely to be at-risk gamblers *and* to gamble online.

Due to sample size limitations, in most cases we were only able to examine the associations of gambling risk with one characteristic at a time. To identify vulnerable subgroups more completely, future research using a larger targeted sample of at-risk gamblers might allow more refined analyses and/or statistical modelling that could assess the impact of multiple factors on gambling behaviour.

As with most self-report telephone surveys, there are several limitations to note. Designing a telephone survey requires striking a careful balance between survey brevity and delivery issues, and survey content. For example, due to limits on survey length we were unable to include questions from the recently developed CPGI-Public Health to assess the impact of gambling harm to others (i.e., partner, family, neighbourhood, friends, and coworkers^{14,15}). Future studies could benefit from inclusion of these questions (or others that examine gambling harm to others) to gain a deeper understanding of the impacts of at-risk and/or problem gambling to society.

Gambling method of access categories (online vs in-person) could not be assigned to approximately 7% of gamblers due to lack of valid responses to one or more of the gambling method follow-up questions (i.e., Don't Know, No Response, Refused). In the future, it might be possible to reduce this information loss through interviewer training and obtaining more clear information from stakeholders and citizens who gamble on local gambling terms and options.

Caution should be taken in applying our study results to the current state of gambling in Prince Edward Island as this *data was collected prior to the COVID-19 pandemic*. Public health measures during the COVID-19 pandemic resulted in substantial changes in gambling markets by significantly reducing the availability of in-person gambling opportunities. Despite widespread concern that these measures would lead to an increase in online gambling, many people reduced or maintained gambling levels.⁵⁷ However, the research conducted during the pandemic also highlighted a vulnerable subgroup of individuals who increased their gambling by starting or increasing online gambling. These individuals were more likely to be younger, male, have existing gambling problems, and other mental health issues.⁵⁷⁻⁵⁹ Vulnerable subgroups such as these should be identified, characterized, and addressed by policy makers.

Future research methods should address the shortcomings of cross-sectional survey research and use a social ecological framework in order to examine and acknowledge gambling impacts and mechanisms at societal, community, family/social network and individual levels.⁶⁰ Qualitative and/or mixed methods studies could provide more in-depth understandings of the results and offer new insights that are not possible using survey research alone.

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APPENDICES

Interpretation Notes

- All estimates presented in appendices are weighted unless otherwise noted.
- Chi-square analyses were used to test for global significance of associations between survey variables (see *p*-values in Appendix tables).
- Cell sizes of less than five were suppressed to protect the confidentiality of our study participants. This is indicated in Appendix tables by using an “x”. In cross-tabulations where one cell was less than five, we suppressed all estimates to prevent residual disclosure.
- Data Reliability Categories

Data Reliability	CV value	Description
Sufficiently reliable	≤ 16.5%	No release restrictions: data are of sufficient accuracy that no special warnings to users or other restrictions are required.
Potentially unreliable	> 16.5% and ≤ 33.3%	Release with caveats: data are potentially useful for some purposes but should be accompanied by a warning to users regarding their accuracy.
Highly unreliable	> 33.3%	Not recommended for release: data contain a level of error that makes them so potentially misleading that they should not be released in most circumstances. If users insist on inclusion of Category 3 data in a non-standard product, even after being advised of their accuracy, the data should be accompanied by a disclaimer. The user should acknowledge the warnings given and undertake not to disseminate, present or report the data, directly or indirectly, without this disclaimer.

Source: Statistics Canada (2005)

Appendix A – Survey Instrument: 2019 PEI Gambling Study

PEI Gambling

UofPEI

Generated on 2019-11-07 at 07:31:00 MT



Languages: English

Section

Page

Section

R1, R2, RefR2, R2wireless, NQR2wireless1, RefR2wireless, R3a, RefR3a, CallbackR3a, R3b, RefR3b, CallbackR3b, text, R3, RefR3, CallbackR3c, R4

Page

R1

Good evening, I'm _____ calling on behalf of the Centre for Health and Community Research at the University of P.E.I., who is conducting a survey for the P.E.I. Department of Health and Wellness. This research survey discusses the gambling activities and health of P.E.I. residents, and we would like to include your views. Your participation in this survey is voluntary and any information you provide will be kept completely confidential and anonymous.

If you agree to participate, your responses will help us to better understand gambling behaviour and to develop gambling programs and services for Islanders. Your household is one of 1200 randomly selected to represent the opinions of PEI residents aged 18 and older.

(Note: If people say they don't gamble, say: "We would like to include a wide range of experiences, so information from both non-gamblers and people who gamble is very valuable.")

R2 *Show if Landline Sample*

First of all, can you please tell me how many adults 18 years or older live in this household?

Minimum: 0, Maximum: 9999999

RefR2 *Show if R2 Refused*

Thank you for your time

Status Code: 1000

R2wireless *Show if Wireless Sample*

First of all, can you please confirm that you are 18 years of age or older?

Maximum: 9999999

- 1 Yes
- 2 No
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response
- 8 Refused

NQR2wireless1 *Show if R2Wireless No*

We must interview PEI residents that are at least 18 years of age.

Thank you for your time

Status Code: 1002

RefR2wireless *Show if R2Wireless Refused*

Thank you for your time

Status Code: 1000

R3a *Show if R2 Single adult*

I would like to speak to that person – would that be you?

- 1 Yes - Continue
- 2 Yes - but not now
- 3 Yes - but refused to do the interview

RefR3a *Show if R3a refused*

Thank you for your time

Status Code: 1000

CallbackR3a *Show if R3a callback*

When would be the best time to call you back?

Status Code: 1001

R3b *Show if R2 More than one*

I would like to speak to the person in your household 18 years or older who has the next birthday – would that be you?

If no, ask to speak to that [next birthday] person.

If the person is not available, arrange call-back.

- 1 Yes - Continue
- 2 Yes - but not now

- 3 Yes - but refused to do the interview

RefR3b *Show if R3b Refused*

Thank you for your time

Status Code: 1000

CallbackR3b *Show if R3 callback*

When would be the best time to call you back?

Status Code: 1001

text

Great! I would like to interview you and I'm hoping that now is a good time for you. The interview will take about 10 to 15 minutes, depending on how many questions apply to you.

If there are any questions that you do not wish to answer, please feel free to point these out to me and I'll go on to the next question. You are free to stop the interview at any time. Some of the questions might be sensitive for you, so you may wish to answer this survey in a private place. If any of the questions are difficult for you, we can provide a number where you can access support.

If you have any questions about the survey, you can phone the Research Manager, Mary-Ann MacSwain in Charlottetown at (902) 620-5167 for further information (call collect). If you have any ethical concerns about the conduct of this study, you can contact the UPEI research ethics board at 902-620-5104 or reb@upei.ca.

R3

Can we begin now?

- 1 Yes - Agreed to do interview
 2 No - Not now
 3 No - Refused to do interview

RefR3 *Show if R3 Refused*

Thank you for your time

Status Code: 1000

CallbackR3c *Show if R3 callback*

When would be the best time to call you back?

Status Code: 1001

R4

Great!

In what year were you born?

Minimum: 1919, Maximum: 2001

- 8 Refused / No Response
 -9 Don't know

Section

Q44, QuotaReachedKings, QuotaReachedQueens, QuotaReachedPrince, Q1, Q1other, Q1x1a, Q1x1b, Q1x2a, Q1x2b, Q1x3a, Q1x3b, Q1x4a, Q1x5a, Q1x5b, Q1x6a, Q1x6b, Q1x6c, Q1x7a, Q1x7b, Q1x7c, Q1x8a, Q1x9a, Q1x10a, Q1x11a, Q1x12a, Q1x12b, Q1x13a, Q1x13b, Q1x14a, Q1x14b, Q1x15a, Q1x16a, Q1x17a, Q1x18a

Page

Q44

So we can classify responses based on where people live what county do you live in?

- 1 Kings County INTERVIEWER: Eastern PEI (e.g., Souris, Montague, Morell, St. Peter's Bay)
 2 Queens County INTERVIEWER: Central PEI (e.g., Charlottetown, Resort Municipality, Cornwall, Stratford, etc.)
 3 Prince County INTERVIEWER: Western PEI (e.g., Summerside, O'Leary, Tignish, etc.)
 -8 DO NOT READ: Refused/No Response
 -9 DO NOT READ: Don't know

QuotaReachedKings *Show if Q44 Kings County and is closed*

Unfortunately we have reached our target in your area. Thank you for your time

Status Code: 571

QuotaReachedQueens *Show if Q44 Queens County and is closed*

Unfortunately we have reached our target in your area. Thank you for your time

Status Code: 572

QuotaReachedPrince *Show if Q44 Prince County and is closed*

Unfortunately we have reached our target in your area. Thank you for your time

Status Code: 572

Q1

Now we'd like to ask some questions about gambling activities you may participate in. People spend money and gamble on many different things including buying lottery tickets, playing bingo, or card games with their friends. I am going to ask about some activities that you might have bet or spent money or something

of value on, **either in person or online** (i.e., remotely via a computer, phone, or other device).

Including both in person and online betting or spending, in the past 12 months, how often did you:

Interviewer: If participant requires further explanation, explain that we are interested in "how often they participate in the activities on average".

Online betting or spending can be through a website or a mobile app. Other devices can include gaming consoles like Playstation or Xbox.

[Would you say...:] Never, less than once a month, once a month, two or three times a month, once a week, or several times a week?

INTERVIEWER: "Would you say..." preface to response options is optional from choices 2 to 18.

1. Buy lottery tickets such as 649, Super 7 or POGO?
INTERVIEWER: this excludes sports lottery tickets
 2. Buy daily lottery tickets like Pick 3?
INTERVIEWER: Additional example: Keno
 3. Buy or play instant-win tickets or instant online games like scratch, break-open, pull-tabs or instant Bingo?
 4. Buy raffles or fundraising tickets?
 5. Spend money playing bingo for money or prizes?
INTERVIEWER: (excludes instant Bingo games)
 6. Bet or spend money on electronic gambling machines, such as slot machines, VLTs, electronic blackjack, electronic roulette, or video poker, either in person or online ?
INTERVIEWER: VLTs=video lottery terminals; If participant questions the "either in person and online" prompt, remind them that all these gambling activity questions are asking about both types of betting for each activity.
 7. Bet or spend money on table games at casinos, like poker, blackjack, roulette, or baccarat?
INTERVIEWER: excludes electronic machine versions
 8. Bet on cards or board games with family or friends?
 9. Bet on card games in non-regulated settings, like card rooms?
INTERVIEWER: other than with family or friends; e.g., card rooms
 10. Bet on playing video games?
INTERVIEWER: this only includes betting on video game outcomes, not in-app or in-game purchases
 11. Bet on games of skill, like pool, golf, bowling or darts?
INTERVIEWER: this only includes betting on game outcomes, not costs to participate.
 12. Bet on live horse races at a track or off-track?
 13. Play a sports lottery like Sport Select?
INTERVIEWER: e.g., Pro-Line, Over/Under, Point Spread
 14. Bet or spend money on sports pools?
INTERVIEWER: e.g., bets on sports such as hockey, football & golf; charity-sponsored or at work
 15. Bet on outcomes of sporting events, other than sports pools or Sport Select?
INTERVIEWER: e.g., bets made with friends
 16. Bet on sports with a bookie?
 17. Personally invest in high-risk stocks, options or commodities markets?
INTERVIEWER: (i.e., not mutual funds or RRSPs; e.g., day trading, penny stocks, shorting, options, currency futures, etc.
 18. Bet or spend money on any other form of gambling activities?
- 1 Never

- 2 Less than once a month
- 3 Once a month
- 4 Two or three times a month
- 5 Once a week
- 6 Several times a week
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q1other Show if Q1 18 other NOT NEVER

Which other gambling activities?

Please do not enter personally-identifying information (e.g., name, email address, phone number, mailing address), as anything you enter may be shared with the sponsor of this research.

- 8 Refused / No response
- 9 Don't know

Page Show if Q1 1 Lottery

Q1x1a

In the past 12 months, did you buy **Lottery tickets** like 649 or Super 7 in person, online or both?

INTERVIEWER: Only if further reminder needed: excludes sports lottery tickets; e.g., 649, Super 7, POGO

- 1 In person
- 2 Online
- 3 Both
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q1x1b

In the past 12 months, how much money, not including winnings, did you spend on **Lottery tickets** in a typical month?

(includes both in person & online betting)

INTERVIEWER: If asked for clarification about spending questions: we mean spending that is out of pocket, and doesn't include money won and THEN spent.

Minimum: 0, Maximum: 9999999

\$ _____

- 8 Refused / No response
- 9 Don't know

- .8 Refused / No response
- .9 Don't know

Page Show if Q1 4 Charity raffles

Q1x4a

In the past 12 months, how much money, not including winnings, did you spend on **raffles or fundraising tickets** in a typical month?

INTERVIEWER: If asked for clarification about spending questions: we mean spending that is out of pocket, and doesn't include money won and THEN spent.

Minimum: 0, Maximum: 9999999

\$ _____

- .8 Refused / No response
- .9 Don't know

Page Show if Q1 5 Bingo

Q1x5a

In the past 12 months, did you play **Bingo** in person, online, or both?

INTERVIEWER: Excludes instant bingo games

- 1 In person
- 2 Online
- 3 Both
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q1x5b

In the past 12 months, how much money, not including winnings, did you spend on **Bingo** in a typical month?

(includes both in person & online betting)

INTERVIEWER: If asked for clarification about spending questions: we mean spending that is out of pocket, and doesn't include money won and THEN spent.

Minimum: 0, Maximum: 9999999

\$ _____

- .8 Refused / No response
- .9 Don't know

Page Show if Q1 6 eGambling machines

Q1x6a

In the past 12 months, did you play **Electronic gambling machines**: in person at a land-based casino, at a bar, restaurant lounge or Legion; or at an online casino or other online site?

INTERVIEWER: Only if reminder needed: e.g., slot machines, VLTs, electronic blackjack, electronic roulette, or video poker

- 1 In person at a land-based casino
- 2 In person at a bar, restaurant lounge, and/or Legion
- 3 At an online casino or other online site
- 98 DO NOT READ: Don't know (Exclusive)
- 99 DO NOT READ: Refused/No response (Exclusive)

Q1x6b

In the past 12 months, how many minutes or hours did you normally spend EACH TIME you bet or spent money on **Electronic gambling machines**?

Enter EXACT number of MINUTES (i.e., duration of play in a normal gambling session)

(do not read; DO NOT ROUND)

Minimum: 1, Maximum: 480

_____ minutes

- 8 Refused
- 9 Don't know

Q1x6c

In the past 12 months, how much money, not including winnings, did you spend on **Electronic gambling machines** in a typical month?

(includes both in person & online betting)

INTERVIEWER: If asked for clarification about spending questions: we mean spending that is out of pocket, and doesn't include money won and THEN spent.

Minimum: 0, Maximum: 9999999

\$ _____

- 8 Refused / No response
- 9 Don't know

Page Show if Q1 7 Casino table games

Q1x7a

In the past 12 months, did you play **Casino table games like poker or blackjack**: in person at a land-based casino; at an online casino, poker room, or other online site; or both?

INTERVIEWER: Only if reminder needed: e.g., poker, blackjack, roulette, or baccarat; excluding electronic machine versions

- 1 In person at a land-based casino
- 2 Online

- 3 Both
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q1x7b

In the past 12 months, how many minutes or hours did you normally spend EACH TIME you bet or spent money on **Casino table games**?

Enter EXACT number of MINUTES (i.e., duration of play in a normal gambling session)

(do not read; DO NOT ROUND)

Minimum: 1, Maximum: 480

_____ minutes

- 8 Refused
- 9 Don't know

Q1x7c

In the past 12 months, how much money, not including winnings, did you spend on **[Casino] table games** in a typical month?

(includes both in person & online betting)

INTERVIEWER: If asked for clarification about spending questions: we mean spending that is out of pocket, and doesn't include money won and THEN spent.

Minimum: 0, Maximum: 9999999

\$ _____

- 8 Refused / No response
- 9 Don't know

Page *Show if Q1 8 Card or boards games friends*

Q1x8a

In the past 12 months, how much money, not including winnings, did you spend on playing **Cards or board games** with family or friends in a typical month?

INTERVIEWER: If asked for clarification about spending questions: we mean spending that is out of pocket, and doesn't include money won and THEN spent.

Minimum: 0, Maximum: 9999999

\$ _____

- 8 Refused / No response
- 9 Don't know

Page Show if Q1 9 Card non regulated

Q1x9a

In the past 12 months, how much money, not including winnings, did you spend on playing **Card games in non-regulated settings** in a typical month?

INTERVIEWER: Only if reminder needed: e.g., card rooms; other than with family or friends

INTERVIEWER: If asked for clarification about spending questions: we mean spending that is out of pocket, and doesn't include money won and THEN spent.

Minimum: 0, Maximum: 9999999

\$ _____

- .8 Refused / No response
- .9 Don't know

Page Show if Q1 10 Video games

Q1x10a

In the past 12 months, how much money, not including winnings, did you spend on **Playing video games** in a typical month? This only includes betting on video game outcomes, not in-app or in-game purchases.

INTERVIEWER: If asked for clarification about spending questions: we mean spending that is out of pocket, and doesn't include money won and THEN spent.

Minimum: 0, Maximum: 9999999

\$ _____

- .8 Refused / No response
- .9 Don't know

Page Show if Q1 11 Games of skill

Q1x11a

In the past 12 months, how much money, not including winnings, did you spend on **Games of skill** in a typical month?

INTERVIEWER: Only if reminder needed: e.g., games like pool, golf, bowling, darts; this only includes betting on game outcomes, not costs to participate

INTERVIEWER: If asked for clarification about spending questions: we mean spending that is out of pocket, and doesn't include money won and THEN spent.

Minimum: 0, Maximum: 9999999

\$ _____

- .8 Refused / No response
- .9 Don't know

Page Show if Q1 12 Horse races

Q1x12a

In the past 12 months, did you place your **Horse race** bets in person, online, or both?

- 1 In person
- 2 Online
- 3 Both
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q1x12b

In the past 12 months, how much money, not including winnings, did you spend on **Horse races** in a typical month?

(includes both in person & online betting)

INTERVIEWER: If asked for clarification about spending questions: we mean spending that is out of pocket, and doesn't include money won and THEN spent.

Minimum: 0, Maximum: 9999999

\$ _____

- 8 Refused / No response
- 9 Don't know

Page Show if Q1 13 Sport Select

Q1x13a

In the past 12 months, did you place your **Sport Select bets** in person, online, or both?

INTERVIEWER: Only if reminder needed: e.g., Pro-Line, Over/Under, Point Spread

- 1 In person
- 2 Online
- 3 Both
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q1x13b

In the past 12 months, how much money, not including winnings, did you spend on **Sport Select** in a typical month?

(includes both in person & online betting)

INTERVIEWER: If asked for clarification about spending questions: we mean spending that is out of pocket, and doesn't include money won and THEN spent.

Minimum: 0, Maximum: 9999999

\$ _____

- .8 Refused / No response
- .9 Don't know

Page Show if Q1 14 Sport Pools

Q1x14a

In the past 12 months, did you place your **Sports pools bets** in person, online, or both?

INTERVIEWER: Only if reminder needed: e.g., bets on sports such as hockey, football & golf; formal (e.g., charity-sponsored) or informal (e.g., at work

- 1 In person
- 2 Online
- 3 Both
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q1x14b

In the past 12 months, how much money, not including winnings, did you spend on **Sports pools** in a typical month?

(includes both in person & online betting)

INTERVIEWER: If asked for clarification about spending questions: we mean spending that is out of pocket, and doesn't include money won and THEN spent.

Minimum: 0, Maximum: 9999999

\$ _____

- .8 Refused / No response
- .9 Don't know

Page Show if Q1 15 Outcomes sporting

Q1x15a

In the past 12 months, how much money, not including winnings, did you spend on **Outcomes of sporting events** in a typical month?

INTERVIEWER: Only if reminder needed: e.g., bets made with friends; i.e., other than Sports pools or Sport Select

INTERVIEWER: If asked for clarification about spending questions: we mean spending that is out of pocket, and doesn't include money won and THEN spent.

Minimum: 0, Maximum: 9999999

\$ _____

- .8 Refused / No response
- .9 Don't know

Page Show if Q1 16 Sports bookie

Q1x16a

In the past 12 months, how much money, not including winnings, did you spend on **Sports with a bookie** in a typical month?

INTERVIEWER: If asked for clarification about spending questions: we mean spending that is out of pocket, and doesn't include money won and THEN spent.

Minimum: 0, Maximum: 9999999

\$ _____

- ⁻⁸ Refused / No response
- ⁻⁹ Don't know

Page Show if Q1 17 Stocks options

Q1x17a

In the past 12 months, how much money, INCLUDING profits from earlier investments, did you spend on **High-risk stocks, options, or commodities markets** in a typical month?

INTERVIEWER: Only if reminder needed: (i.e., not mutual funds or RRSPs; e.g., day trading, penny stocks, shorting, options, currency futures, etc.

Minimum: 0, Maximum: 9999999

\$ _____

- ⁻⁸ Refused / No response
- ⁻⁹ Don't know

Page Show if Q1 18 other NOT NEVER

Q1x18a

In the past 12 months, how much money, not including winnings, did you spend on <<**Q1other.text**>> in a typical month?

INTERVIEWER: If asked for clarification about spending questions: we mean spending that is out of pocket, and doesn't include money won and THEN spent.

Minimum: 0, Maximum: 9999999

\$ _____

- ⁻⁸ Refused / No response
- ⁻⁹ Don't know

Section

Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12

Page Show if Q1 any gambling Not never

Q2

The next questions are part of standard measurement scales that are used in gambling surveys similar to this one. Some of these questions may not apply to you but please try to be as accurate as possible. Remember that all your answers are strictly confidential.

Thinking about the past 12 months, how often have you bet more than you could really afford to lose?

Would you say: Never, sometimes, most of the time, or almost always?

- 1 Never
- 2 Sometimes
- 3 Most of the time
- 4 Almost always
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q3

Still thinking about the past 12 months, how often have you needed to gamble with larger amounts of money to get the same feeling of excitement? Would you say: Never, sometimes, most of the time, or almost always?

- 1 Never
- 2 Sometimes
- 3 Most of the time
- 4 Almost always
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q4

When you gambled, how often did you go back another day to try to win back the money you lost? (Would you say:) Never, sometimes, most of the time, or almost always?

INTERVIEWER: Bracketed question text is optional

- 1 Never
- 2 Sometimes
- 3 Most of the time
- 4 Almost always
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q5

(Thinking about the past 12 months)

How often have you borrowed money or sold anything to get money to gamble? (Would you say: Never, sometimes, most of the time, or almost always?)

INTERVIEWER: Bracketed question text is optional

- 1 Never
- 2 Sometimes
- 3 Most of the time
- 4 Almost always
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q6

(Thinking about the past 12 months)

How often have you felt that you might have a problem with gambling? (Would you say: Never, sometimes, most of the time, or almost always?)

INTERVIEWER: Bracketed question text is optional

- 1 Never
- 2 Sometimes
- 3 Most of the time
- 4 Almost always
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q7

(Thinking about the past 12 months)

How often have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true? (Would you say: Never, sometimes, most of the time, or almost always?)

INTERVIEWER: Bracketed question text is optional

- 1 Never
- 2 Sometimes
- 3 Most of the time
- 4 Almost always
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q8

(Thinking about the past 12 months)

How often have you felt guilty about the way you gamble, or what happens when you gamble? (Would you say: Never, sometimes, most of the time, or almost always?)

INTERVIEWER: Bracketed question text is optional

- 1 Never
- 2 Sometimes
- 3 Most of the time
- 4 Almost always
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q9

(Thinking about the past 12 months)

How often has your gambling caused you any health problems, including stress or anxiety? (Would you say: Never, sometimes, most of the time, or almost always?)

INTERVIEWER: Bracketed question text is optional

- 1 Never
- 2 Sometimes
- 3 Most of the time
- 4 Almost always
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q10

(Thinking about the past 12 months)

How often has your gambling caused any financial problems for you or your household? (Would you say: Never, sometimes, most of the time, or almost always?)

INTERVIEWER: Bracketed question text is optional

- 1 Never
- 2 Sometimes
- 3 Most of the time
- 4 Almost always
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q11

(Thinking about the past 12 months)

How often have you felt like you would like to stop betting money or gambling but you didn't think you could? (Would you say: Never, sometimes, most of the time, or almost always?)

INTERVIEWER: Bracketed question text is optional

- 1 Never
- 2 Sometimes

- 3 Most of the time
- 4 Almost always
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Q12

(Thinking about the past 12 months)

How often have you gambled as a way of escaping problems or to help you feel better when you were depressed? (Would you say: Never, sometimes, most of the time, or almost always?)

INTERVIEWER: Bracketed question text is optional

- 1 Never
- 2 Sometimes
- 3 Most of the time
- 4 Almost always
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No response

Section

Alcohol, Q13, Q14, Q15, Q16, Q17, Q18, Q19, Q20

Page

Alcohol

The next questions explore some of your gambling experiences, alcohol and drug use, and health-related issues. Once again, all your answers will be kept strictly confidential.

Now some questions about your alcohol consumption. A "drink" refers to a can or bottle of beer, a glass of wine, a wine cooler, a cocktail, or a shot of hard liquor.

INTERVIEWER NOTE: FYI a 'drink' refers to...

- one bottle or can of beer, cider, or cooler (5% alcohol; 12 oz), or a small draft;
- one glass of wine (12% alcohol; 5 oz); or
- one cocktail with 1½ oz. of liquor or spirit (40% alcohol; like scotch, gin, vodka).

Q13

DURING THE PAST 12 MONTHS, how often have you had a drink containing alcohol?

Never, monthly or less, 2 to 4 times a month, 2 to 3 times a week, or 4 or more times a week?

- 1 Never
- 2 Monthly or less
- 3 2 to 4 times a month

- 4 2 to 3 times a week
- 5 4 or more times a week
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused / No Response

Q14 *Show if Q13 NOT Never*

(In the past 12 months)

How many drinks containing alcohol did you have on a typical day when you were drinking? 1 or 2, 3 or 4, 5 or 6, 7 to 9, or 10 or more?

INTERVIEWER: Bracketed question text is optional

- 1 1 or 2
- 2 3 or 4
- 3 5 or 6
- 4 7 to 9
- 5 10 or more
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused / No Response

Q15 *Show if Q13 NOT Never*

(In the past 12 months)

How often have you had five or more drinks on one occasion? Never, less than monthly, monthly, weekly, daily or almost daily?

INTERVIEWER: Bracketed question text is optional

- 1 Never
- 2 Less than monthly
- 3 Monthly
- 4 Weekly
- 5 Daily or almost daily
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused / No Response

Q16

IN THE PAST 12 MONTHS, how often did you use cannabis (the term "cannabis" refers to marijuana, hashish, hash oil or any other preparation of the cannabis plant.)?

Never, less than once a month, 1 to 3 times a month, once a week, more than once a week, or daily or almost daily?

INTERVIEWER: If asked for clarification, this includes both medical and non-medical use of cannabis.

- 1 Never
- 2 Less than once a month
- 3 1 to 3 times a month
- 4 Once a week

- 5 More than once a week
- 6 Daily or almost daily
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused / No Response

Q17

(In the past 12 months,) how often did you use an illegal drug or prescription medication for non-medical reasons, not including cannabis?

Never, less than once a month, 1 to 3 times a month, once a week, more than once a week, daily or almost daily?

INTERVIEWER: If asked to clarify the meaning of "non-medical reasons": "For instance because of the experience or feeling it caused".

Bracketed question text is optional

- 1 Never
- 2 Less than once a month
- 3 1 to 3 times a month
- 4 Once a week
- 5 More than once a week
- 6 Daily or almost daily
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused / No Response

Q18 *Show if Q1 any gambling AND Q13 NOT never*

IN THE PAST 12 MONTHS, how often did you drink alcohol when you gambled? Always, often, sometimes, rarely, or never?

- 1 Always
- 2 Often
- 3 Sometimes
- 4 Rarely
- 0 Never
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused / No Response

Q19 *Show if Q1 any gambling AND Q16 NOT never*

(IN THE PAST 12 MONTHS)

How often did you use cannabis when you gambled? Always, often, sometimes, rarely, or never?

INTERVIEWER: Bracketed question text is optional if Q18 asked beforehand.

- 1 Always
- 2 Often
- 3 Sometimes
- 4 Rarely

- 0 Never
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused / No Response

Q20 Show if Q1 any gambling AND Q17 NOT never
(IN THE PAST 12 MONTHS)

How often did you use an illegal drug or prescription drug for non-medical reasons when you gambled?

Always, often, sometimes, rarely, or never?

INTERVIEWER: Not including cannabis; Bracketed question text is optional if Q18 and/or Q19 asked beforehand.

- 1 Always
- 2 Often
- 3 Sometimes
- 4 Rarely
- 0 Never
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused / No Response

Section

Q21, Q22, Q23, Q24

Page

Q21 Show if Q13 NOT Never

Which of the following options best describes the impact of alcohol use in your life?

DURING THE PAST 12 MONTHS, alcohol has: not been a problem in my life, or been a minor, moderate, major or very serious problem in my life.

- 0 Not been a problem in my life
- 1 Been a minor problem in my life
- 2 Been a moderate problem in my life
- 3 Been a major problem in my life
- 4 Been a very serious problem in my life
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q22 Show if Q1 any gambling AND Q21 alcohol problem

Again, please choose the option that best describes your situation.

My problem with alcohol was: not related to my gambling, or slightly, moderately, strongly, or totally related to my gambling.

- 0 Not related to my gambling

- 1 Slightly related to my gambling
- 2 Moderately related to my gambling
- 3 Strongly related to my gambling
- 4 Totally related to my gambling
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q23 *Show if Q16 NOT Never*

Which of the following options best describes the impact of cannabis use in your life?

DURING THE PAST 12 MONTHS, cannabis has: not been a problem in my life, or been a minor, moderate, major or very serious problem in my life.

- 0 Not been a problem in my life
- 1 Been a minor problem in my life
- 2 Been a moderate problem in my life
- 3 Been a major problem in my life
- 4 Been a very serious problem in my life
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q24 *Show if Q1 any gambling AND Q23 cannabis problem*

Again, please choose the option that best describes your situation.

My problem with cannabis was: not related to my gambling, or slightly, moderately, strongly, or totally related to my gambling.

- 0 Not related to my gambling
- 1 Slightly related to my gambling
- 2 Moderately related to my gambling
- 3 Strongly related to my gambling
- 4 Totally related to my gambling
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Section

Q25, Q26, Q27, Q28, Q29, Q30, Q31, Q32, Q33, Q34

Page

Q25

The next questions are about your mental health and wellbeing. We understand that they may be sensitive to some people, but we have to ask the same questions of everyone.

Using a scale of 0 to 10, where 0 means "Very dissatisfied" and 10 means "Very satisfied", how do you feel

about your life as a whole right now?

- 0 0 - Very dissatisfied
- 1 1
- 2 2
- 3 3
- 4 4
- 5 5
- 6 6
- 7 7
- 8 8
- 9 9
- 10 10 - Very satisfied
- 8 DO NOT READ: Refused/No Response
- 9 DO NOT READ: Don't know

Q26

Would you describe your sense of belonging to your local community as: very strong, somewhat strong, somewhat weak, or very weak?

- 1 Very strong
- 2 Somewhat strong
- 3 Somewhat weak
- 4 Very weak
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q27

Thinking about the amount of stress in your life, would you say that most of your days are: not at all stressful, not very stressful, a bit stressful, quite a bit stressful, or extremely stressful?

- 1 Not at all stressful
- 2 Not very stressful
- 3 A bit stressful
- 4 Quite a bit stressful
- 5 Extremely stressful
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q28

In general, would you say your mental health is: excellent, very good, good, fair, or poor?

- 1 Excellent
- 2 Very good
- 3 Good
- 4 Fair
- 5 Poor

- ₉₈ DO NOT READ: Don't know
- ₉₉ DO NOT READ: Refused/No Response

Q29

I am now going to ask about the impacts of worry, hope, and self-control in your life. For each statement, please choose the option that best describes your situation.

IN THE PAST 12 MONTHS, **increased worry** has: not been a problem in my life, or been a minor, moderate, major or very serious problem in my life.

- ₀ Not been a problem in my life
- ₁ Been a minor problem in my life
- ₂ Been a moderate problem in my life
- ₃ Been a major problem in my life
- ₄ Been a very serious problem in my life
- ₉₈ DO NOT READ: Don't know
- ₉₉ DO NOT READ: Refused/No Response

Q30 *Show if Q1 any gambling AND Q29 Worry problem*

My problem with **increased worry** was: not related to my gambling, or slightly, moderately, strongly, or totally related to my gambling.

- ₀ Not related to my gambling
- ₁ Slightly related to my gambling
- ₂ Moderately related to my gambling
- ₃ Strongly related to my gambling
- ₄ Totally related to my gambling
- ₉₈ DO NOT READ: Don't know
- ₉₉ DO NOT READ: Refused/No Response

Q31

IN THE PAST 12 MONTHS, **decreased hope** has: not been a problem in my life, or been a minor, moderate, major or very serious problem in my life.

- ₀ Not been a problem in my life
- ₁ Been a minor problem in my life
- ₂ Been a moderate problem in my life
- ₃ Been a major problem in my life
- ₄ Been a very serious problem in my life
- ₉₈ DO NOT READ: Don't know
- ₉₉ DO NOT READ: Refused/No Response

Q32 *Show if Q1 any gambling AND Q31 Hope problem*

My problem with **decreased hope** was: not related to my gambling, or slightly, moderately, strongly, or totally related to my gambling.

- 0 Not related to my gambling
- 1 Slightly related to my gambling
- 2 Moderately related to my gambling
- 3 Strongly related to my gambling
- 4 Totally related to my gambling
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q33

IN THE PAST 12 MONTHS, **decreased self-control** has: not been a problem in my life, or been a minor, moderate, major or very serious problem in my life.

- 0 Not been a problem in my life
- 1 Been a minor problem in my life
- 2 Been a moderate problem in my life
- 3 Been a major problem in my life
- 4 Been a very serious problem in my life
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q34 *Show if Q1 any gambling AND Q33 Self control problem*

My problem with **decreased self-control** was: not related to my gambling, or slightly, moderately, strongly, or totally related to my gambling.

- 0 Not related to my gambling
- 1 Slightly related to my gambling
- 2 Moderately related to my gambling
- 3 Strongly related to my gambling
- 4 Totally related to my gambling
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Section

Q35, Q36, Q37, Q38, Q39, Q38txt, Q40, Q41, Q42, Q43, Q45, Q46, Q47, Q48, Q49, Q50, Q51, Q52, Q53, END

Page

Q35

Are you aware of problem gambling treatment services available in PEI?

- 1 Yes

- 2 No
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q36

Are you aware of the toll-free PEI Gambling Support Line?

INTERVIEWER: If asked: PEI Gambling Support Line is 1-855-255-4255 [toll-free]

- 1 Yes
- 2 No
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q37

Are you aware that in-person individual counselling for gambling issues is available through Addiction Services?

- 1 Yes
- 2 No
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q38 *Show if Q2 to Q12 ANY Sometimes to almost always*

If you thought you had a gambling problem, would you attempt to access treatment services in P.E.I.?

- 1 Yes
- 2 No
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q39 *Show if Q38 No*

What are some reasons that you would not attempt to access gambling treatment services in P.E.I.?

- 8 DO NOT READ: Refused/No response
- 9 DO NOT READ: Don't know

Q38txt

If you are experiencing difficulties in any of the areas we discussed in this survey, you can receive free and confidential support by calling the Island Helpline at 1-800-218-2885.

INTERVIEWER: If asked: more information about the Island Helpline can be found at <https://www.theislandhelpline.com>

Page

Q40

Finally, we would like to ask you a few background questions. Like all your other answers, this information will be kept strictly confidential.

What is your marital status?

- 1 Single (never married)
- 2 Married
- 3 Common-law
- 4 Divorced or separated
- 5 Widowed
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q41

What is the highest level of education you have completed?

- 1 No schooling
- 2 Some high school/junior high or less
- 3 Completed high school
- 4 Some community college / technical school
- 5 Completed community college / technical school (certificate, diploma)
- 6 Some University
- 7 Completed Bachelor's Degree (Arts, Science, Engineering)
- 8 Completed Master's degree: (MA, MSc, MLS, MSW)
- 9 Completed Doctoral Degree: (PhD, EdD)
- 10 Professional Degree (Law, Medicine, Dentistry)
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q42

The following question is about your personal use of the Internet, from any location. Please exclude business and school-related use.

Excluding time spent streaming content and using video gaming services, how many hours do you use the Internet in a typical week?

- 1 Less than 5 hours per week
- 2 5 to less than 10 hours per week
- 3 10 to less than 20 hours per week
- 4 20 to less than 40 hours per week
- 5 40 hours or more per week
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q43

What are the first three characters of your postal code?

Please do not enter personally-identifying information (e.g., name, email address, phone number, mailing address), as anything you enter may be shared with the sponsor of this research.

- 8 DO NOT READ: Refused/No Response
- 9 DO NOT READ: Don't know

Q45

What was your sex at birth?

DO NOT READ OPTIONS

- 1 Male
- 2 Female
- 3 Other (specify): _____
- 8 Refused / No response
- 9 Don't know

Q46

What gender do you identify as right now?

DO NOT READ OPTIONS

- 1 Male
- 2 Female
- 3 Other (specify): _____
- 8 Refused / No response
- 9 Don't know

Q47

Were you born in Canada?

- 1 Yes
- 2 No
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q48 *Show if Q47 Yes Dk Ref*

Are you an Indigenous person, that is, First Nations, Métis or Inuk (Inuit)? (First Nations includes Status and Non-Status Indians).

- 1 Yes

- 2 No
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q49 Show if Q47 no

What country were you born in?

- 8 DO NOT READ: Refused/No response
- 9 DO NOT READ: Don't know

Q50

Which of the following situations describe your employment status at any point IN THE PAST 12 MONTHS?

Please select all that applied at any time during the past year: employed seasonally, employed full-time (non-seasonal), employed part-time (non-seasonal), unemployed (looking for work, or unable to work), student, retired, or homemaker.

- 1 Employed seasonally (part-time or full-time)
- 2 Employed full-time (non-seasonal, 30 or more hrs/week)
- 3 Employed part-time (non-seasonal, less than 30hrs/week)
- 4 Unemployed (out of work but looking for work)
- 5 Unemployed (unable to work, e.g. disabled, injured, sick)
- 6 Student
- 7 Retired
- 8 Homemaker
- 9 DO NOT READ: Other (Specify): _____
- 98 DO NOT READ: Don't know (Exclusive)
- 99 DO NOT READ: Refused/No Response (Exclusive)

Q51

Thinking about your personal income from all sources IN THE PAST 12 MONTHS; from which of the following sources did you receive any personal income from?

Select all that apply

- 1 Wages and salaries
- 2 Income from self-employment
- 3 Employment insurance
- 4 Workers' compensation
- 5 Benefits from Canada or Quebec Pension Plan
- 6 Old Age Security and Guaranteed Income Supplement
- 7 Social assistance or welfare (i.e., provincial or municipal)

- 8 DO NOT READ: None (Exclusive)
- 98 DO NOT READ: Don't know (Exclusive)
- 99 DO NOT READ: Refused/No Response (Exclusive)

Q52 Show if Q51 Benefits OR Social Assistance

Did your personal income include a supplement for people with disabilities?

- 1 Yes
- 2 No
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Q53

Now, thinking about your **total household** income, what is your best estimate of the **total household** income received by all household members, from all sources, before taxes and deductions, IN THE PAST 12 MONTHS?

Please stop me when I have read the category which applies to you. Was it ...

- 1 Less than \$20,000
- 2 Between \$20,000 and \$30,000 (\$29,999.99)
- 3 Between \$30,000 and \$40,000
- 4 Between \$40,000 and \$50,000
- 5 Between \$50,000 and \$60,000
- 6 Between \$60,000 and \$70,000
- 7 Between \$70,000 and \$80,000
- 8 Between \$80,000 and \$90,000
- 9 Between \$90,000 and \$100,000
- 10 Between \$100,000 and \$120,000
- 11 Between \$120,000 and \$150,000
- 12 More than \$150,000?
- 98 DO NOT READ: Don't know
- 99 DO NOT READ: Refused/No Response

Page

END

Thank you for helping us with this survey. Your responses are very important to us, and we do appreciate the time it has taken to answer our questions.

If you are interested in seeing the final results of this survey, you can email the Research Manager, Mary-Ann MacSwain at mmmacswain@upe.ca. The final results will also be published online at www.chcresearch.ca in the spring of 2020.

Status Code: -1

Help Page

If you are having some stress/emotional difficulties at this time, it might help to talk to someone. I have a toll-free number I could give you if you were interested in talking to someone..If you are in a crisis, call 9-1-1 or go to your local emergency department.

Island Helpline: 1-800-218-2885 [toll-free]

[Interviewer Note: Free, confidential emotional support and crisis intervention for Islanders \(24 hours a day, seven days a week\).](#)

PEI Gambling Support Line: 1-855-255-4255 [toll-free]

[Interviewer Note: Free and confidential support for Islanders \(24 hours a day, seven days a week\). You can call the support line if your family member, friend, or co-worker is hurting themselves and others by gambling. If you are not ready to talk to a counsellor, you can ask for information to be mailed or emailed to you.](#)

Appendix B – Missing data for survey variables (unweighted percentages)

	Missing %
Demographic	
County	<1.0
Age	1.4
Gender	1.0
Education	<1.0
Marital Status	<1.0
Household Income	13.9
Urban/Rural	6.2
Employment	<1.0
Gambling activity	
Purchased lottery tickets	<1.0
Purchased daily lottery tickets	<1.0
Purchased or played online instant-win tickets	<1.0
Purchased raffle or fundraising tickets	1.2
Played Bingo for money or prizes	<1.0
Bet or spent money on electronic gambling machines	<1.0
Played table games at casinos	<1.0
Bet on cards or board games with family or friends	<1.0
Bet on card games in non-regulated settings	<1.0
Bet on playing video games	<1.0
Bet on games of skill	<1.0
Bet on live horse races	<1.0
Played a sports lottery	<1.0
Bet or spent money on sports pools	<1.0
Bet on outcomes of sporting events	<1.0
Bet on sports with a bookie	<1.0
Invested in high-risk stocks, options, or commodities markets	<1.0
Bet or spent money on other forms of gambling	<1.0

	Missing %
Gambling Method of Access (In-person/Online)	
Purchased lottery tickets	2.5
Purchased daily lottery tickets	38.6
Purchased or played online instant-win tickets	9.5
Played Bingo for money or prizes	17.3
Bet or spent money on electronic gambling machines	7.4
Played table games at casinos	14.3
Bet on live horse races	5.6
Played a sports lottery	x
Bet or spent money on sports pools	x
Problem Gambling Score Index (* = scored questions)	
*1. How often have you bet more than you could really afford to lose?	<1.0
*2. How often have you needed to gamble with larger amounts of money to get the same feeling of excitement?	<1.0
*3. When you gambled, how often did you go back another day to try to win back the money you lost?	<1.0
*4. How often have you borrowed money or sold anything to get money to gamble?	<1.0
*5. How often have you felt that you might have a problem with gambling?	<1.0
*6. How often have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?	<1.0
*7. How often have you felt guilty about the way you gamble, or what happens when you gamble?	<1.0
*8. How often has your gambling caused you any health problems, including stress or anxiety?	<1.0
*9. How often has your gambling caused any financial problems for you or your household?	<1.0
10. How often have you felt like you would like to stop betting money or gambling but you didn't think you could?	1.0
11. How often have you gambled as a way of escaping problems or to help you feel better when you were depressed?	<1.0
Alcohol	
Past-year drinking	<1.0
Frequency of binge drinking	<1.0
Hazardous drinking	2.5
Frequency of drinking alcohol while gambling	<1.0
Impact of alcohol use on life	<1.0

	Missing %
Cannabis use	
Frequency of cannabis use	<1.0
Mental health	
Life satisfaction score	1.9
Sense of belonging to community	1.8
Amount of stress in life	<1.0
Self-rated mental health	<1.0
Impact of increased worry on life	<1.0
Impact of decreased hope on life	1.6
Impact of decreased self-control on life	1.2
Source of personal income	
Source of personal income	3.7
Supplement for people with disabilities	<1.0
Awareness of treatment services	
Aware of problem gambling treatment services in PEI	<1.0
Aware of toll-free PEI Gambling Support Line	<1.0
Aware of in-person individual counselling for gambling issues	1.2
Attempt to seek help if having a gambling problem	5.3
Derived variables	
Past-year gambler	<1.0
Past-year online gambler	8.1
PGSI category	1.6

Appendix C - Demographic characteristics of gambling survey respondents vs PEI population census estimates (Statistics Canada)⁴³

	Unweighted Estimates				Weighted Estimates			PEI Census Estimates	
	%	95% CI		CV	%	95% CI		CV	%
County									
Prince	27.8	25.3	30.4	4.7%	30.6	27.7	33.6	4.9%	29.4
Queens	42.7	39.9	45.5	3.3%	57.2	54.1	60.3	2.8%	58.8
Kings	29.5	27.0	32.1	4.5%	12.2	10.7	13.8	6.4%	11.8
Age									
18-34	16.4	14.4	18.6	6.6%	23.5	20.8	26.5	6.3%	27.0
35-54	26.6	24.2	29.2	4.8%	32.8	29.8	36.0	4.8%	30.4
55+	57.0	54.2	59.8	2.5%	43.6	40.6	46.7	3.6%	42.6
Gender									
Women	55.4	52.6	58.2	2.6%	52.0	48.8	55.2	3.1%	51.2
Men	44.6	41.8	47.4	3.2%	48.0	44.8	51.2	3.4%	48.8
Education									
High school diploma or less	26.5	24.1	29.1	4.8%	23.5	21.0	26.3	5.7%	46.3
Some postsecondary, college or technical program	40.2	37.4	43.0	3.5%	41.3	38.2	44.4	3.9%	34.5
Bachelor's and/or advanced degree	33.3	30.7	36.0	4.1%	35.2	32.2	38.3	4.4%	19.1
Marital status									
Never married	18.8	16.6	21.1	6.0%	23.1	20.4	26.0	6.2%	25.6
Married, Common-law	61.2	58.4	64.0	2.3%	60.4	57.3	63.5	2.6%	59.6
Divorced, Widowed, Separated	20.0	17.8	22.4	5.8%	16.5	14.4	18.9	7.0%	14.8
Household income									
Less than \$40K	31.9	29.1	34.8	4.5%	29.3	26.4	32.5	5.3%	18.2
\$40K to less than \$80K	34.3	31.5	37.3	4.3%	33.1	30.0	36.4	4.9%	40.0
\$80K or more	33.8	30.9	36.7	4.4%	37.5	34.3	40.9	4.5%	41.8

Appendix D – Past-year gambling participation (including and excluding charitable gambling), by demographics, PEI, 2019

	Past-Year Gambling Participation (Including charitable gamblers)					Past-Year Gambling Participation (Excluding charitable gamblers)				
	%	95% CI	CV	P-value	%	95% CI	CV	P-value		
County										
Prince	83.4	78.5	87.4	2.7%	0.81	65.5	59.7	70.9	4.4%	0.51
Queens	82.4	78.8	85.5	2.1%		68.2	64.0	72.2	3.0%	
Kings	84.2	79.1	88.2	2.7%		64.4	58.2	70.1	4.7%	
Age										
18-34	79.7	73.0	85.1	3.9%	0.14	63.0	55.6	69.8	5.8%	0.07
35-54	86.5	82.0	90.0	2.3%		72.3	66.8	77.1	3.6%	
55+	83.3	79.8	86.3	2.0%		65.7	61.5	69.7	3.2%	
Gender										
Women	81.4	77.8	84.6	2.1%	0.10	64.0	59.8	68.0	3.3%	0.02
Men	85.5	81.8	88.5	2.0%		71.1	66.6	75.1	3.1%	
Education										
High school diploma or less	81.0	75.2	85.6	3.3%	0.46	65.1	58.7	71.0	4.8%	0.10
Some postsecondary, college or technical program	84.8	80.8	88.1	2.2%		70.9	66.2	75.2	3.3%	
Bachelor's and/or advanced degree	82.5	77.9	86.3	2.6%		63.9	58.6	68.9	4.1%	
Marital Status										
Never married	79.2	72.8	84.4	3.7%	0.20	64.8	57.8	71.3	5.3%	0.58
Married, Common-law	84.5	81.3	87.3	1.8%		67.0	63.1	70.7	2.9%	
Divorced, Widowed, Separated	82.8	76.7	87.7	3.4%		69.9	63.0	76.0	4.8%	
Household Income										
Less than \$40K	78.5	72.9	83.2	3.3%	0.01	65.9	59.8	71.5	4.5%	0.76
\$40K to less than \$80K	86.8	82.1	90.4	2.4%		67.5	61.8	72.7	4.1%	
\$80K or more	87.6	83.3	90.9	2.2%		68.8	63.3	73.9	3.9%	
Urban/Rural										
Rural	85.7	82.0	88.7	2.0%	0.07	67.9	63.3	72.2	3.4%	0.73
Urban	81.2	77.4	84.5	2.2%		66.8	62.4	70.8	3.2%	

Appendix E- Past-year participation in specific gambling activities, PEI, 2019

	Past-Year Participation			
	%	95% CI		CV
Bet on sports with a bookie	x	x	x	x
Bet on playing video games	1.7	1.0	2.9	26.3%
Bet or spent money on other forms of gambling	1.9	1.2	3.0	24.3%
Bet on card games in non-regulated settings	2.6	1.7	4.0	21.2%
Played a sports lottery	3.6	2.5	5.0	17.7%
Invested in high-risk stocks, options, or commodities markets	4.2	3.0	5.8	16.6%
Bet on outcomes of sporting events	4.4	3.2	5.9	15.7%
Purchased daily lottery tickets	4.9	3.7	6.6	14.8%
Played table games at casinos	5.3	4.0	7.0	14.1%
Bet on games of skill	5.5	4.2	7.2	13.7%
Bet or spent money on sports pools	7.0	5.5	8.9	12.1%
Played Bingo for money or prizes	7.7	6.2	9.5	11.0%
Bet or spent money on electronic gambling machines	10.9	9.0	13.0	9.3%
Bet on cards or board games with family or friends	13.0	10.9	15.4	8.7%
Bet on live horse races	14.8	12.7	17.3	7.9%
Purchased or played online instant-win tickets	19.7	17.3	22.4	6.5%
Purchased lottery tickets	47.7	44.5	50.9	3.4%
Purchased raffle or fundraising tickets	64.0	60.8	67.0	2.5%

Appendix F – Past-year participation in specific gambling activities, by demographics, PEI, 2019

	Purchased lottery tickets					Purchased daily lottery tickets					Purchased or played online instant-win tickets					Purchased raffle or fundraising tickets				
	%	95% CI	CV	p		%	95% CI	CV	p		%	95% CI	CV	p		%	95% CI	CV	p	
County																				
Prince	46.0	40.2	51.9	6.5%	0.26	5.9	3.5	9.8	26.7%	0.58	20.9	16.5	26.0	11.7%	0.40	64.2	58.3	69.8	4.6%	0.29
Queens	49.6	45.3	54.0	4.5%		4.5	3.0	6.6	20.5%		18.4	15.3	22.1	9.3%		62.6	58.3	66.7	3.4%	
Kings	43.0	36.9	49.3	7.4%		4.7	2.8	7.8	26.6%		22.9	17.7	29.1	12.7%		69.6	63.3	75.2	4.4%	
Age																				
18-34	28.3	22.3	35.1	11.6%	<0.01	5.3	2.8	9.9	32.2%	0.24	24.2	18.6	30.9	13.0%	0.09	56.9	49.6	63.9	6.4%	0.01
35-54	53.9	48.1	59.7	5.5%		6.5	4.1	10.3	23.6%		21.1	16.8	26.2	11.4%		70.3	64.6	75.5	3.9%	
55+	54.5	50.1	58.8	4.1%		3.7	2.4	5.7	22.3%		17.0	14.0	20.5	9.8%		64.6	60.3	68.7	3.3%	
Gender																				
Women	45.3	41.1	49.6	4.8%	0.10	4.0	2.6	5.9	20.6%	0.19	20.4	17.2	24.0	8.6%	0.62	65.0	60.8	69.0	3.2%	0.68
Men	50.7	46.0	55.5	4.8%		5.8	3.8	8.7	21.0%		19.1	15.6	23.2	10.0%		63.7	59.0	68.2	3.7%	
Education																				
High school diploma or less	43.7	37.6	50.1	7.3%	<0.01	7.1	4.3	11.3	24.6%	0.06	17.8	13.6	23.1	13.6%	<0.01	54.2	47.7	60.5	6.1%	<0.01
Some postsecondary, completion of college or technical program	55.1	50.1	60.1	4.6%		5.7	3.7	8.7	22.1%		25.5	21.4	30.1	8.7%		66.3	61.3	70.9	3.7%	
Bachelor's and/or advanced degree	42.3	37.1	47.7	6.4%		2.7	1.4	5.2	32.5%		14.7	11.2	18.9	13.3%		67.7	62.5	72.6	3.8%	
Marital Status																				
Never married	32.1	26.0	38.9	10.3%	<0.01	8.1	4.9	13.2	25.3%	0.02	22.2	17.0	28.5	13.2%	0.60	54.6	47.5	61.4	6.5%	<0.01
Married, Common-law	50.7	46.7	54.8	4.1%		4.5	3.1	6.6	19.4%		19.1	16.1	22.5	8.5%		68.1	64.2	71.8	2.9%	
Divorced, Widowed, Separated	59.6	52.2	66.6	6.2%		2.1	0.9	4.8	43.4%		19.2	13.9	25.8	15.8%		62.9	55.3	69.8	5.9%	
Household Income																				
Less than \$40K	43.1	37.1	49.2	7.2%	0.15	7.6	4.8	11.8	23.2%	0.10	18.2	14.0	23.4	13.2%	0.11	53.4	47.2	59.5	5.9%	<0.01
\$40K to less than \$80K	50.5	44.7	56.3	5.9%		5.0	2.9	8.3	26.7%		24.0	19.3	29.4	10.7%		66.5	60.7	71.9	4.3%	
\$80K or more	50.4	44.8	56.1	5.8%		3.4	1.8	6.3	31.8%		17.6	13.7	22.4	12.4%		75.3	70.0	79.9	3.4%	
Urban/Rural																				
Rural	49.8	45.0	54.6	4.9%	0.45	4.4	2.9	6.7	21.4%	0.57	23.0	19.2	27.3	9.0%	0.03	70.2	65.6	74.4	3.2%	<0.01
Urban	47.3	42.9	51.7	4.8%		5.2	3.5	7.8	20.8%		17.3	14.2	20.9	9.9%		60.8	56.3	65.1	3.7%	

	Played Bingo for money or prizes					Bet or spent money on electronic gambling machines					Played table games at casinos					Bet on cards or board games with family or friends				
	%	95% CI	CV	p		%	95% CI	CV	p		%	95% CI	CV	p		%	95% CI	CV	p	
County																				
Prince	8.9	6.1	12.8	19.1%	0.03	8.8	6.0	12.6	19.1%	0.22	4.1	2.1	7.7	33.3%	0.03	12.4	8.8	17.4	17.5%	0.50
Queens	6.1	4.3	8.6	17.5%		12.2	9.7	15.4	11.7%		6.7	4.9	9.2	16.0%		13.8	11.1	17.1	11.0%	
Kings	12.2	8.5	17.2	18.1%		9.5	5.9	15.0	23.7%		1.6	0.8	3.1	33.6%		10.3	6.9	15.1	20.1%	
Age																				
18-34	10.1	6.5	15.3	21.7%	0.15	17.7	13.0	23.7	15.2%	<0.01	11.9	8.1	17.1	19.1%	<0.01	19.9	14.9	26.2	14.5%	<0.01
35-54	8.1	5.5	11.6	18.9%		11.5	8.3	15.9	16.7%		4.3	2.4	7.7	30.1%		15.1	11.2	19.9	14.8%	
55+	5.9	4.2	8.3	17.2%		7.0	5.1	9.6	15.9%		2.7	1.6	4.6	27.7%		7.9	5.9	10.7	15.3%	
Gender																				
Women	10.4	8.1	13.3	12.5%	<0.01	8.5	6.4	11.2	14.4%	0.01	2.5	1.4	4.3	28.5%	<0.01	8.9	6.7	11.7	14.2%	<0.01
Men	4.9	3.1	7.4	22.0%		13.4	10.5	16.9	12.2%		8.5	6.1	11.5	16.1%		17.6	14.2	21.7	10.8%	
Education																				
High school diploma or less	9.0	6.1	13.2	19.8%	0.57	10.8	7.5	15.4	18.5%	0.86	4.0	2.2	7.2	30.3%	0.55	14.7	10.6	20.1	16.4%	0.11
Some postsecondary, completion of college or technical program	6.7	4.7	9.7	18.6%		11.6	8.7	15.2	14.3%		6.0	4.0	9.1	21.3%		10.2	7.5	13.8	15.6%	
Bachelor's and/or advanced degree	7.6	5.2	10.9	19.0%		10.3	7.5	14.1	16.2%		5.4	3.4	8.6	23.6%		15.1	11.5	19.6	13.5%	
Marital Status																				
Never married	10.7	7.1	15.9	20.6%	0.08	17.0	12.4	22.9	15.5%	<0.01	10.3	6.8	15.3	20.9%	<0.01	19.5	14.4	25.7	14.8%	<0.01
Married, Common-law	6.6	4.9	8.9	14.9%		8.7	6.7	11.3	13.4%		4.4	3.0	6.6	20.1%		11.9	9.4	14.8	11.6%	
Divorced, Widowed, Separated	5.9	3.5	9.9	26.9%		10.2	6.5	15.7	22.4%		1.7	0.6	4.6	52.8%		8.4	5.1	13.8	25.7%	
Household Income																				
Less than \$40K	6.3	4.0	9.7	22.7%	0.27	10.2	6.9	14.9	19.6%	0.88	4.2	2.2	7.7	31.6%	0.23	12.1	8.5	16.8	17.3%	0.07
\$40K to less than \$80K	9.6	6.6	13.7	18.6%		11.1	7.9	15.4	16.9%		5.5	3.2	9.0	26.2%		10.0	6.9	14.1	18.2%	
\$80K or more	6.8	4.4	10.2	21.1%		11.6	8.4	15.7	15.8%		7.7	5.1	11.4	20.3%		16.4	12.4	21.3	13.8%	
Urban/Rural																				
Rural	10.9	8.3	14.3	14.0%	0.00	8.3	6.0	11.4	16.5%	0.02	5.1	3.2	7.9	22.6%	0.71	11.9	9.0	15.6	14.0%	0.44
Urban	5.5	3.8	7.9	18.3%		13.4	10.6	16.7	11.5%		5.7	3.9	8.2	19.0%		13.7	10.9	17.2	11.7%	

	Bet on card games in non-regulated settings					Bet on playing video games					Bet on games of skill				Bet on live horse races					
	%	95% CI	CV	p		%	95% CI	CV	p		%	95% CI	CV	p	%	95% CI	CV	p		
County																				
Prince	3.7	1.8	7.2	35.2%	0.33	x	x	x	x	x	5.5	3.2	9.3	27.5%	0.39	9.5	6.4	13.9	19.9%	<0.01
Queens	2.2	1.2	4.0	29.9%		x	x	x	x		6.0	4.3	8.4	17.0%		17.9	14.8	21.5	9.5%	
Kings	1.9	0.9	4.1	38.6%		x	x	x	x		3.3	1.8	5.7	29.2%		13.4	9.6	18.3	16.5%	
Age																				
18-34	x	x	x	x	x	x	x	x	x	x	13.2	9.0	18.8	18.7%	<0.01	16.3	11.8	22.0	16.0%	0.36
35-54	x	x	x	x		x	x	x	x		3.2	1.7	6.2	33.4%		16.4	12.4	21.3	13.8%	
55+	x	x	x	x		x	x	x	x		3.4	2.2	5.3	23.1%		12.9	10.1	16.3	12.2%	
Gender																				
Women	1.0	0.5	2.2	40.5%	<0.01	x	x	x	x	x	1.6	0.8	3.3	36.1%	<0.01	13.1	10.4	16.3	11.5%	0.10
Men	4.4	2.7	7.1	24.2%		x	x	x	x		9.9	7.4	13.1	14.6%		16.9	13.6	20.8	10.9%	
Education																				
High school diploma or less	3.2	1.6	6.3	35.3%	0.86	3.1	1.4	7.0	42.0%	0.24	6.1	3.6	10.2	26.3%	0.61	12.4	8.7	17.3	17.6%	0.26
Some postsecondary, completion of college or technical program	2.6	1.3	5.2	35.8%		1.2	0.5	2.9	45.5%		4.7	2.9	7.5	24.0%		14.2	11.0	18.1	12.8%	
Bachelor's and/or advanced degree	2.4	1.1	4.9	37.7%		1.5	0.6	3.8	49.3%		6.3	4.1	9.5	21.4%		17.3	13.5	21.8	12.2%	
Marital Status																				
Never married	2.7	1.1	6.5	45.4%	1.00	x	x	x	x	x	x	x	x	x	x	15.5	11.1	21.2	16.6%	0.43
Married, Common-law	2.6	1.5	4.5	27.6%		x	x	x	x		x	x	x	x		15.6	12.8	18.8	9.8%	
Divorced, Widowed, Separated	2.5	1.0	6.2	46.2%		x	x	x	x		x	x	x	x		11.5	7.4	17.4	22.0%	
Household Income																				
Less than \$40K	3.2	1.6	6.6	37.1%	0.26	x	x	x	x	x	3.5	1.7	7.1	37.0%	0.28	12.2	8.7	16.8	16.8%	0.18
\$40K to less than \$80K	1.4	0.5	3.4	46.7%		x	x	x	x		5.6	3.3	9.1	25.6%		14.4	10.6	19.3	15.3%	
\$80K or more	3.5	1.8	6.6	33.4%		x	x	x	x		6.7	4.4	10.1	21.1%		17.8	13.9	22.6	12.4%	
Urban/Rural																				
Rural	2.4	1.3	4.6	32.6%	0.86	x	x	x	x	x	4.1	2.5	6.7	24.9%	0.26	14.8	11.7	18.6	11.9%	0.86
Urban	2.6	1.5	4.7	29.5%		x	x	x	x		5.8	4.0	8.2	18.0%		14.4	11.5	17.9	11.3%	

County	Played a sports lottery					Bet or spent money on sports pools					Bet on outcomes of sporting events				Invested in high-risk stocks, options, or commodities					
	%	95% CI	CV	p		%	95% CI	CV	p		%	95% CI	CV	p	%	95% CI	CV	p		
County																				
Prince	2.8	1.3	6.1	40.4%	0.31	x	x	x	x	x	4.6	2.5	8.4	30.8%	0.53	4.8	2.5	8.9	32.2%	0.72
Queens	4.3	2.9	6.5	20.6%		x	x	x	x		4.6	3.1	6.7	19.7%		4.1	2.7	6.1	20.6%	
Kings	1.8	0.5	5.9	61.0%		x	x	x	x		2.7	1.5	4.9	30.5%		3.1	1.3	7.1	42.6%	
Age																				
18-34	5.2	2.9	9.0	28.5%	<0.01	x	x	x	x	x	7.0	4.3	11.3	24.8%	0.02	7.7	4.8	12.2	24.0%	<0.01
35-54	5.3	3.0	8.9	27.5%		x	x	x	x		5.3	3.0	9.0	27.9%		4.9	2.7	8.7	29.6%	
55+	1.3	0.6	2.7	39.0%		x	x	x	x		2.4	1.5	4.1	26.5%		1.9	1.0	3.7	33.0%	
Gender																				
Women	1.0	0.4	2.4	46.2%	<0.01	x	x	x	x	x	0.7	0.3	1.8	50.4%	0.00	1.2	0.5	2.8	41.7%	<0.01
Men	6.4	4.4	9.3	18.9%		x	x	x	x		8.2	5.9	11.3	16.4%		7.5	5.3	10.6	17.8%	
Education																				
High school diploma or less	2.6	1.2	5.6	40.1%	0.54	x	x	x	x	x	4.3	2.5	7.5	28.4%	0.42	x	x	x	x	x
Some postsecondary, completion of college or technical program	3.5	2.0	6.1	29.0%		x	x	x	x		3.5	2.0	6.1	27.9%		x	x	x	x	
Bachelor's and/or advanced degree	4.4	2.6	7.4	26.7%		x	x	x	x		5.5	3.4	8.9	24.6%		x	x	x	x	
Marital Status																				
Never married	x	x	x	x	x	x	x	x	x	x	6.0	3.4	10.5	28.9%	0.16	x	x	x	x	x
Married, Common-law	x	x	x	x		x	x	x	x		4.4	3.0	6.5	19.9%		x	x	x	x	
Divorced, Widowed, Separated	x	x	x	x		x	x	x	x		2.0	0.8	5.0	48.0%		x	x	x	x	
Household Income																				
Less than \$40K	1.6	0.6	4.1	48.3%	0.10	1.6	0.6	4.1	48.3%	0.10	3.2	1.7	6.1	32.3%	0.10	1.5	0.5	4.4	55.1%	0.01
\$40K to less than \$80K	3.9	2.1	6.8	29.6%		3.9	2.1	6.8	29.6%		4.0	2.2	7.1	29.8%		3.4	1.7	6.7	34.6%	
\$80K or more	5.0	2.9	8.3	26.9%		5.0	2.9	8.3	26.9%		6.9	4.4	10.7	22.8%		7.4	4.9	11.2	21.3%	
Urban/Rural																				
Rural	2.3	1.2	4.6	35.1%	0.14	2.3	1.2	4.6	35.1%	0.14	3.7	2.2	6.0	25.2%	0.27	5.0	3.1	7.9	24.2%	0.30
Urban	4.2	2.7	6.4	21.8%		4.2	2.7	6.4	21.8%		5.2	3.5	7.8	20.3%		3.4	2.1	5.6	25.6%	

Appendix G1 – Past-year online gambling participation (including non-gamblers and non-responders), by demographics, PEI, 2019

	Non-Gamblers			In-Person Gambling Only			Online Gambling			No Response			P-value				
	%	95% CI	CV	%	95% CI	CV	%	95% CI	CV	%	95% CI	CV					
County																	
Prince	16.8	12.7	21.8	13.7%	73.2	67.6	78.2	3.7%	5.2	3.1	8.6	26.4%	4.8	2.8	8.1	27.3%	0.11
Queens	17.9	14.7	21.5	9.7%	66.8	62.5	70.8	3.2%	9.7	7.4	12.6	13.5%	5.6	3.9	8.0	18.1%	
Kings	16.2	12.1	21.4	14.5%	73.3	67.4	78.6	3.9%	4.5	2.2	8.7	34.9%	6.0	3.8	9.3	22.7%	
Age																	
18-34	20.5	15.1	27.3	15.2%	64.5	57.3	71.2	5.5%	11.3	7.6	16.5	19.9%	3.7	1.8	7.4	36.0%	0.01
35-54	13.8	10.2	18.3	14.9%	70.4	64.8	75.5	3.9%	9.3	6.4	13.4	18.8%	6.4	4.0	10.1	23.5%	
55+	16.9	13.8	20.4	9.9%	72.8	68.7	76.6	2.7%	4.5	3.0	6.9	21.4%	5.8	4.0	8.2	18.1%	
Gender																	
Women	18.9	15.7	22.6	9.3%	69.9	65.8	73.7	2.9%	6.2	4.4	8.8	17.8%	5.0	3.5	7.1	18.0%	0.13
Men	14.7	11.6	18.5	11.8%	70.1	65.5	74.3	3.2%	9.4	7.0	12.6	15.0%	5.8	3.9	8.5	20.2%	
Education																	
High school diploma or less	19.3	14.6	25.1	13.8%	68.1	61.7	73.8	4.5%	3.5	1.9	6.7	32.7%	9.1	6.0	13.6	21.0%	0.01
Some postsecondary, college or technical program	15.5	12.2	19.6	12.1%	69.3	64.4	73.8	3.5%	9.8	7.2	13.4	16.0%	5.4	3.5	8.1	21.4%	
Bachelor's and/or advanced degree	17.7	13.9	22.3	12.1%	71.0	65.8	75.7	3.6%	8.1	5.5	11.6	18.9%	3.2	1.8	5.7	29.2%	
Marital Status																	
Never married	21.2	15.9	27.7	14.2%	62.8	55.7	69.4	5.6%	10.2	6.6	15.2	21.2%	5.8	3.3	9.9	27.9%	0.25
Married, Common-law	15.7	12.9	18.9	9.8%	71.5	67.7	75.1	2.7%	7.1	5.2	9.5	15.5%	5.8	4.1	8.0	16.9%	
Divorced, Widowed, Separated	17.5	12.6	23.8	16.2%	72.0	64.9	78.2	4.7%	6.7	3.8	11.7	29.1%	3.8	1.8	7.6	36.4%	
Household Income																	
Less than \$40K	21.8	17.1	27.4	12.1%	66.8	60.7	72.4	4.5%	5.0	2.9	8.5	27.5%	6.4	4.0	10.0	23.2%	0.01
\$40K to less than \$80K	13.3	9.7	18.1	15.9%	74.6	68.9	79.5	3.6%	6.9	4.4	10.9	23.3%	5.2	3.0	8.6	26.8%	
\$80K or more	12.6	9.3	16.9	15.3%	71.0	65.5	75.9	3.7%	10.8	7.7	14.9	16.7%	5.6	3.5	9.0	24.0%	
Urban/Rural																	
Rural	14.5	11.5	18.2	11.8%	72.1	67.6	76.3	3.1%	8.4	6.0	11.7	17.3%	4.9	3.3	7.4	20.6%	0.29
Urban	19.1	15.8	23.0	9.6%	68.0	63.6	72.1	3.2%	7.3	5.3	10.0	16.2%	5.6	3.8	8.1	19.2%	

Appendix G2 - Past-year online gambling participation (excluding non-gamblers and non-responders), by demographics, PEI, 2019

	In-Person Gambling Only				Online Gambling				P-value
	%	95% CI		CV	%	95% CI		CV	
County									
Prince	93.0	89.0	96.0	1.9%	7.0	4.0	11.0	26.2%	0.01
Queens	87.0	84.0	90.0	1.9%	13.0	10.0	16.0	13.3%	
Kings	94.0	89.0	97.0	2.1%	6.0	3.0	11.0	34.7%	
Age									
18-34	85.0	79.0	90.0	3.4%	15.0	10.0	21.0	19.5%	<0.01
35-54	88.0	83.0	92.0	2.5%	12.0	8.0	17.0	18.6%	
55+	94.0	91.0	96.0	1.3%	6.0	4.0	9.0	21.3%	
Gender									
Women	92.0	89.0	94.0	1.6%	8.0	6.0	11.0	17.6%	0.10
Men	88.0	84.0	91.0	2.0%	12.0	9.0	16.0	14.8%	
Education									
High school diploma or less	95.0	91.0	97.0	1.7%	5.0	3.0	9.0	32.5%	0.04
Some postsecondary, college or technical program	88.0	83.0	91.0	2.2%	12.0	9.0	17.0	15.7%	
Bachelor's and/or advanced degree	90.0	85.0	93.0	2.1%	10.0	7.0	15.0	18.7%	
Marital Status									
Never married	86.0	79.0	91.0	3.4%	14.0	9.0	21.0	20.8%	0.18
Married, Common-law	91.0	88.0	93.0	1.5%	9.0	7.0	12.0	15.3%	
Divorced, Widowed, Separated	91.0	85.0	95.0	2.7%	9.0	5.0	15.0	28.8%	
Household Income									
Less than \$40K	93.0	88.0	96.0	2.0%	7.0	4.0	12.0	27.3%	0.08
\$40K to less than \$80K	91.0	87.0	95.0	2.1%	9.0	5.0	13.0	23.1%	
\$80K or more	87.0	82.0	91.0	2.5%	13.0	9.0	18.0	16.4%	
Urban/Rural									
Rural	90.0	86.0	93.0	2.0%	10.0	7.0	14.0	17.1%	0.76
Urban	90.0	87.0	93.0	1.7%	10.0	7.0	13.0	16.0%	

Appendix H – Past-year online gambling participation (any online gambling and online participation in specific gambling activities), PEI, 2019

	Non-participants				In-Person Gambling Only			Online Gambling				No Response				
	%	95%CI	CV		%	95%CI	CV	%	95%CI	CV	%	95%CI	CV			
Any gambling activity	17.3	15.0	19.9	7.2%	69.6	66.5	72.4	2.2%	7.7	6.1	9.6	11.5%	5.4	4.2	7.1	13.4%
Purchased lottery tickets	42.5	39.1	46.0	4.1%	51.7	48.3	55.2	3.4%	4.6	3.3	6.3	16.5%	1.1	0.6	2.1	30.8%
Purchased daily lottery tickets	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Purchased or played online instant-win tickets	76.3	73.2	79.1	2.0%	20.5	17.9	23.5	7.0%	1.2	0.7	2.2	30.9%	2.0	1.2	3.2	24.7%
Played Bingo for money or prizes	90.7	88.6	92.5	1.1%	7.4	5.8	9.5	12.5%	0.5	0.2	1.3	43.0%	1.3	0.7	2.3	28.6%
Bet or spent money on electronic gambling machines	86.9	84.4	89.1	1.4%	11.2	9.2	13.6	9.8%	1.0	0.4	2.2	41.8%	0.9	0.4	1.9	39.2%
Played table games at casinos	93.6	91.6	95.2	1.0%	4.9	3.6	6.7	16.0%	0.7	0.3	1.7	46.6%	0.8	0.4	1.7	40.7%
Bet on live horse races	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Played a sports lottery	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Bet or spent money on sports pools	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Appendix I – Past-year PGSI gambling risk, by demographics

	Non-Gamblers			Non-Problem Gamblers				Low-Risk Gamblers			Moderate-to-Severe Risk Gamblers				p	At-risk Gamblers						
				PGSI = 0				PGSI = 1-2			PGSI = 3+					PGSI = 1+						
	%	95% CI	CV	%	95% CI	CV	%	95% CI	CV	%	95% CI	CV	%	95% CI		CV	%	95% CI	CV	p		
County																						
Prince	16.7	12.7	21.7	13.7%	73.0	67.2	78.1	3.8%	6.2	3.7	10.2	25.6%	4.1	2.2	7.5	31.4%	0.48	10.3	7.0	14.9	19.2%	0.31
Queens	17.7	14.5	21.3	9.7%	73.8	69.7	77.4	2.7%	5.7	4.0	8.1	17.9%	2.8	1.7	4.7	25.7%		8.6	6.4	11.3	14.4%	
Kings	16.1	12.0	21.2	14.6%	79.6	73.9	84.3	3.3%	3.3	1.4	7.5	43.5%	1.1	0.4	3.2	55.9%		4.3	2.1	8.5	35.3%	
Age																						
18-34	20.4	15.0	27.2	15.2%	64.1	56.8	70.8	5.6%	10.6	6.9	16.0	21.4%	4.9	2.6	9.0	31.9%	<0.01	15.5	11.0	21.5	17.1%	<0.01
35-54	13.6	10.1	18.1	15.0%	78.2	72.8	82.7	3.2%	5.1	3.0	8.6	27.0%	3.1	1.5	6.3	36.2%		8.3	5.4	12.4	21.1%	
55+	16.8	13.8	20.3	9.9%	78.4	74.6	81.7	2.3%	3.1	1.9	5.1	25.0%	1.7	0.9	3.2	31.3%		4.8	3.3	7.1	19.4%	
Gender																						
Women	18.7	15.5	22.4	9.3%	75.5	71.5	79.0	2.6%	4.1	2.7	6.3	21.9%	1.7	0.8	3.4	35.2%	0.01	5.8	4.0	8.3	18.4%	<0.01
Men	14.6	11.5	18.3	11.8%	73.6	69.1	77.7	3.0%	7.3	5.1	10.3	18.1%	4.5	2.9	7.0	22.9%		11.8	9.0	15.3	13.7%	
Education																						
High school diploma or less	19.3	14.6	25.0	13.8%	66.7	60.2	72.6	4.7%	9.2	5.9	14.0	22.4%	4.9	2.8	8.4	27.6%	0.04	14.1	10.0	19.4	16.8%	0.01
Some postsecondary, college or technical program	15.2	12.0	19.3	12.2%	77.5	72.9	81.4	2.8%	4.4	2.8	7.0	23.6%	2.9	1.5	5.4	32.7%		7.3	5.0	10.5	18.8%	
Bachelor's and/or advanced degree	17.6	13.8	22.2	12.1%	76.0	71.0	80.5	3.2%	4.3	2.5	7.4	28.2%	2.0	0.9	4.6	42.6%		6.3	4.0	9.9	23.1%	
Marital Status																						
Never married	21.1	15.8	27.6	14.2%	59.1	51.9	65.9	6.1%	12.9	8.8	18.5	18.9%	6.9	4.1	11.6	26.9%	<0.01	19.8	14.7	26.1	14.7%	<0.01
Married, Common-law	15.5	12.7	18.7	9.8%	79.6	76.1	82.7	2.1%	3.6	2.3	5.7	22.6%	1.3	0.6	2.6	36.0%		4.9	3.4	7.1	19.0%	
Divorced, Widowed, Separated	17.4	12.5	23.7	16.2%	75.8	68.8	81.6	4.3%	2.7	1.1	6.4	44.0%	4.1	1.8	8.9	40.5%		6.8	3.8	12.0	29.5%	
Household Income																						
Less than \$40K	21.8	17.0	27.4	12.1%	67.5	61.3	73.1	4.5%	7.0	4.3	11.2	24.6%	3.8	2.0	7.2	33.3%	0.01	10.8	7.3	15.5	19.2%	0.01
\$40K to less than \$80K	13.3	9.7	18.1	15.9%	79.7	74.4	84.2	3.1%	3.9	2.0	7.1	31.9%	3.1	1.6	6.1	34.7%		7.0	4.4	10.9	23.0%	
\$80K or more	12.4	9.1	16.7	15.3%	80.3	75.3	84.4	2.9%	5.6	3.5	9.0	24.5%	1.7	0.7	3.9	44.2%		7.3	4.8	11.0	21.2%	
Urban/Rural																						
Rural	14.4	11.4	18.0	11.8%	78.2	73.9	82.0	2.6%	4.8	3.0	7.6	24.1%	2.6	1.4	4.7	30.6%	0.25	7.4	5.1	10.6	18.6%	0.13
Urban	18.9	15.6	22.7	9.6%	72.3	68.0	76.1	2.9%	6.0	4.2	8.6	18.1%	2.8	1.6	4.8	27.9%		8.8	6.6	11.8	14.9%	

Appendix J - Past-year participation in specific gambling activities, by PGSI gambling risk

	Non-Problem Gamblers			Low-Risk Gamblers			Moderate-to-Severe Risk Gamblers				At-risk Gamblers							
	PGSI = 0			PGSI = 1-2			PGSI = 3+				PGSI = 1+							
	%	95% CI	CV	%	95% CI	CV	%	95% CI	CV	P-value	%	95% CI	CV	P-value				
Purchased lottery tickets	57.5	53.8	61.1	3.2%	59.1	44.7	72.1	12.1%	69.3	49.2	84.1	13.3%	<0.01	62.7	51.1	73.0	9.1%	<0.01
Purchased daily lottery tickets	4.5	3.2	6.3	17.7%	14.9	7.2	28.4	35.6%	25.9	12.3	46.6	34.6%	<0.01	18.8	11.2	29.8	25.2%	<0.01
Purchased or played online instant-win tickets	21.5	18.6	24.6	7.1%	41.9	28.7	56.4	17.3%	56.0	37.0	73.5	17.4%	<0.01	46.9	35.8	58.4	12.5%	<0.01
Purchased raffle or fundraising tickets	78.4	75.2	81.3	2.0%	78.5	64.3	88.1	7.7%	62.1	42.4	78.5	15.5%	<0.01	72.6	61.1	81.7	7.3%	<0.01
Played Bingo for money or prizes	8.9	7.0	11.2	11.9%	14.5	7.1	27.6	35.1%	12.4	4.8	28.7	46.4%	<0.01	13.8	7.8	23.3	28.2%	<0.01
Bet or spent money on electronic gambling machines	9.1	7.2	11.5	11.8%	43.4	30.3	57.5	16.4%	58.7	39.2	75.7	16.6%	<0.01	48.8	37.6	60.0	11.9%	<0.01
Played table games at casinos	4.3	3.0	6.2	18.5%	21.2	11.9	34.7	27.4%	31.2	16.7	50.7	28.6%	<0.01	24.7	16.3	35.5	20.0%	<0.01
Bet on cards or board games with family or friends	13.2	10.8	16.0	10.0%	40.3	27.2	54.9	18.0%	36.2	20.7	55.1	25.1%	<0.01	38.8	28.4	50.4	14.7%	<0.01
Bet on card games in non-regulated settings	2.8	1.7	4.5	24.3%	3.2	0.7	13.9	77.8%	12.7	4.7	29.9	48.1%	<0.01	6.6	2.9	14.4	41.6%	<0.01
Bet on playing video games	0.7	0.3	1.9	48.1%	14.3	6.6	28.2	37.4%	13.5	5.1	31.3	47.2%	<0.01	14.0	7.7	24.2	29.4%	<0.01
Bet on games of skill	4.8	3.4	6.6	17.1%	25.9	15.4	40.2	24.7%	21.0	9.6	40.0	37.0%	<0.01	24.2	15.8	35.2	20.6%	<0.01
Bet on live horse races	16.6	14.0	19.6	8.5%	30.2	19.0	44.5	21.9%	33.9	18.0	54.4	28.6%	<0.01	31.5	21.8	43.1	17.4%	<0.01
Played a sports lottery	2.6	1.6	4.1	24.1%	14.0	6.6	27.2	36.5%	25.7	12.5	45.8	33.7%	<0.01	18.1	10.8	28.7	25.1%	<0.01
Bet or spent money on sports pools	7.2	5.5	9.5	13.8%	24.3	13.9	39.0	26.5%	13.3	5.0	31.0	47.2%	<0.01	20.4	12.6	31.4	23.4%	<0.01
Bet on outcomes of sporting events	3.7	2.5	5.4	19.9%	20.7	11.6	34.4	28.0%	18.6	7.7	38.8	42.1%	<0.01	20.0	12.4	30.7	23.4%	<0.01
Bet on sports with a bookie	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Invested in high-risk stocks, options, or commodities markets	4.2	2.9	6.0	19.0%	13.8	6.3	27.7	38.3%	12.4	3.9	33.3	56.3%	<0.01	13.3	7.0	24.0	31.6%	<0.01
Bet or spent money on other forms of gambling	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Appendix K – Past-year substance use, mental health, and psychological factors, by PGSI gambling risk, PEI, 2019

	Non-Gamblers			Non-Problem Gamblers			Low-Risk Gamblers			Moderate-to-Severe Risk Gamblers			At-Risk Gamblers									
	PGSI = 0			PGSI = 1-2			PGSI = 3+			PGSI = 1+												
	%	95% CI	CV	%	95% CI	CV	%	95% CI	CV	%	95% CI	CV	p	%	95% CI	CV	p					
Past-year drinking																						
Past-year abstainer	51.4	43.6	59.1	7.8%	16.8	14.3	19.6	8.1%	17.5	9.7	29.6	28.8%	32.7	17.4	52.8	28.6%	<0.01	22.8	14.8	33.5	20.8%	<0.01
Past-year drinker	48.6	40.9	56.4	8.2%	83.2	80.4	85.7	1.6%	82.5	70.4	90.3	6.1%	67.3	47.2	82.6	13.9%		77.2	66.5	85.2	6.2%	
Frequency of binge drinking																						
Non-drinker	51.4	43.6	59.1	7.8%	16.8	14.3	19.6	8.0%	17.9	9.9	30.3	28.7%	32.7	17.4	52.8	28.6%	<0.01	23.2	15.1	34.0	20.8%	<0.01
Less than monthly	44.1	36.6	52.0	9.0%	70.7	67.2	73.9	2.4%	46.6	32.9	60.7	15.6%	27.9	14.4	47.1	30.5%		39.9	29.4	51.4	14.2%	
Monthly or more often	4.5	2.2	8.9	35.7%	12.6	10.2	15.3	10.3%	35.5	22.9	50.5	20.3%	39.4	22.8	58.8	24.3%		36.9	26.5	48.7	15.6%	
Hazardous drinking																						
Past-year abstainer	50.7	42.8	58.6	8.0%	17.0	14.5	19.9	8.0%	17.9	9.9	30.3	28.7%	32.7	17.4	52.8	28.6%	<0.01	23.2	15.1	34.0	20.8%	<0.01
Non-hazardous drinker	26.7	20.2	34.4	13.5%	39.8	36.2	43.5	4.6%	26.4	15.8	40.6	24.2%	13.0	5.2	29.0	44.7%		21.6	13.8	32.2	21.7%	
Hazardous drinker	22.6	16.6	29.9	15.0%	43.2	39.5	46.9	4.4%	55.7	41.5	69.0	12.9%	54.3	35.5	72.0	17.9%		55.2	43.8	66.1	10.5%	
Frequency of drinking alcohol while gambling																						
Non-drinker	n/a	n/a	n/a	n/a	16.9	14.4	19.8	8.0%	17.5	9.7	29.6	28.8%	32.7	17.4	52.8	28.6%	<0.01	22.8	14.8	33.5	20.9%	<0.01
Never	n/a	n/a	n/a	n/a	68.2	64.7	71.6	2.6%	26.6	15.9	40.9	24.3%	17.7	7.0	38.3	44.4%		23.5	15.0	34.7	21.5%	
Sometimes/rarely	n/a	n/a	n/a	n/a	10.1	8.0	12.6	11.6%	44.1	30.8	58.4	16.4%	27.4	14.0	46.6	31.1%		38.3	27.9	49.8	14.8%	
Often/always	n/a	n/a	n/a	n/a	4.8	3.4	6.7	17.0%	11.8	5.2	24.5	39.9%	22.2	10.6	40.8	35.0%		15.4	9.0	25.3	26.6%	
Impact of alcohol use on life																						
Non-drinker	50.8	43.1	58.6	7.8%	16.8	14.3	19.6	8.0%	17.5	9.7	29.6	28.8%	32.7	17.4	52.8	28.6%	<0.01	22.8	14.8	33.5	20.8%	<0.01
Not a problem	45.4	37.8	53.2	8.7%	76.6	73.4	79.5	2.0%	63.3	48.8	75.7	11.1%	36.1	20.5	55.4	25.6%		53.8	42.4	64.8	10.8%	
Minor to serious problem	3.8	1.6	8.6	42.6%	6.6	4.9	8.8	14.7%	19.2	9.8	34.3	32.3%	31.2	16.5	51.0	29.2%		23.4	14.8	34.9	22.0%	
Past-year cannabis use																						
Past-year non-user	82.9	75.8	88.2	3.8%	74.3	70.9	77.5	2.3%	47.8	34.1	61.7	15.1%	73.8	54.9	86.7	11.2%	<0.01	56.9	45.4	67.7	10.1%	<0.01
Past-year user	17.1	11.8	24.2	18.4%	25.7	22.5	29.1	6.5%	52.3	38.3	65.9	13.8%	26.2	13.3	45.1	31.7%		43.1	32.3	54.6	13.4%	
Frequency of cannabis use																						
Never	82.9	75.8	88.2	3.8%	74.3	70.9	77.5	2.3%	x	x	x	x	x	x	x	x	x	56.9	45.4	67.7	10.1%	<0.01
Three times per month or less	7.2	4.1	12.4	28.6%	15.0	12.4	17.9	9.3%	x	x	x	x	x	x	x	x		12.5	7.0	21.2	28.3%	
Once per week or more frequently	10.0	5.8	16.4	26.4%	10.7	8.6	13.3	10.9%	x	x	x	x	x	x	x	x		30.6	21.0	42.3	17.9%	

	Non-Gamblers			Non-Problem Gamblers			Low-Risk Gamblers			Moderate-to-Severe Risk Gamblers			At-Risk Gamblers									
	%	95% CI		CV	PGSI = 0			PGSI = 1-2			PGSI = 3+			p	PGSI = 1+							
					%	95% CI	CV	%	95% CI	CV	%	95% CI	CV		%	95% CI	CV	p				
Life satisfaction score																						
0 to 6	13.3	8.8	19.7	20.7%	11.3	9.1	13.8	10.6%	23.5	13.4	37.9	26.7%	24.9	11.4	46.2	36.4%	<0.01	24.0	15.3	35.5	21.5%	0.01
7 or 8	38.9	31.5	46.9	10.1%	41.1	37.5	44.8	4.5%	43.5	30.3	57.6	16.4%	44.0	26.2	63.4	22.6%		43.6	32.8	55.2	13.3%	
9 or 10	47.8	40.0	55.6	8.4%	47.6	44.0	51.3	3.9%	33.0	21.2	47.4	20.6%	31.1	16.9	50.1	28.0%		32.4	22.8	43.7	16.7%	
Sense of belonging to community																						
Somewhat or very strong	74.2	66.5	80.7	4.9%	81.7	78.6	84.4	1.8%	65.5	50.8	77.8	10.7%	66.7	46.7	82.1	14.1%	<0.01	65.9	54.2	76.0	8.5%	<0.01
Somewhat or very weak	25.8	19.3	33.5	14.0%	18.4	15.6	21.4	8.1%	34.5	22.3	49.2	20.4%	33.3	17.9	53.3	28.1%		34.1	24.0	45.8	16.5%	
Amount of stress in life																						
Not or not very stressful	46.9	39.2	54.8	8.5%	41.4	37.8	45.0	4.4%	34.4	22.7	48.4	19.4%	37.0	21.0	56.4	25.4%	0.89	35.3	25.5	46.6	15.5%	0.90
A bit or extremely stressful	53.1	45.2	60.8	7.5%	58.6	55.0	62.2	3.1%	65.6	51.6	77.3	10.2%	63.0	43.6	79.0	14.9%		64.7	53.4	74.5	8.4%	
Self-rated mental health																						
Very good/Excellent	61.8	53.9	69.2	6.3%	65.5	61.9	68.9	2.7%	54.0	39.9	67.5	13.4%	50.2	31.9	68.5	19.5%	0.16	52.7	41.3	63.8	11.0%	0.08
Poor/Fair/Good	38.2	30.8	46.1	10.3%	34.5	31.1	38.1	5.2%	46.0	32.5	60.1	15.7%	49.8	31.5	68.1	19.7%		47.3	36.3	58.7	12.3%	
Impact of increased worry on life																						
Not a problem	38.4	31.2	46.2	10.0%	35.8	32.3	39.4	5.0%	27.0	16.4	41.0	23.5%	27.7	14.4	46.4	30.1%	0.39	27.2	18.5	38.1	18.6%	0.22
Minor to serious problem	61.6	53.8	68.8	6.3%	64.3	60.6	67.7	2.8%	73.0	59.0	83.6	8.7%	72.4	53.6	85.6	11.5%		72.8	61.9	81.5	6.9%	
Impact of decreased hope on life																						
Not a problem	66.2	58.2	73.3	5.8%	73.9	70.5	77.0	2.2%	68.7	54.0	80.4	10.0%	65.8	46.0	81.3	14.2%	0.22	67.6	56.0	77.4	8.2%	0.11
Minor to serious problem	33.9	26.8	41.8	11.4%	26.1	23.0	29.5	6.3%	31.4	19.7	46.0	21.9%	34.2	18.7	54.0	27.3%		32.4	22.6	44.0	17.1%	
Impact of decreased self-control on life																						
Not a problem	82.4	75.4	87.8	3.8%	84.3	81.4	86.8	1.6%	60.0	45.4	73.0	12.0%	38.3	22.3	57.3	24.3%	<0.01	52.3	41.0	63.5	11.1%	<0.01
Minor to serious problem	17.6	12.3	24.6	17.8%	15.7	13.2	18.6	8.9%	40.1	27.0	54.6	18.0%	61.8	42.7	77.7	15.0%		47.7	36.5	59.0	12.2%	

Appendix L - Past-year substance use, mental health, and psychological factors, by online gambling status (including non-gamblers and non-responders), PEI, 2019

	Past-Year Non-Gamblers				Past-Year In-Person Only Gamblers			Past-Year Online Gamblers				No Response					
	%	95% CI	CV		%	95% CI	CV	%	95% CI	CV	p	%	95% CI	CV			
Past-year drinking																	
Past-year abstainer	51.4	43.6	59.1	7.8%	17.1	14.5	20.1	8.3%	13.4	7.2	23.6	30.5%	0.43	28.0	18.0	40.8	21.0%
Past-year drinker	48.6	40.9	56.4	8.2%	82.9	79.9	85.5	1.7%	86.6	76.4	92.8	4.7%		72.0	59.2	82.0	8.2%
Frequency of binge drinking																	
Non-drinker	51.4	43.6	59.1	7.8%	17.1	14.5	20.1	8.4%	13.4	7.2	23.6	30.5%	0.28	28.0	18.0	40.8	21.0%
Less than monthly	44.1	36.6	52.0	9.0%	68.7	65.0	72.2	2.7%	65.4	53.4	75.7	8.8%		55.8	42.4	68.4	12.2%
Monthly or more often	4.5	2.2	8.9	35.8%	14.2	11.6	17.3	10.1%	21.2	13.0	32.6	23.7%		16.2	8.6	28.4	30.6%
Hazardous drinking																	
Past-year abstainer	50.7	42.8	58.6	8.0%	17.3	14.6	20.3	8.3%	13.6	7.3	23.8	30.5%	0.40	29.2	18.8	42.4	20.9%
Non-hazardous drinker	26.7	20.2	34.4	13.5%	39.3	35.6	43.1	4.9%	34.7	24.5	46.4	16.3%		25.3	15.0	39.4	24.9%
Hazardous drinker	22.6	16.6	29.9	15.0%	43.5	39.7	47.4	4.5%	51.8	40.1	63.3	11.6%		45.6	32.4	59.4	15.5%
Frequency of drinking alcohol while gambling																	
Non-drinker	n/a	n/a	n/a	n/a	17.2	14.5	20.2	8.3%	13.4	7.2	23.6	30.5%	<0.01	28.5	18.3	41.5	21.0%
Never	n/a	n/a	n/a	n/a	67.2	63.4	70.7	2.7%	41.3	30.4	53.0	14.2%		48.8	35.5	62.3	14.3%
Sometimes/rarely/often/always	n/a	n/a	n/a	n/a	15.7	13.0	18.8	9.3%	45.3	34.0	57.1	13.2%		22.7	13.0	36.5	26.5%
Impact of alcohol use on life																	
Non-drinker	50.8	43.1	58.6	7.8%	17.1	14.5	20.1	8.3%	13.4	7.2	23.6	30.5%	0.06	28.2	18.1	41.1	21.0%
Not a problem	45.4	37.8	53.2	8.7%	75.5	72.0	78.6	2.2%	70.8	59.0	80.3	7.7%		61.9	48.4	73.8	10.7%
Minor to serious problem	3.8	1.6	8.6	42.6%	7.4	5.6	9.9	14.7%	15.7	8.8	26.5	28.2%		9.9	4.1	22.0	43.2%
Past-year cannabis use																	
Past-year non-user	82.9	75.8	88.2	3.8%	73.1	69.5	76.5	2.4%	66.8	54.8	77.0	8.6%	0.27	74.5	60.2	85.0	8.6%
Past-year user	17.1	11.8	24.2	18.4%	26.9	23.5	30.5	6.6%	33.2	23.0	45.2	17.2%		25.5	15.1	39.8	25.0%
Frequency of cannabis use																	
Never	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Three times per month or less	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x
Once per week or more frequently	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x

	Past-Year Non-Gamblers				Past-Year In-Person Only Gamblers			Past-Year Online Gamblers				No Response					
	%	95% CI	CV		%	95% CI	CV	%	95% CI	CV	p	%	95% CI	CV			
Life satisfaction score																	
0 to 6	13.3	8.8	19.7	20.7%	13.0	10.6	15.9	10.3%	13.3	7.0	23.7	31.3%	0.78	6.4	2.5	15.6	47.2%
7 or 8	38.9	31.5	46.9	10.1%	41.6	37.8	45.4	4.7%	37.3	26.7	49.2	15.6%		45.5	32.4	59.2	15.4%
9 or 10	47.7	40.0	55.6	8.4%	45.4	41.6	49.2	4.3%	49.5	37.9	61.1	12.2%		48.1	34.9	61.6	14.5%
Sense of belonging to community																	
Somewhat or very strong	25.8	19.3	33.5	14.0%	19.5	16.6	22.8	8.1%	22.1	13.7	33.7	23.2%	0.61	22.3	12.9	35.6	26.1%
Somewhat or very weak	74.2	66.5	80.7	4.9%	80.5	77.2	83.4	2.0%	77.9	66.3	86.3	6.6%		77.7	64.4	87.1	7.5%
Amount of stress in life																	
Not or not very stressful	53.1	45.2	60.8	7.5%	60.5	56.7	64.1	3.1%	57.8	46.0	68.8	10.2%	0.47	54.5	41.0	67.3	12.6%
A bit or extremely stressful	46.9	39.2	54.8	8.5%	39.5	35.9	43.3	4.8%	42.2	31.2	54.0	14.0%		45.5	32.7	59.0	15.1%
Self-rated mental health																	
Very good/Excellent	38.2	30.8	46.1	10.3%	36.2	32.5	39.9	5.2%	37.0	26.5	48.9	15.6%	0.89	34.4	22.8	48.2	19.2%
Poor/Fair/Good	61.8	53.9	69.2	6.3%	63.8	60.1	67.5	3.0%	63.0	51.1	73.5	9.2%		65.6	51.8	77.2	10.1%
Impact of increased worry on life																	
Not a problem	38.4	31.2	46.2	10.0%	33.9	30.4	37.6	5.4%	34.3	24.3	46.0	16.3%	0.94	45.5	32.5	59.1	15.3%
Minor to serious problem	61.6	53.8	68.8	6.2%	66.1	62.4	69.6	2.8%	65.7	54.0	75.7	8.5%		54.5	40.9	67.5	12.7%
Impact of decreased hope on life																	
Not a problem	66.1	58.2	73.2	5.8%	72.7	69.1	76.0	2.4%	72.7	61.0	82.0	7.4%	1.00	75.1	61.8	84.9	7.9%
Minor to serious problem	33.9	26.8	41.8	11.4%	27.3	24.0	30.9	6.4%	27.3	18.0	39.0	19.8%		24.9	15.1	38.2	23.9%
Impact of decreased self-control on life																	
Not a problem	82.4	75.4	87.8	3.8%	81.3	78.0	84.2	1.9%	74.4	62.6	83.5	7.2%	0.18	82.8	70.7	90.5	6.0%
Minor to serious problem	17.6	12.2	24.6	17.8%	18.7	15.8	22.0	8.4%	25.6	16.5	37.4	21.0%		17.2	9.5	29.3	29.0%