

2011 Nova Scotia
Adolescent Gambling
Surveillance Technical Report

*Identification of Gambling Risk
and Harm Among Adolescents
Aged 13–18 Years*



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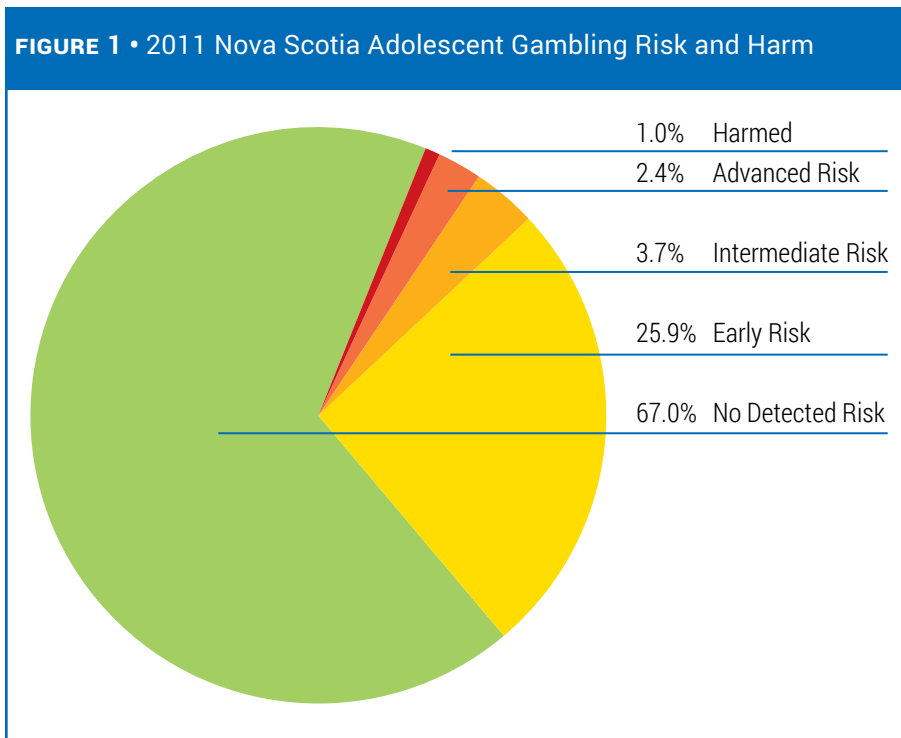
Executive Summary

The 2011 Nova Scotia Adolescent Gambling Surveillance is a gambling information collection project undertaken with adolescents. It marks the first comprehensive, quantitative assessment of gambling pre-harm risk indicators and consequences particular to Nova Scotia adolescents aged 13–18 years who live at home. It builds on the findings of the 2008 Nova Scotia Adolescent Gambling Exploratory Study with a broad survey of gambling prevalence among adolescents in the province. The purpose of this project was to identify and assess key factors for gambling risk and harms among adolescents using a problem-gambling screening tool known as the Focal Youth Gambling Risk Screen© (FYGRS V1.2)¹ adapted for the unique gambling-related experiences of adolescents. FYGRS V1.2 explores the relationship between adolescents' characteristics and prevailing environmental influences, and discerns how this relationship impacts their motives and beliefs about gambling, which in turn may lead to behavioural intentions to gamble. The screen also attempts to provide information about the ability of adolescents to act upon these intentions, which may lead to a gambling behaviour consequence. A modified version of Diagnostic Statistical Manual-IV Multiple Response for Juveniles (DSM-IV-MR-J) was used as an independent measure of problem gambling among adolescents and to corroborate Harmed findings of FYGRS V1.2 (Fisher, 2000). From November 18, 2010 to February 28, 2011, 900 in-depth surveys were completed with a representative sample of adolescents aged 13 to 18 years of age residing in randomly selected households in Nova Scotia. The overall response rate for the two-staged adolescent survey was 65.1% consisting of a response rate of 87.9% for the Household Screen undertaken to identify eligible households with surveys completed for 74.1% of all youth living in these households. Survey estimates are considered accurate at a total sample level within $\pm 3.5\%$ at 95% confidence level (CL) 19 out of 20 times the survey is conducted. In addition, reasonable steps were undertaken to ensure the protection of the respondents' information while maintaining the integrity of the statistics. All materials were subject to Nova Scotia Department of Health & Wellness (NSDHW) privacy review, an independent ethics review and the survey was conducted in compliance with provincial privacy requirements.

1 FYGRS was initially used in the *2008 Nova Scotia Adolescent Gambling Exploratory Research* project. FYGRS V1.2 was used for this study.

Summary of Key findings

Gambling Risk & Harm among Adolescents in Nova Scotia



- Using the FYGRS V1.2 instrument, few adolescents in Nova Scotia qualified as Harmed or Problem Gamblers ranging from .4% to 1.6% of youth in the province (1.0%; \pm 0.65).
- The majority of adolescents in Nova Scotia did not score for any gambling risk or harm (No Detected Risk: 67.0%; \pm 3.05%).
- However, one-third of youth aged 13 to 18 years in the province scored at some level of risk for gambling harm.
- Approximately one in four adolescents scored for Early Risk (25.9%; \pm 2.84%), 3.7% (\pm 1.23%) scored for Intermediate Risk, and 2.4% (\pm 0.99%) scored at Advanced Risk for developing gambling harms or problems.
- Adolescents found to be at Early Risk (25.9%) and Intermediate Risk (3.7%), had not yet reported any negative consequences or harms positioning these adolescents as exhibiting indications of pre-harm risk (i.e., identification of risk in advance of harm).

- In contrast, adolescents found to be at Advanced Risk (2.4%) may be exhibiting impaired control and half reported negative impacts associated with their gambling in at least one life area.
- Overall, 1.0% ($\pm 0.65\%$) of youth aged 13-18 years in Nova Scotia scored as Harmed adolescent gamblers using FYGRS V1.2, with 0.4% scoring for both harm and persistence, a defining characteristic of problem gambling. All Harmed adolescents were experiencing negative impacts in two or more areas of their life and 44.4% also scored for persistence, that is continuing to gamble despite experiencing negative impacts.
- The DSM IV-MR-J classified 0.9% of youth in Nova Scotia as probable Problem Gamblers with an overlap of 88.9% with FYGRS V1.2 and a significant Kappa of 0.841, well above the criterion of 0.75 set for signalling strong agreement between the measures (Fleiss, Levin, & Paik, 2003).

Key Risk Indicators for Adolescents in Nova Scotia

FYGRS V1.2 is comprised of a comprehensive set of 12 multi-item indicators sequentially related to escalating risk and harm as well as a single item measure of frequency of play. Each of the components represent a distinct area of risk or harm for adolescents ranging from early risk indicators (e.g., risky beliefs, access to gambling opportunities, influence of others, facilitation by adults) through to advanced risk indicators (e.g., preoccupation, impaired control, risky practices) and finally indicators of harm (e.g., persistence, negative consequences). Therefore, in addition to categorizing youth into one of five risk categories, FYGRS V1.2 can also be used to assess impacts at a component level. This functionality assists in developing and monitoring strategies for addressing the various factors contributing to risk and the development of harm and problem gambling among youth in a particular jurisdiction. Thus, the findings assist stakeholders in identifying 'who' is at risk and more importantly 'why'.

- Adolescents 13-18 years living in Nova Scotia triggered as being at-risk on the following indicators related to adolescent gambling risk or harm:
 - Risky Cognitions: Beliefs: 16.2% of adolescents in Nova Scotia hold beliefs about gambling that put them at risk for developing gambling harm;
 - Influence of Others: 15.0% were at risk due to exposure to significant others in their life such as relatives, family or peers who gamble regularly and/or encourage youth to gamble;
 - Opportunities to Gamble: 10.7% were found to have risky access to opportunities to gamble at home, school or when they are out with friends, on the internet or with mobile devices;

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- Risky Cognitions: Motives: 5.4% of adolescents were at risk due to having risky motives or reasons for gambling such as gambling for the thrill of competition, to win prizes, for self-esteem or status. In contrast to findings for adults, few youth gambled to escape problems or to make money, although those who did were more likely to score for Advanced Risk or Harm;
- Adult & Peer Facilitated Gambling: 5.0% triggered as having adults or peers in their life who facilitated gambling involvement such as paying for gambling, including youth in adult hosted events or helping youth to gamble;
- Frequency of Gambling: 2.9% were found to gamble at frequency rates associated with risk (4+ times in the past 30 days);
- Impaired Control: Continue: 2.3% exhibited impaired control while they were gambling making it hard for them to stop once they had started playing;
- Risky Practices: 2.6% were found to be engaging in risky gambling practices including chasing losses, cheating, borrowing from friends or family members, trading or selling personal property to gamble;
- Impaired Control: Begin: 1.1% exhibited impaired control over resisting opportunities to gamble, engaging in gambling even when they didn't want to;
- Negative Consequences: 1.8% had experienced negative impacts in at least one area of their life due to gambling.

Profile of Gambling Risk & Harm by Age, Sex and Health Zone

- The percentage of adolescents scoring for risk and harm increased with age, with almost half of youth aged 17-18 years (49.6%) scoring at some level of risk for gambling harm as compared to 33.7% among those aged 15-16 years and 21.7% among those 13-14 years.
- Males had significantly higher rates of risk (i.e., Intermediate to Harmed levels - Males: 8.8% versus Females: 5.1%).
- Those scoring at any level of risk were also significantly higher among adolescents living in the Northern (36.5%) or Eastern (40.1%) Health Zones of Nova Scotia as compared to youth living in the Western (31.6%) and Central (29.1%) Health Zones. The regional differences observed for risk were primarily due to higher exposure to gambling influence from others (e.g., peers and family) and, in the case of youth in the Northern Health Zone, adults and peers facilitating youth access to gambling.

Adolescent Gambling Patterns

- Overall, 55.7% of adolescents in Nova Scotia aged 13-18 years reported having ever wagered money or other items of value on some form of gambling or game of chance.
- Based on this definition, 32.3% of youth had taken part in some form of gambling in the past year with 12.0% having gambled in the month prior to taking part in the survey.
- Involvement in gambling over the past year was lowest among youth living in the Western Health Zone (23.1% versus 31.1%-40.4%). However, a similar percentage of adolescents in all Health Zones had taken part in gambling in the past month suggesting there was no difference in monthly gambling rates by youth throughout the province.
- Frequency of monthly gambling activity was also similar across the province with 5.5% of youth reporting gambling on two or more days in the past month and 2.9% gambling on four or more days.
- On average, adolescents in Nova Scotia first gambled when they were 11.8 years of age (median=12 years).
- Most gambling activity over the past year took place outside of school primarily on weekends (57.6%) or, to a lesser extent, in the evenings on weekdays (27.0%).
- A minority of adolescents gambled at school (8.9%) although rates of gambling at school were four times higher among adolescents aged 13-14 years (16.4%) versus those aged 17-18 years (3.5%).
- Most adolescents who gambled reported gambling during the school year (76.7%) with 68.9% having gambled in the summer.
- Among adolescents who gambled over the past year, 58.3% took part in three or more different types of gambling activities.
- Overall, 85.4% of adolescents had access to money on a regular monthly basis either from part-time or occasional jobs (61.9%) or from an allowance (42.8%) with, on average, a discretionary income of about \$130 per month (median=\$50), higher among those aged 17-18 years (\$200) as compared to adolescents aged 13 to 16 years of age (\$40-\$60).

Participation in Organized/Commercial Gambling

Organized and commercial gambling refers to any form of gambling that youth play for money and that generates funds for those operating the activity including provincially regulated and non-restricted commercial gambling as well as organized fundraising. There were 17 different forms of commercial gambling measured in the current study.

- Most of the gambling activity reported by participating youth in Nova Scotia occurred for organized – commercial forms of gambling:
 - 54.4% of adolescents have ever spent their own money on some commercial or organized form of gambling;
 - 29.8% purchased and/or played an organized or commercial form of gambling in the past year;
 - 9.2% of adolescents had taken part in commercial gambling in the past month.
- The most popular organized games of chance played by youth were charity raffles (20.1%), arcade games played for prizes and items of value (17.2%), and 50/50 tickets (16.7%).
- Females were almost twice as likely to be involved in bingo (14.9% versus 7.7%), whereas males reported higher involvement in organized poker tournaments (2.0% versus 0%), sports betting both for the Atlantic Lottery Corporation's (ALC) sports lottery (ProLine) (2.0% versus 0.2%), and, to a lesser extent, organized sports pools (0.6% versus 0.2%).
- No adolescents aged 13-18 years reported gambling on VLTs or at casinos in the province over the past year.
- The forms of commercial or organized gambling most widely associated with risk among adolescents was involvement in arcade gaming machines (i.e., non-skill based arcade games played for money to win prizes), charity raffles and not-for-profit 50/50 tickets. Considerably fewer youth had purchased ALC instant tickets and/or played in poker tournaments but among those who had participated, a larger proportion scored for advanced risk or harm when compared to the rates of risk and harm for the three activities with the highest participation.

Participation in Online/Internet Gambling

Internet and online gambling refers to any gambling activities that involve wagering for money, virtual points, or other items of value and occur online or through the internet using a computer or handheld device (i.e., mobile/cell phone). There were seven different forms of online gambling measured in the current study.

- Involvement in online gambling for money by adolescents in Nova Scotia was low:
 - 1.5% have ever tried gambling for money online;
 - 1.3% gambled online with money in the past year;
 - 0.7% had gambled online with money in the past month;
- Most online gambling activity for money by youth occurred on ALC's PlaySphere site with 0.8% of youth purchasing lottery tickets and/or engaging in sports lottery betting (ProLine).
- In contrast, 7.6% of youth reported they had gambled at some time on internet practice sites for points with 5.9% having done so in the past year.
- Fewer (4.1%) had tried gambling on a social network site such as Facebook, or MySpace with 2.5% making virtual wagers on these sites in the past year.
- When browsing online 3.7% of participating adolescents had clicked on gambling related advertising.
- Online gambling was often a social activity for adolescents; 6.2% gambled online in the company of friends, and 2.3% had gambled online in the company of family members. This means that more than half of youth who have ever gambled online were doing so with significant others in their life.
- There was a substantial association between online betting of any kind (e.g., online wagering for money, virtual money, or points) and adolescent experience of gambling harm.

Involvement with Lottery Products (Retail & Online)

- Few adolescents reported underage purchasing of lottery products with 3.3% youth aged 13-18 years buying them during the past year and this activity increased with risk:
 - 2.3% had personally purchased lottery products either online (0.4%) or at a retail outlet (2.0%) using their own money;
 - 1.6% had personally wagered their own money on Sport Select ProLine either online (0.5%) or at a retail outlet (1.2%), this activity was reported almost exclusively by males (2.0% versus females: 0.2%).
- A higher proportion of adolescents reported that adults had bought lottery tickets for them 12.2% with 14.8% indicating they had received lottery tickets as gifts during the past 12 months.
- Overall, 6.3% of adolescents reported they had visited the ALC website at some time; however, it is unclear whether they visited the ALC website out of curiosity or intended to gamble with or without success.

Participation in Non-Commercial/Informal Gambling

Non-commercial/informal gambling refers to gambling by youth involving money, items of value, or personal favours on activities that are largely self-organized or occur between friends, family, or other acquaintances at home, school or other venues/areas that youth congregate. There were 13 different forms of non-commercial or informal forms of gambling measured in the current study.

- Non-commercial or informal gambling reported by participating adolescents more often consisted of skill-based, personal wagering:
 - 24.9% of adolescents in Nova Scotia had ever wagered money or items of value on some form of informal gambling;
 - 16.5% reported they had wagered on informal forms of gambling in the past year especially males (19.5% versus females: 13.0%);
 - 5.2% of adolescents had taken part in informal gambling in the past month.
- Card games were most popular, in particular poker games (8.3%) with 6.1% of youth having gambled on other types of card games over the past year (e.g., Auction 45's, Hearts, and Cribbage).

- There was greater diversity in the personal wagers of male youth that most often focused on personal competition including poker (11.8%), sports pools (7.3%), bets on local sports (4.5%), personal dares or challenges (4.1%), personal outcomes in games of skill (3.7%), 'bloody knuckles' (2.8%) and the outcomes of physical fights among peers (1.8%).
- Involvement in poker games or other card games played for money was most strongly associated with risk. While males were more likely than females to play poker (11.8% versus 4.6%) there was no sex differences observed for adolescent gambling on other card games.

Gambling for Non-Monetary Items or Personal Favours

- At some time in the past year, 6.8% of adolescents in Nova Scotia gambled using items of value or personal favours , with 5.5% having made such non-monetary wagers in the past year:
 - 4.8% had ever gambled with possessions or non-monetary items of value;
 - 3.6% of youth in Nova Scotia had ever gambled for personal favours such as work shifts, chores or homework;
 - 2.8% of youth had bet using alcohol, drugs or cigarettes;
 - 0.9% had gambled for sexual favours especially older teens (17-18 years: 2.5%).
- In all cases, betting for non-monetary items or favours increased significantly with risk for gambling harm.

Exposure to Communications Related to Gambling Risk

- Overall, 22.8% of youth had participated in an event that provided information about gambling risks, more so in rural areas of the province (26.5% versus 18.3%).
- Adolescents in the Central Health Zone (16.0%) reported the lowest exposure to gambling risk information compared to exposure rates in Western (24.9%), Northern (28.3%), and Eastern (29.0%) Health Zones.

Perceptions of Gambling Impacts

- For the most part, the prospect of gambling losses generated little concern among adolescents with 94.6% reporting that gambling losses would have a minor impact in their life at this time.
- Adolescents in Nova Scotia perceived the primary benefit of gambling as a chance to make money (38.8%) with 11.8% specifically mentioning the appeal of gambling offering a chance to 'get rich'.
- In general, adolescent perceptions of negative consequences associated with gambling centered on financial problems (84.1%), and fear of addiction (19.2%), both of which appear to have low relevance to youth and generated minimal personal concern among adolescents taking part in the study.
- A minority of adolescents mentioned potential problems with family relationships (11.0%), losing items of value (7.5%), criminal justice problems (6.2%), or worries about their physical safety (4.6%).
- In contrast, the primary negative consequences reported by youth experiencing problems with their gambling were most often related to life style and mental health issues surrounding self-esteem, depression, anxiety, and how they feel about themselves.

Conclusion

Gambling has become a normalized activity for adolescents in Nova Scotia. More than half of adolescents aged 13–18 years living at home reported ever having wagered on some type of gambling or game of chance, especially commercial or organized forms of gambling. Gambling is a common way for charities, fundraising agencies and commercial operations to generate revenues and one in five adolescents spent his/her own money on raffles or bought 50/50 tickets in the past year. About one in four adolescents can gamble at home, school, or among friends if they choose, and 12.2% indicated adults had paid for some form of gambling for them. One in 10 adolescents also reported gambling with adults. This easy access and normalization of gambling was found associated with increased risk among adolescents.

Because of their high access to and involvement with the Internet, adolescents have access to online gambling opportunities. While less than 2% of adolescents reported gambling online for money in the year prior to the survey, 1 in 10 adolescents reported having gambled online and risked something of value: points, virtual money, or exchanges of non-monetary items. Adolescents' level of comfort in wagering online is of concern, especially when considering some high-risk beliefs that are commonly held by adolescents:

- Internet gambling is safer than other forms of gambling, such as VLTs or casino gambling.
- Online games are less likely to be vulnerable to cheaters or manipulation by players.
- The odds of winning when you play for real money is the same as the odds offered on practice sites.

The survey suggests that arcade gaming machines are another potentially risky form of gambling for adolescents. Arcade gaming has evolved from video games that rewarded skillful playing with extended play time to games that generate wins randomly and offer low-probability, high-level prizes. Yet more than one-third of adolescents believe arcade gaming machines offer games of skill, which reinforces continued engagement in the activity as practice to become more skillful.

The survey further suggests restricting VLTs and casino gambling to age-controlled environments has been effective in preventing adolescents from accessing these higher-risk forms of gambling. No adolescent reported playing VLTs or gambling at casinos in the year prior to the survey, and very few were exposed to such forms of gambling by adults taking them to watch them play.

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The evidence suggests many adolescents in Nova Scotia are developing risky gambling involvement, beliefs, motives, and gambling practices that could place them at greater risk when they become adults. Yet there appears to be a disconnection between how adolescents perceive the negative effects of gambling and how young people actually are impacted by gambling.

Because the gambling experience and impacts differ strongly between adolescents and adults, communications based on adult gambling experiences may not resonate with adolescents.

Although gambling harm among adolescents currently appears to be low, the impact for those who are experiencing problems is substantial, and the consequences could be long-term.

More importantly many of the risk factors identified may put adolescents at greater risk as they age and become exposed to age-restricted forms of gambling as young adults.

Section 1:

Introduction & Methodology

The Nova Scotia Adolescent Gambling Surveillance study was an information collection project designed to identify and assess key factors for gambling risk and harms among Nova Scotia adolescents aged 13–18 years who live at home. It marks the first comprehensive quantitative assessment of gambling pre-harm risk indicators and consequences for this cohort. The survey builds on the findings of the 2008 Nova Scotia Adolescent Gambling Exploratory Study with a full-scale comprehensive survey of gambling prevalence among adolescents in Nova Scotia. The purpose of this project was to identify and assess key factors for gambling risk and harms among adolescents using a problem-gambling screening tool known as the Focal Youth Gambling Risk Screen® (FYGRS V1.2) adapted for the unique gambling-related experiences of adolescents. The FYGRS V1.2 explores the relationship between adolescents' characteristics and prevailing environmental influences, and discerns how this relationship impacts their motives and beliefs about gambling, which, in turn, may lead to behavioural intentions to gamble. The screen also measures the ability of adolescents to act upon these intentions, which may lead to a gambling behaviour consequence.

Between November 18, 2010 and February 28, 2011, 900 adolescents 13 to 18 years of age residing in randomly selected households in Nova Scotia were surveyed by telephone. Reasonable steps were undertaken to ensure the protection of the respondents' information while maintaining the integrity of the statistics. All materials were subject to NSDHW privacy review and the survey was conducted in compliance with Nova Scotia provincial privacy requirements. A key objective of the survey was to ensure that measurement of adolescent gambling moved beyond the identification of problem gambling to include a better understanding of the factors impacting risk for gambling harm in this age cohort. Specifically, NSDHW wished to obtain data to inform the development of public policy and strategies intended to reduce risk and prevent gambling-related harm for adolescents, their families, and their communities in Nova Scotia.

Measurement of Adolescent Gambling Risk & Harm

Youth Gambling Screens

To date there is no gold standard for measuring gambling risk and harm among adolescents. Therefore, the measures of adolescent gambling and problem-gambling behaviour are typically based on adult screens adapted for use with adolescents. They include: the Diagnostic Statistical Manual-IV Adapted for Juveniles (DSM-IV-J; Fisher, 1992) and DSM-IV-MR-J, adapted for Multiple Responses (Fisher, 2000); a revised version of the South Oaks Gambling Screen (SOGS-RA) developed for adolescents by Winters, Stinchfield and Fulkerson (1993); and the Massachusetts Adolescent Gambling Screen (MAGS) developed by Shaffer, LaBrie, Scanlan, and Cummins (1994). The Canadian Adolescent Gambling Index (CAGI; Tremblay, Stinchfield, Wiebe, and Wynne, 2010) was developed to address some of the shortcomings identified in measuring problem gambling among adolescents. While all instruments have been effective to some degree in identifying levels of problem-gambling severity among adolescents, none was designed or tested to address identification of risk.

To identify and assess key factors for gambling risk and harm among adolescents, NSDHW used a new measurement instrument, the FYGRS V1.2 (Focal Research, 2008). The tool has been adapted to capture the unique gambling-related experiences of adolescents. It also is designed to explore the relationship between individual characteristics and environmental influences and discern how this relationship impacts adolescents' motives and beliefs about gambling, which in turn may lead to behavioural intentions to gamble. FYGRS V1.2 was pilot- tested in the 2008 Nova Scotia Adolescent Exploratory Gambling Research conducted for the Department of Health Promotion and Protection (Schellinck, Schrans and Focal Research, 2008).

In addition, the DSM-IV-MR-J was used as an independent measurement of problem gambling and to comparatively assess the Harmed component of FYGRS V1.2. Although there is no strong theoretical basis for selecting one adolescent problem-gambling screen over another (O'Neil, Whetton and Duerrwald, 2003), the DSM-IV-MR-J appears to be the best-designed single construct screen for the identification of adolescent problem gamblers at this time. A detailed discussion of the rationale for selecting the DSM-IV-MR-J can be found in Appendices A and B.²

2 Further information about the Focal Youth Gambling Risk Screen© can be obtained from the Principal Investigators at www.focalresearch.com.

Focal Youth Gambling Risk Screen (FYGRS V1.2 Instrument)

Based on a hierarchy of effects model, FYGRS V1.2 identifies risk factors that may cause or lead to problem-gambling-related behaviours (e.g., risky practices) or harms (e.g., negative consequences). Such a model assumes that certain conditions precede or influence the experience of subsequent conditions. For example, what a person thinks or feels influences what he or she does, which in turn produces outcomes associated with that behaviour. Thus, risky beliefs are precursors for development of risky reasons for gambling and these in turn heavily influence the likelihood of adolescents engaging in risky gambling practices and developing gambling harms. It is assumed that the risk for developing gambling problems will exist in advance of the experience of negative outcomes associated with gambling. Thus, the model assumes that there is a temporal order for establishing causality. FYGRS V1.2 identifies measurable factors and behaviours that are thought to be sequentially related to the development of gambling harms and occur prior to the experience of actual harm.

The tool comprises 12 multi-item constructs (indicators) and one single-item indicator measuring gambling frequency. Table 1 lists the hierarchy of the FYGRS V1.2 constructs along with a brief description of each.

Each of the 13 indicators represents a distinct area of gambling risk or harm for adolescents from Early Risk to Advanced Risk and Harm. Responses of adolescents to statements for each construct are used as scoring criteria for assigning a particular risk indicator.

TABLE 1 • Hierarchy of FYGRS V1.2 Harm and Risk Indicators (i.e., Constructs Comprising FYGRS V1.2)

FYGRS V1.2 Indicators (Constructs)	Description
Adults/Peers Facilitate Gambling	Adults and peers facilitate adolescent access and participation in gambling (e.g., hosting gambling)
Influenced by Others	Significant others including family and/or peers are involved in, encourage and/or support gambling.
Opportunities to Gamble	Have access to resources, know-how, and opportunities to gamble if and/or when wanted.

Risky Cognitions: Beliefs	Hold misleading or inaccurate beliefs about gambling that are associated with the development of risky motivations for gambling.
Preoccupation: Desire	Strong drive to gamble as much as possible.
Risky Cognitions: Motives	Risky reasons for gambling associated with the development of risky behaviours (e.g., thrill of beating others, escape, self-esteem, status).
Gambling Frequency	Gambled four or more days in the past 30 days (e.g., current gambling).
Impaired Control: Continue	Inability to stop gambling once started or engaged in the activity.
Risky Practices	Engagement in gambling behaviours found to be associated with development of gambling harm, negative consequences, and problems (e.g., chasing losses, using fake id, cheating).
Impaired Control: Begin	Inability to resist gambling opportunities or stop oneself from going to gamble.
Preoccupation: Obsession	Excessive preoccupation, constantly thinking about gambling or finding ways to gamble.
Harm: Any Negative Consequences	Experiences negative impacts in different areas of life, including financial, personal, lifestyle, social and torment (i.e., mental health & well-being).
Persistence	Over an extended period, continues to gamble in a risky manner that leads to harms.

FYGRS V1.2 uses the indicators collectively for an overall risk assessment. Adolescents are assigned to one of five risk- and harm categories based on scoring on each of the indicators (Table 2). FYGRS V1.2 also uses risk levels (I to V) synonymously with these categories to represent the risks associated with gambling for each category.

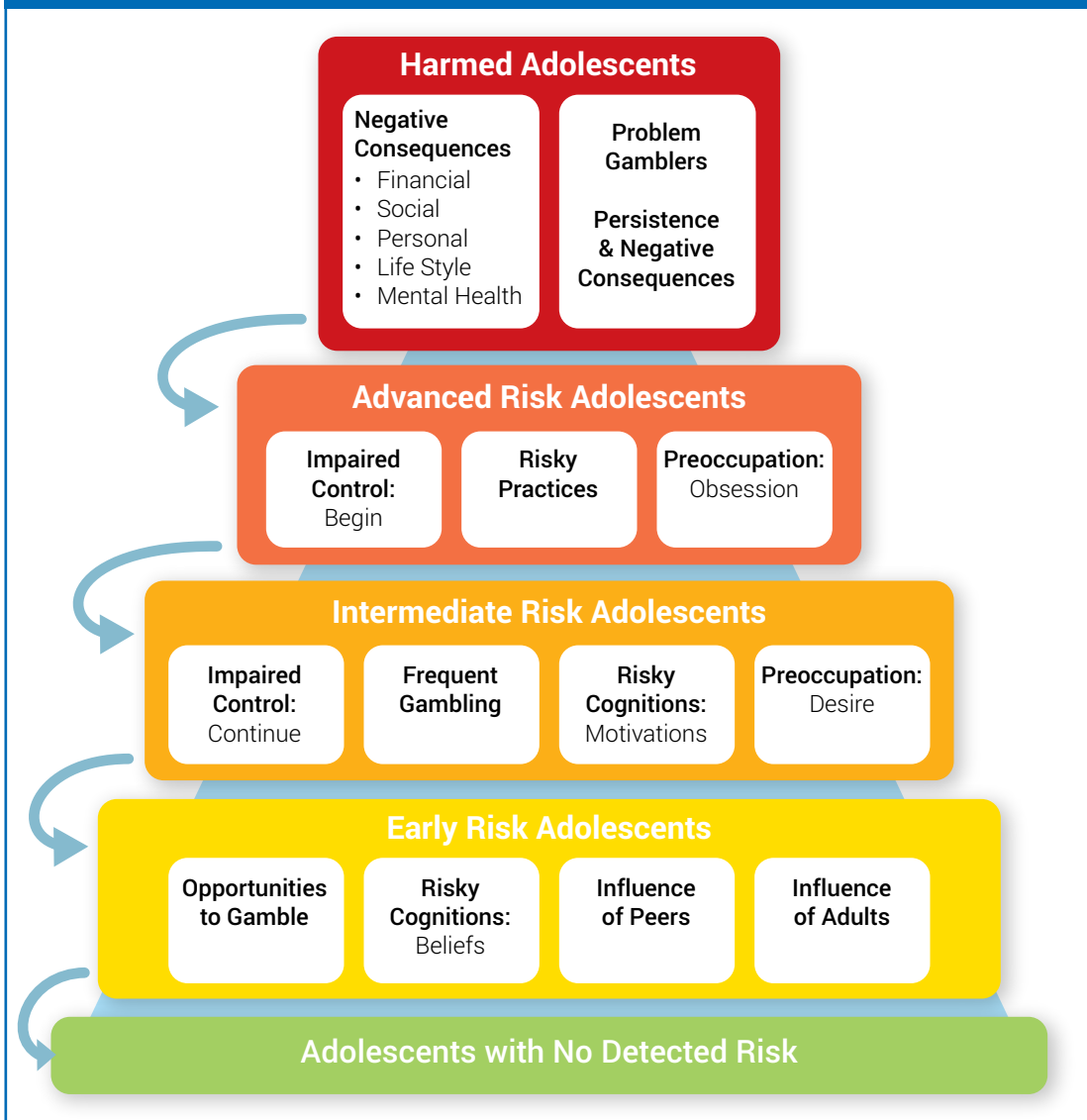
TABLE 2 • FYGRS V1.2 Identification Classification for Five Levels of Harm and Risk		
Risk Level	Label	Description
Level V	Harmed Adolescents	Adolescents characterized as experiencing negative impacts due to their gambling in at least two of five different areas of their life, including financial, personal, lifestyle, social and mental health & well-being (e.g., Torment). Adolescents who also score for persistence are characterized as problem gamblers.
Level IV	Advanced Risk	Adolescents may have experienced one form of harm due to gambling (e.g., experience negative consequences in one area of their life) or they score for the indicators of Impaired Control: Begin, Preoccupation: Obsessed, or for Risky Practices.
Level III	Intermediate Risk (Pre-harm)	Adolescents exhibit no Harm but have scored for one or more of the following risk indicators, including Preoccupation: Desire, Risky Cognitions: Motives, Impaired Control: Continue, and/ or Frequent Gambling (i.e., 4+ days in past 30 days)
Level II	Early Risk (Pre-harm)	Adolescents score for at least one of the indicators for Risky Cognitions: Beliefs, Gambling Opportunities, Influence of Others, or Adult Facilitation of Gambling again similar to Level III categorized as being at pre-harm risk.
Level I	No Detected Risk	Adolescents do not score for any of the risk indicators (included in FYGRS V1.2)

Risk and harms can vary by individual circumstances or characteristics. Not all adolescents will have the same risk indicators (e.g., exposure to gambling opportunities, access to cash) or experience the same type of harm (e.g., financial, personal, school-related, family, social). FYGRS V1.2 has been modelled to take these varying and complex relationships into account and thus offers a theoretically stronger method of assigning adolescents to risk categories.

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It identifies the constructs that were directly and most strongly associated with harms and persistence, and thus are the conditions that classify an adolescent as having high risk for gambling harms and problems. Adolescents can then be assigned to lower risk status if they trigger on other conditions associated with but not directly leading to problem gambling (e.g., predictive of risky gambling behaviour rather than harm).

FIGURE 2 • FYGRS V1.2 Model for Adolescent Classification of Five Levels of Harm and Risk



This dual functionality means that FYGRS V1.2 moves beyond traditional identification of problem gambling prevalence by providing information for use in informing, monitoring, and evaluating gambling related prevention, harm reduction, social and public health policy. In summary, FYGRS V1.2 not only enables users to identify 'who' is at risk but, more importantly, 'why'.

In the current study the FYGRS V1.2 measure was used to profile the key risk indicators (e.g., constructs) as well as the scored risk classification described above to assess adolescent gambling behaviour in Nova Scotia.

Method

Between November 2010 and February 2011, 900 adolescents aged 13–18 years living at home in Nova Scotia were surveyed for this project. A number of demographic factors and information to assess key factors for gambling risk and harms were collected. The survey was administered by telephone in compliance with Canadian Tri-Council Ethics and Nova Scotia provincial privacy requirements. Parental permission was obtained for adolescent participants under 18 years of age.

All materials were subject to an external independent ethics review. In addition, the Nova Scotia Health Research Foundation was retained by NSDHW to administer an external review by three independent reviewers of the proposed design, methodology, and survey instrument.

Following the review process, qualitative research was undertaken with youth to test and finalize the survey instrument (August 30-September 8, 2010), the revised instrument was pre-tested (September 18-23, 2010), and a Pilot Study conducted from November 18 to December 15, 2010 (n=264 surveys: 66 per Health Zone; overall response rate= 59.5%). The Pilot was undertaken to verify project assumptions, survey design, and instrument performance. There were no changes that resulted from the preliminary analysis and review of findings and the project was extended to completion of the full sample size (n=900) from January 10, 2011 to February 28, 2011.

Lastly, reasonable steps were undertaken to ensure the protection of the respondents' information while maintaining the integrity of the statistics.

Sampling Design

To ensure a random representative sample, a two-staged cluster sampling design was used. Households were first screened using the Household Screen to identify those having any children younger than 19 years of age in the residence. If children were found to live in the residence, permission was secured from an eligible adult resident (aged 19 years or older) in order to complete the brief Household Survey. A privacy statement was then read in compliance with privacy standards and the adult household respondent was asked the ages and permanent residence status for all those living in the household. Only those households with adolescents aged 13–18 years were eligible to advance to the next stage of sampling. Adolescents who could not participate due to physical, emotional or mental challenges were excluded from taking part in the survey (approximately 1.2%; n=12).

Once the household information had been obtained, the purpose of the adolescent survey was disclosed and informed consent was solicited from a parent or legal guardian for participation of any eligible adolescents. After parental or guardian consent was obtained, the survey was then conducted with all qualified adolescents aged 13–18 years identified within each household.

All adolescents taking part in the survey were provided with a toll-free number for the Problem Gambling Help Line.

To conduct comparisons by region in the province, the sampling frame was also stratified by the four primary Health Zones in Nova Scotia: Western, Northern, Eastern and Central. In each Health Zone 225 surveys were administered, with a maximum margin of error [ME] of $\pm 6.5\%$ at the 95% confidence level [CL].

FIGURE 3 • Nova Scotia Health Zones

Overall there were a total of 1,038 randomly selected households with any eligible adolescents living in residence who were identified in the sampling frame, of which 87.9% agreed to participate in the survey (n=912). Among consenting households, a total of 1,215 adolescents aged 13–18 years were identified. Surveys were completed with 900 of these adolescents, achieving a response rate of 74.1% for the adolescent survey with an overall response rate of 65.1% for eligible adolescents living in randomly selected households in Nova Scotia (87.9% of 74.1%).

The total sample of 900 randomly selected adolescents living in households throughout NS is considered representative with a maximum margin of error [ME] of $\pm 3.5\%$ at the 95% confidence interval [CI] and an overall response rate of 65.1%.

For more information about the sampling methodology and data collection, please refer to Appendix C.

Questionnaire Design

The principal investigators at Focal Research in cooperation with the project team at NSDHW designed the survey. The final questionnaire was comprised of the core FYGRS V1.2 questions as well as the DSM-IV-MR-J, other correlates including risky behaviours, youth engagement, and demographic questions.

To inform the questionnaire design process for the project and to assess understanding and relevance of the revised FYGRS V1.2 constructs, updated survey measures, and the DSM-IV-MR-J, qualitative research was undertaken with adolescents through a series of one-on-one in-depth interviews (Aug. 30–Sept. 5, 2010; n=8). Furthermore, focus groups were held (Aug. 30, 2010; 3 groups, n=28). The focus group sample was comprised equally of males and female adolescents and segmented by age (13-14 year olds, 15-16 year olds, 17-18 year olds) in compliance with best practices identified during the exploratory research stage (e.g., minimizing exposure of younger adolescents to higher risk gambling behaviours that occur among older teens).

The questionnaire was revised based on the feedback provided by adolescents. Revision included the addition of “gambling for favours” (e.g., personal favours such as homework, working job shifts, or sexual favours), “gambling using online social networks” such as Facebook and MySpace, and “exposure and potential susceptibility to mobile and Internet gambling.” The revised questionnaire was then pre-tested (Sept. 16–24, 2010; n=25).

The revised survey was pre-tested from September 16–September 24 (n=25). The final survey was submitted to NSDHW for external peer review facilitated by the Nova Scotia Health Research Foundation and approved for field use in October 2010. The final survey draft was tested in the Pilot Study commencing November 18, 2010.

TABLE 3 • Questionnaire Design for the 2011 Nova Scotia Adolescent Gambling Surveillance Survey

Survey Section	Description
Gambling Context, Perceptions & Interest	<ul style="list-style-type: none"> • General Risky Behaviours; Engagement in Activities in School and Outside School; • General Gambling Beliefs (FYGRS V1.2 Risky Beliefs Construct: 13 statements),
Access to Resources & Internet	<ul style="list-style-type: none"> • Access to Resources (e.g., part-time jobs, allowance); Disposable Income & Expenditures; • General Online Access & Activity (e.g., cell phone use, internet use, online gaming, buying/selling online exposure to gambling ads)
Involvement in Gambling Non-commercial/Informal Gambling Activity	<ul style="list-style-type: none"> • Ever played, frequency of past year gambling, outcomes in past year, number of days played in past month; 12 categories including: poker with friends/family; other card games; sports pools/bets; outcomes of video/arcade games; coin pitching; bloody knuckles; outcomes for personal games of skill; outcomes of schoolyard fights; personal bets/dares; dice games, other bets with family or friends.
Involvement in Gambling Commercial/Organized Gambling Activity (excluding Internet)	<ul style="list-style-type: none"> • Ever played, frequency of past year gambling, outcomes in past year, number of days played in past month; • 17 categories including: arcade games played for prizes; charity raffles; 50/50 tickets; Atlantic Lottery Corporation's (ALC) lottery products; bingo; VLTs; casino gambling; sports betting; horse racing/harness racing.
Involvement in Online / Internet forms of gambling	<ul style="list-style-type: none"> • Ever played, frequency of past year gambling, outcomes in past year, number of days played in past month; • 6 categories of online gambling for money including ALC online products, other online sports bets or pools, online poker and casino gambling; • 3 other categories of online wagering including: gambling on practice sites; gambling online using virtual money/points that can be traded for things of value; and gambling on social network sites such as Facebook; MySpace.

Non-Monetary Wagering Activity	<ul style="list-style-type: none"> • Involvement in wagering using possessions, alcohol, drugs and/or tobacco, personal or sexual favours as currency.
Motivations for Gambling	<ul style="list-style-type: none"> • 28 statements comprising FYGRS V1.2's seven Motivational Constructs including: playing for thrill of winning; to win money; to win prizes; to improve self-esteem; to escape problems/worries; for status or for entertainment.
Regular and Current Gambling Patterns	<ul style="list-style-type: none"> • Involvement in regular play, amount wagered, won lost; • Gambling behaviours in past 30 days; gambling behaviours among past year gamblers including: time of year; time of day • 25 statements comprising FYGRS V1.2's two Impaired Control Constructs (8 statements), two Preoccupation Constructs (8 statements), and one Risky Gambling Behaviour Construct (9 statements).
Gambling Consequences	<ul style="list-style-type: none"> • 53 statements comprising FYGRS V1.2's Consequences Constructs including: one Positive Consequences Construct and five Constructs for Negative Consequences (Financial, Lifestyle, Personal, Social and Torment) (i.e., mental health & well-being).
DSM-IV-MR-J Section	<ul style="list-style-type: none"> • Nine scored questions.
Risk Self-Assessment	<ul style="list-style-type: none"> • Youth's personal assessment of their gambling risk.
Adult Gambling Behaviour	<ul style="list-style-type: none"> • Gambling activity that is either paid for or supported by adults including: purchasing of lottery tickets; taking youth to play bingo; VLTs or casino games; sport bets/pools; poker games; or gambling online.
Facilitation of Youth Gambling	<ul style="list-style-type: none"> • 29 Statements comprising four FYGRS V1.2's Constructs including: Opportunities to Gamble (10 statements); Influence of Others (6 statements); Has Money or Resources (5 statements); and Adults & Peers Facilitated Youth Gambling (8 statements).
Other & Demographics	<ul style="list-style-type: none"> • Perceived impact of gambling, and perceptions of the benefits and negative consequences of gambling; • Involvement in school or community gambling events that included risk education • Grade level, age, urban or rural area of residence, sex

Assigning Adolescents to Harm Categories

Adolescents are assigned to one of five risks and harm categories working from the top level (Harmed) down. A unique set of indicators is associated with each risk category. For example, to be classified as Harmed, adolescents must score as having negative impacts in two or more life areas. If an adolescent scores for harm and reports persistence (e.g., continuing to gamble despite experiencing negative impacts) then they are classified as experiencing problem gambling. Regardless of how they score on any other indicator, adolescents who score on these two indicators are assigned to the Harmed category.

Adolescents who do not trigger for Harm indicators are then checked for Advanced Risk indicators, including Risky Behaviours, Impaired Control: Begin, Preoccupation: Obsession, and the experience of harm or negative consequence in only one of the five life areas. If an adolescent does not score for Harmed but does score on any of the Advanced Risk indicators, the individual is assigned to the Advanced Risk category regardless of what other indicators he or she scores on. This process is continued for Intermediate and Early Risk levels. Adolescents who do not score on any of the risk indicators are assigned to the No Detected Risk group.

Gambling Forms and Types

Table 4 lists the different types of gambling activities for each of the three forms of gambling assessed in the survey.

TABLE 4 • Different Forms of Gambling		
Commercial/ Organized Gambling	Non-Commercial/ Informal Gambling	Online / Internet Gambling
<ul style="list-style-type: none"> • arcade games to win prizes • 50/50 tickets • charity or fundraising raffles • bingo in bingo halls, on TV and charity bingo • ALC weekly lottery tickets, daily lottery tickets and instant tickets • VLTs • casino gambling • ALC's sports lottery (Sport Select ProLine) • other sports pools or sports betting • horse racing, harness racing and dog racing • sponsored poker tournaments 	<ul style="list-style-type: none"> • poker in-person with friends/ family • other card games • sports pools • betting on outcomes for video games or arcade games • betting on outcomes for local non-professional sports • betting on outcomes for personal games of skill (darts, pool, golf) • "bloody knuckles" • coin pitching • dice games • personal bets or dares • outcomes of schoolyard fights 	<ul style="list-style-type: none"> • purchasing ALC online lottery tickets • ALC Sport Select ProLine online • other online sports betting • online bingo • online poker or other card games • online casino gambling; • online wagering with virtual money or points that can be redeemed for items of value; • Internet practice gambling sites without real money • gambling on Facebook, MySpace and other social network sites

Analysis Approach

Analysis

The analysis in the current report was primarily descriptive profiling and comparing player segments using the following tests:

- Chi Square tests for distribution comparisons;
- Spearman Rank Correlation and Pearson Correlation;
- Z-tests for proportions (when appropriate adjusted for small sample sizes);
- T-tests for mean comparisons (ANOVAs); and
- Mann Whitney U Test for median comparison.

Practical significance was also considered in cases where statistical testing was inappropriate or unusable due to data constraints, such as where there was insufficient sample size in one of the cells to conduct statistical tests but the estimate varied strongly from the response in another category (e.g., 25% vs. 0% between segments).

All differences referenced in the report are significant at the 95%+ confidence level ($p < .05$) unless otherwise noted. In the tables a single star '*' denotes statistically significant differences at the 95% confidence level for a one-tailed test ($p < .05$: one-tailed) or 90% CI for a two-tailed test ($p < .10$: two-tailed); a double star '**' denotes a statistically significant difference at the 95% CI ($p < .05$; two-tailed) confidence level; and, triple stars '***' denote differences at the 99% CI ($p < .001$; two-tailed).

Totals may not add up to 100% due to rounding. Readers are also cautioned that for some questions multiple responses were allowed and, therefore, totals will not add up to 100% due to overlap among the categories.

Data Weighting

Due to the use of stratified sampling by Health Zone ($n=225$ per area), a weighting scheme was applied to reflect the population distribution of adolescents throughout the province (See Appendix D). The data was weighted and combined prior to analysis to generate estimates (e.g., percentages, means, medians). However, all tests of significance were conducted using unweighted sample sizes.

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There were four primary segmentation analyses undertaken:

- Sex (2: male versus female);
- Age category (3: 13-14 years; 15-16 years; 17-18 years);
- Health Zone (4: Western, Northern, Eastern, Central);
- FYGRS V1.2 Risk and Harm Categories (5: No Detected Risk, Early Risk, Intermediate Risk, Advanced Risk and Harmed).

Significant findings for the segmentation analysis are discussed under relevant sections in the report. Refer to Appendix E - Report Tables for a set of detailed tables segmented by FYGRS V1.2's primary risk segments referenced in the Report.

Weighting by Health Zone did not introduce any significant changes to the sample distribution for three of the primary analysis segments with the exception of urban versus rural area of residence. This change was due to the disproportionate number of youth living in the Central Health Zone, which includes Halifax Regional Municipality, the largest urban centre in Nova Scotia.

TABLE 5 • Sample Sizes and Margin of Error for Segmentation Analysis									
	Sample Size	Un-weighted % of Sample	Weighted % of NS Youth	Margin of Error (95% Confidence Level)					
				10%/90%	20%/80%	30%/70%	40%/60%	50%/50%	
Sex									
Male	465	51.7%	51.9%	±2.7%	±3.6%	±4.1%	±4.4%	±4.5%	
Female	435	48.3%	48.1%	±2.8%	±3.7%	±4.3%	±4.6%	±4.7%	
Age Category									
13-14 years	345	38.3%	38.9%	±3.2%	±4.2%	±4.8%	±5.1%	±5.2%	
15-16 years	319	35.4%	35.9%	±3.3%	±4.4%	±5.0%	±5.3%	±5.4%	
17-18 years	236	26.2%	25.5%	±3.8%	±5.1%	±5.8%	±6.2%	±6.3%	
Health Zones									
Western	225	25.0%	23.8%	±3.9%	±5.2%	±6.0%	±6.4%	±6.5%	
Northern)	225	25.0%	17.6%	±3.9%	±5.2%	±5.9%	±6.3%	±6.5%	
Eastern	225	25.0%	19.2%	±3.9%	±5.2%	±5.9%	±6.4%	±6.5%	
Central	225	25.0%	39.4%	±3.9%	±5.2%	±6.0%	±6.4%	±6.5%	
Area of Residence									
Urban (>10,000 residents)	351	38.9%	47.2%	±3.1%	±4.2%	±4.8%	±5.1%	±5.2%	
Rural (<10,000 residents)	548	60.9%	52.6%	±2.5%	±3.3%	±3.8%	±4.1%	±4.2%	
FYGRS V1.2 Risk & Harm Categories									
No Detected Risk	592	65.8%	67.0%	±2.4%	±3.2%	±3.7%	±3.9%	±4.0%	
Early risk	241	26.8%	25.9%	±3.8%	±5.0%	±5.8%	±6.1%	±6.3%	
Intermediate Risk	35	3.9%	3.7%	±9.9%	±13.2%	±15.1%	±16.1%	±16.5%	
Advanced Risk	22	2.4%	2.4%	±12.5%	±16.6%	±19.0%	±20.3%	±20.8%	
Harmed Adolescents	10	1.1%	1.0%	±18.5%	±24.6%	±28.2%	±30.2%	±30.8%	
Total	900	100%	100%	±2.0%	±2.6%	±3.0%	±3.2%	±3.2%	

Limitations

Data collected from adolescents in this survey was self-reported and uncorroborated. Therefore, the resulting information may not be an accurate reflection of adolescents gambling experiences or beliefs. While studies conducted within the broader addiction area suggest self-reported data are reliable (Del Boca and Darkes, 2003; Gruenewald and Johnson, 2006), the findings of this survey deviate considerably from previous research on adolescent gambling behaviour. In contrast to other studies, this survey has found lower rates of at-risk and problem gambling behaviour. However, there were concerns that other surveys may have been misinterpreted by respondents, resulting in an exaggeration of the prevalence of problem gambling among adolescents (Appendix B). Therefore, the DSM-IV-MR-J adolescent problem gambling screen was selected to confirm the results of adolescents identified in the Harmed category in FYGRS V1.2.

The report was based on the use of youth self-reported survey data administered by telephone. Every attempt was made to ensure respondent privacy during data collection (e.g., youth were asked to complete in a private area, call-backs were scheduled to permit survey completion to facilitate privacy during data collection, data was collected using dichotomous agree/disagree types of responses for sensitive items). Response rates were tracked by age and sex to ensure a representative sample and control for non-response bias. Moreover, the interviewing staff received advanced training from trained clinicians for conducting interviews with adolescents including a special module provided by counsellors at IWK Children's Hospital Addiction Services program (IWK Choices). However, it was necessary to obtain parental permission in advance of youth taking part and this may have influenced respondent's feelings of anonymity.

The results are generalizable to youth living in private and family households throughout Nova Scotia, which does not include youth with physical, emotional or mental health challenges that would preclude their participation in a telephone survey or high-risk or marginalized adolescent populations such as institutionalized or homeless youth. These populations may differ from mainstream adolescents in terms of gambling behaviours, risk and impact, but fall beyond the scope of the current study.

Additionally, given the time of year of the study, adolescents aged 18 years were found under-represented based on random regional household sampling techniques largely due to the greater tendency for youth of this age to be attending post-secondary institutions and/or living outside of the home. According to 2010 Statistics Canada data, those aged 18 years comprised 17.8% of the population 13-18 years of age in Nova Scotia yet only accounted for 12.5% of the eligible respondents on the household sampling screen and 9.8% of the overall adolescent sample.³ The majority of participating 18 year olds were attending high school at the time of the survey (63.4%), 15.7% were out of school, and 20.9% were attending a post-secondary institute. This latter group represented only 3.6% of all youth taking part in the study. Therefore, the current study represents youth 13-18 years of age living in family households. A separate study examining outcomes for college and university students would better address the unique characteristics of this group of youth.

Reporting

The report for the 2011 Nova Scotia Adolescent Gambling Survey summarizes the key findings from the study. Detailed data tables and supporting information are in Appendix E. In the report, the data was segmented and compared using the Focal Youth Gambling Risk Screen as well as profiled by sex (male versus female), age category (13- 14 years; 15-16 years; and 17=18 years), Health Zone and, when appropriate, by urban versus rural area of residence.

Funding Disclosure

The Nova Scotia Department of Health and Wellness funded this project through an open competitive tendering process.

3 Originally, the survey data was weighted using the most current figures available for youth living in private and family households across Nova Scotia, the 2007/08 Nova Scotia School Board estimates by Health Zone. Following completion of the analysis, NSDHW obtained 2010 Statistics Canada data by age category, sex and by Health Zone. This new information was used to derive 48 different weights and estimates were compared between the current figures in the report and the revised estimates based on the updated weights. There were no significant differences detected in the risk estimates for FYGRS V1.2 using either weighting method.

Section 2: Results

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Detailed information was collected from adolescents taking part in the study regarding their gambling involvement in three primary forms of gambling: Commercial/Organized Gambling, Non-Commercial/Informal Gambling, and Online/Internet Gambling.

TABLE 6 • Definition of the Different Forms of Gambling

Type of Gambling	Definition	Description
Organized / Commercial Gambling	Refers to gambling activities played for money and that generate funds and/or business for those operating the activity. This includes provincially regulated and age-restricted gambling available for adults in the province, as well as, regulated, non-restricted commercial gambling and organized fundraising.	17 different forms including: arcade games to win prizes; 50/50 tickets; charity or fundraising raffles; bingo in bingo halls, on TV & charity bingo; ALC weekly lottery tickets, daily lottery tickets & instant lottery tickets; VLTs; casino gambling; ALC's sports lottery (Sport Select, ProLine); other sports pools or sports betting; horse racing, harness racing & dog racing; sponsored poker tournaments.
Non-Commercial / Informal Gambling	Refers to gambling using money or items of value on gambling activities that are largely self-organized or occur between family, friends, or acquaintances at home, school, or in other venues and areas that youth congregate.	13 different forms including: poker in-person with friends/family; other card games; sports pools; betting on outcomes for video games or arcade games; betting on outcomes for local non-professional sports; betting on outcomes for personal games of skill (darts, pool, golf); 'bloody knuckles'; coin pitching; dice games; personal bets or dares; outcomes of 'schoolyard' fights.
Online / Internet Gambling	Refers to gambling activities that involve wagering for money or other items of value and occur online or through the internet using a computer or handheld device (i.e., mobile/cell phone).	7 different forms including: ALC lottery tickets on PlaySphere; ALC Sport Select ProLine on PlaySphere; online bingo; online poker; other online sports betting; online casino gambling; online wagering with virtual money or points that can be redeemed for items of value. In addition, youth were asked about internet gambling practice sites; gambling on Facebook, MySpace and other social network sites.

During the survey, all adolescents were asked to only think about gambling they had paid for using their own money or other personal items of value unless otherwise specified.

In the survey, adolescent gambling was defined as follows:

"...any activity that involves spending money or betting something of value so that you can have a chance of winning money or gaining something else of value. While money is often used for gambling other items of value that young people report they can bet or win include prizes, trips, personal favours or services, drugs, cigarettes, homework, electronics, jewellery or other personal belongings".

Results are presented for both total adolescents as well as among those who gambled in the past year.

Percent of Total Youth - tells us the impact for all youth in the province of Nova Scotia. This is useful for placing results in the context of youth at large in the population. For example:

3.5% of all youth in Nova Scotia scored for Advanced Gambling Risk or Harm

Percent of Past Year Gamblers – tells us the impact for youth once they are gambling. This is useful for placing the results in the context of youth who gamble in the population. For example:

≈1 in every 10 youth (10.8%) who gambled in the past year scored for Advanced Risk or Harm.

Gambling Risk & Harm among Adolescents in Nova Scotia

Adolescents taking part in the survey were assigned to one of five risk levels based on their score using the Focal Youth Gambling Risk Screen (FYGRS V1.2).

FIGURE 4 • 2011 Risk and Gambling Harm among Adolescents in Nova Scotia Using FYGRS V1.2

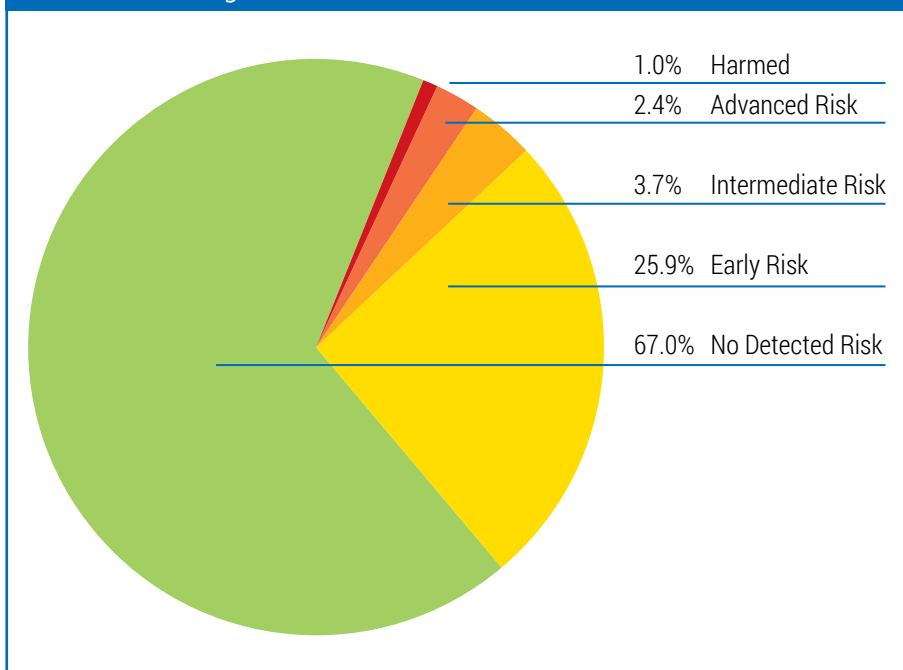


TABLE 7 • Summary Profile of Adolescent Gambling Risk and Harm in Nova Scotia Using FYGRS V1.2

Risk Level	% NS Youth	Description
Level I No Detected Risk (n=592)	67.0% ± 3.05% Range: 64.0%-70.0%	<ul style="list-style-type: none"> • Did not score on any of the risk or harm indicators comprising FYGRS V1.2; • Evenly divided between males (51.6%) and females (48.4%); • Tended to be younger with 45% aged 13-14 years old; and, • 23.7% had gambled in the past year.

Level II Early Risk (n=241)	25.9% $\pm 2.84\%$ Range: 23.1%-28.7%	<ul style="list-style-type: none"> • Evenly divided between males (49.4%) and females (50.6%); • On average older than those at No Detected Risk; • 38.2% had gambled in the last year; • 48.6% scored for risky beliefs, 46.5% were being influenced to gamble by friends or family, 26.4% had high exposure to opportunities to gamble, and 10.2% had adults in their life that facilitated their gambling; and, • None exhibited higher risk motives, behaviours, or any negative impacts.
Level III Intermediate Risk (n=35)	3.7% $\pm 1.23\%$ Range: 2.5%-4.9%	<ul style="list-style-type: none"> • More likely to be male (61.8%); • Majority 15-16 years of age (54.3%); • 82.9% had gambled in the past year, 17.1% were frequent gamblers (4+/month); and, • 77.1% had risky gambling motives, 40.0% scored for risky beliefs, 37.1% had risk due to the influence of significant others, 25.7% reported impaired control during play; • Not yet exhibiting harm (negative consequences) so positioned as a pre-harm group.
Level IV Advanced Risk (n=22)	2.4% $\pm 0.99\%$ Range: 1.4%-3.4%	<ul style="list-style-type: none"> • Majority male (65.2%); • 78.3% were 15 years of age or older; • 100% gambled in last year and 54.5% were frequent gamblers; • 52.0% reported negative impacts for their lifestyle (30.4%) or mental health (27.3%); • Most were engaging in high risk gambling behaviours (65.2%), held risky beliefs (56.5%), scored for risky motives (60.9%), had impaired control during play (30.4%), reported high rates of exposure to gambling opportunities (56.5%), and were exposed to adults who facilitated their gambling (34.8%).
Level V Harmed Adolescent (n=10)*	1.0% $\pm 0.65\%$ Range: 0.4%-1.6%	<ul style="list-style-type: none"> • Most were male (≈ 8), with 6 of 10 aged 17-18 years; • All had negative consequences in two or more areas of their life, especially their life style, mental health, and financially; • 4 scored for persistence, a characteristic associated with problem gambling; • Most had impaired control (8), high opportunities to gamble (9), had influence from others to gamble (9), had adults and peers in their life that facilitated their gambling (8) and held risky beliefs about gambling (8).

* Within segment results should be treated with caution due to small sample size.

■ Adolescents with No Detected Risk

The majority of youth in Nova Scotia (67.0%; ± 3.05%; Range: 64.0%-70.0%) were found to have No Detected Risk for gambling harm.

- Adolescents with No Detected Risk did not score on any of the risk or harm indicators comprising FYGRS V1.2.
- Adolescents at No Detected Risk were equally likely to be comprised of males (51.6%) or females (48.4%).
- On average these youth tended to be younger than those scoring for any risk or harm (mean=14.9 years; median=15 versus mean=15.7 years; median=16 years).
- Less than one quarter of these adolescents had gambled in the past year (23.7%).
- Although adolescents found to be at No Detected Risk currently fall below the threshold for risk, any changes in their circumstances or the gambling environment could elevate their personal risk for developing harm.

■ Adolescents at Early Risk

About one in four adolescents in Nova Scotia scored for Early Risk (25.9%; ± 2.84%; Range: 23.1%-28.7%).

- About one in four adolescents in Nova Scotia were scoring at Early Risk (25.9%).
- Adolescents at Early Risk were divided between males (49.4%) or females (50.6%).
- These youth tended to be older than those at No Detected Risk.
- Adolescents at Early Risk have some characteristics that make them susceptible to developing gambling harm, but none were exhibiting higher risk motives, behaviours, or any negative impacts:
 - Almost half reported risky beliefs (48.6%); 46.5% were being influenced to gamble by peers or significant others in their lives;
 - 26.4% had high exposure to opportunities to gamble;
 - 10.2% had adults in their life that actively facilitated youth involvement in gambling.
- Only 38.2% had gambled in the last year, but the remaining 61.8% were still triggering on risk indicators that if they should they take up gambling are associated with the development of risky gambling motives and practices; both were found to be important precursors of gambling harm.

■ Adolescents at Intermediate Risk

There were 3.7% ($\pm 1.23\%$; Range: 2.5%-4.9%) of youth in Nova Scotia who were classified as being at Intermediate Risk.

- Adolescents at Intermediate Risk were more likely to be male (61.8%) with 38.2% female.
- Most adolescents at Intermediate Risk were 15-16 years of age (54.3%).
- These youth have not yet developed significant harm or consequences but did trigger on a number of other risk indicators:
 - 77.1% had risky motivations for gambling;
 - 40% held risky beliefs about gambling;
 - 37.1% had risk due to the influence of significant others;
 - 25.7% had trouble stopping once they were gambling (i.e., Impaired Control: Continue); and,
 - 17.1% were gambling four or more times in the past month (Frequent Gamblers).
- The most common reasons given for gambling by those scoring at Intermediate Risk levels related to the appeal of winning, 'bragging rights' and thrill of competition (65.7%) as well as a strong drive to win prizes (60.9%) or money (42.9%);
- Compared to those in the other risk segments, adolescents at Intermediate Risk were less likely to report that adults or peers had played a role in facilitating their gambling (20%).

■ Adolescents at Advanced Risk

There were 2.4% ($\pm 0.99\%$ ' Range: 1.4% - 3.4%) of youth in Nova Scotia who were classified as being at Intermediate Risk.

- Similar to adolescents scoring at Intermediate Risk, the majority of those at Advanced Risk were male 65.2%.
- Those at Advanced Risk tended to be older with most 15 years of age or older (78.3%) although almost one in every five was 13-14 years of age.
- Half (52.0%) reported negative impacts due to gambling for either their lifestyle (30.4%) or mental health & well-being (i.e., Torment: 27.3%).
- Adolescents in this group also triggered on most of the risk indicators:
 - 65.2% were engaging in high risk gambling behaviours (Risky Practices);
 - 56.5% held risky beliefs;

- 60.9% scored for risky motives;
- 60% had trouble stopping once they started gambling (Impaired Control: Continue);
- 65.2% scored for high rates of exposure to gambling opportunities;
- 54.5% had gambled four or more times in the 30 days;
- 52.2% were at risk due to exposure to the influence of others;
- 34.8% were exposed to adults and/or peers who facilitated their gambling;
- 8.7% exhibited impaired control finding it difficult to resist gambling when such opportunities arise (Impaired Control: Begin).

■ Harmed Adolescents

Overall 1.0% ($\pm 0.65\%$; Range: 0.4%-1.6%) of youth aged 13-18 years in Nova Scotia were identified as Harmed Adolescent Gamblers.

- All Harmed adolescents were experiencing negative consequences in two or more areas of their life:
 - 100% scored for negative consequences for their life style;
 - 100% had negative consequences for their mental health and well-being (Torment);
 - 70% had negative financial consequences;
 - 44% had negative personal consequences; and,
 - 10% had negative social consequences.
- In addition, 44.4% scored for persistence, a characteristic associated with problem gambling when linked to negative consequences.
- While the samples size for Harmed adolescents (n=10) was too small to yield reliable profile estimates general patterns emerged that were consistent with the profiles for the other higher risk segments:
 - The vast majority were male (77.8%);
 - All were over 15 years of age with 60% aged 17-18 years;
 - All Harmed adolescents scored as having risky gambling behaviours and risky motivations for gambling;
 - Most were also found to have impaired control (80%), had high opportunities to gamble (90%), were being influenced by others to gamble (90%), had adults in their life that facilitated their gambling (77.8%), and held risky beliefs about gambling (77.8%);
 - About one-third also scored as being preoccupied with gambling.

Harm Indicator for Adolescents in Nova Scotia

Classification of Harmed adolescents was compared to outcomes for the DSM-IV-MR-J to assess FYGRS V1.2's performance in capturing problem gambling within the Harm construct for FYGRS V1.2.

TABLE 8 • Relationship between DSM-IV-MR-J Adolescent Problem Gamblers and FYGRS V1.2 Harms Indicators

	DSM < 4 (n=891)	DSM ≥4 (n=9)	All Adolescents (n=900)
% of Population	99.0%	0.9%	100%
FYGRS V1.2 Harm Indications (< 2)	99.8%	11.1%	99.0%
FYGRS V1.2 Harm Indications (≥2)	0.2%	88.9%	1.0%
Total Percent	100%	100%	100%

Symmetric Measures

		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Measure of Agreement	Kappa	.841	.091	25.916	.000
N of Valid Cases		899			

a Not assuming the null hypothesis.

b Using the asymptotic standard error assuming the null hypothesis.

c Based on normal approximation.

The overlap between the two instruments in identifying Harmed adolescents (FYGRS V1.2) versus adolescent Problem Gamblers (DSM IV-MR-J score ≥ 4) was high with a significant Kappa of .841, well above the criterion of .75 set for signalling strong agreement between measures (Fleiss, Levin, & Paik, 2003).

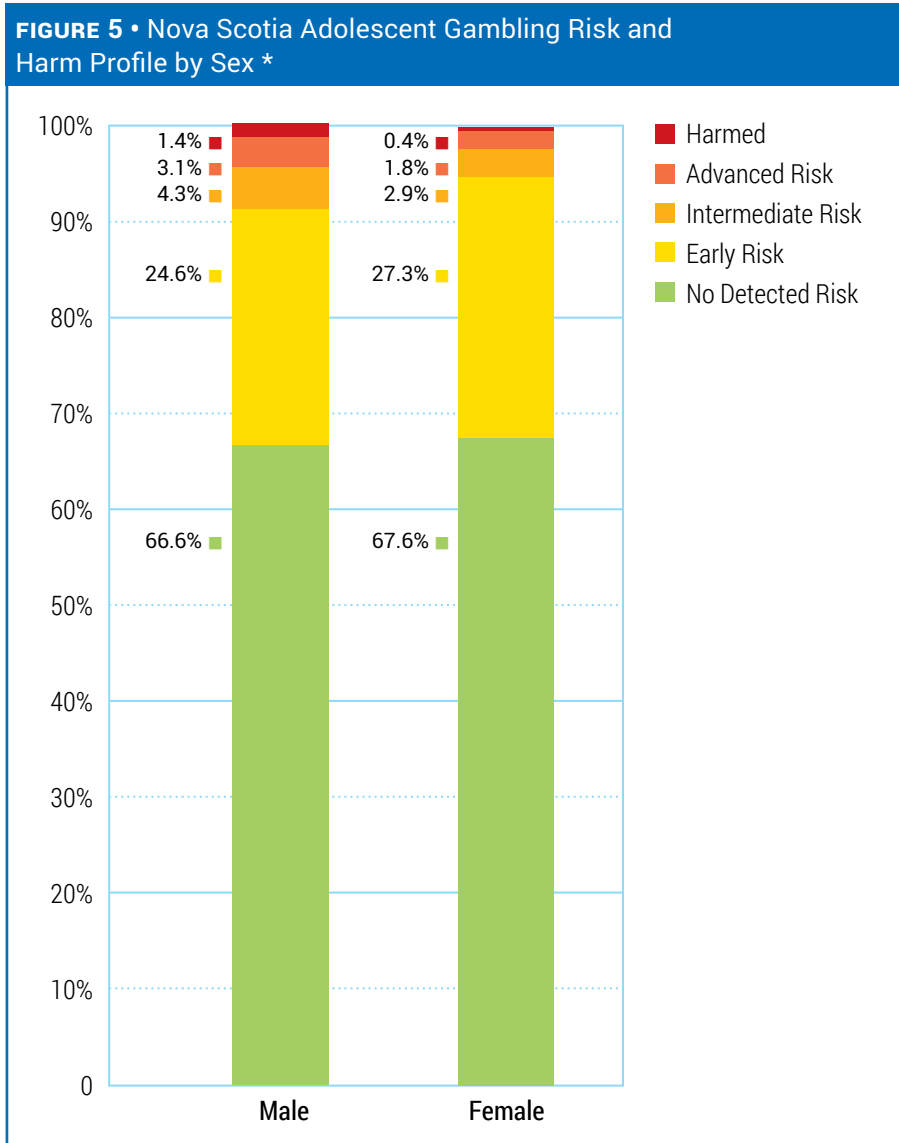
Using the criteria of ≥ 2 Negative Consequences to designate a youth as displaying Harm resulted in capturing 88.9% of those identified by the DSM IV-MR-J as Problem Gamblers (DSM Score ≥ 4); the DSM IV-MR-J classified 0.9% of Nova Scotia youth as being probable Problem Gamblers and FYGRS V1.2 classified 1.0% of youth as Harmed. Additionally, all youth found to score for both Persistence as well as Harm using FYGRS V1.2 were also classified as Problem Gamblers by the DSM IV-MR-J.

Demographic Risk Profiles

To gain insight about key demographic characteristics associated with gambling risk and harm in Nova Scotia, the percent of adolescents scoring in each risk category was profiled and compared by sex, age, and Health Zone.

Gambling Risk Profile by Sex

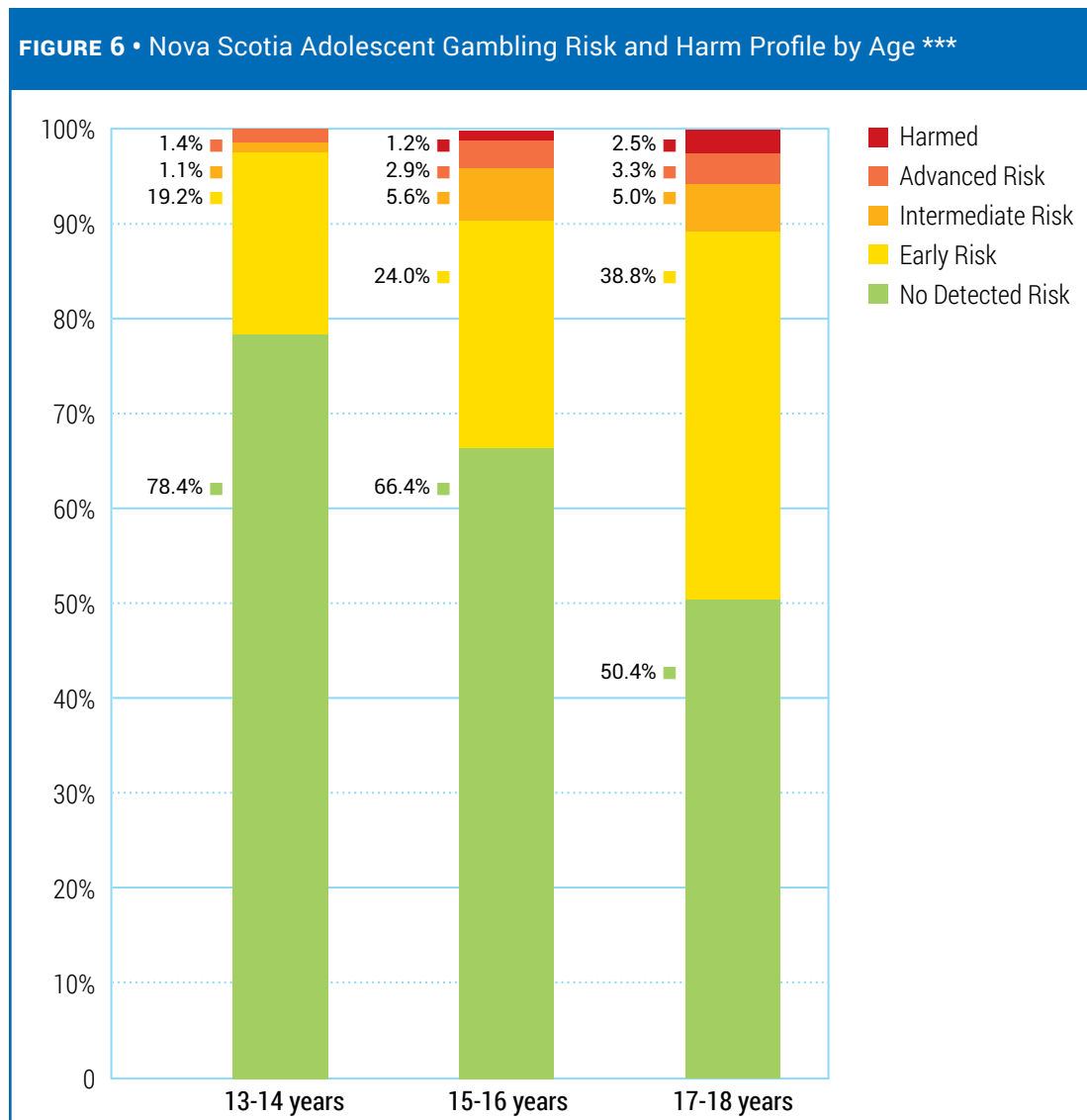
- Males had significantly higher rates of those scoring at high risk levels (i.e., Intermediate to Harmed levels - Males: 8.8% versus Females: 5.1%).



* $P < .10$ ** $p < .05$ *** $p < .001$

Gambling Risk Profile by Age Category

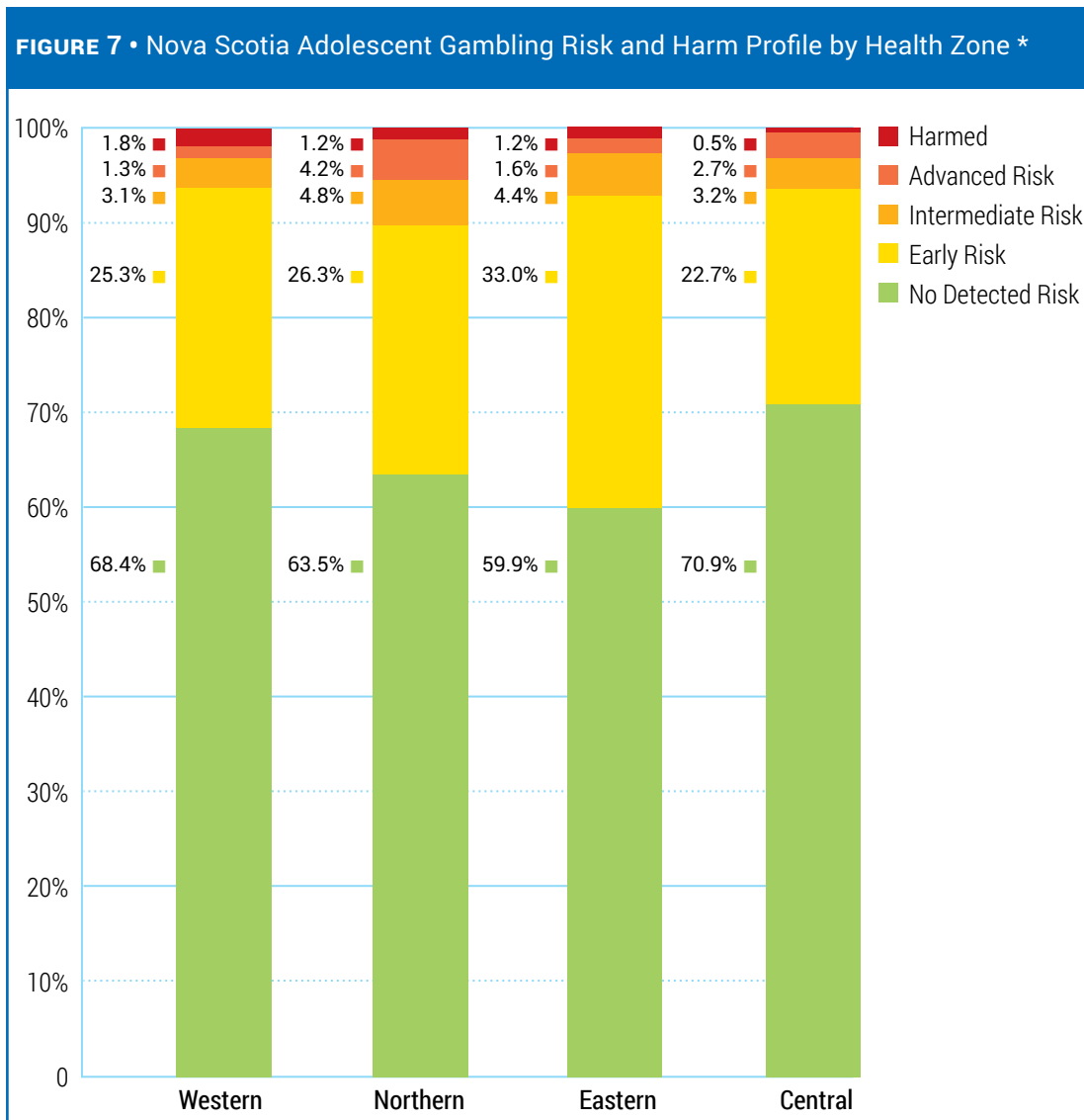
- The percentage of youth scoring for risk and harm increased with age, with half of adolescents aged 17-18 years (49.6%) scoring at some level of risk for gambling harms compared to 33.7% among those aged 15-16 years and 21.7% among those 13-14 years.
- The severity of gambling impacts was also significantly higher among adolescents 15 years of age or older with about one in ten scoring at Intermediate Risk or higher (15-16 years: 9.7%; 17-18 years: 10.8%) versus 2.5% for those aged 13-14 years.



*P < .10 **p < .05 ***p < .001

Gambling Risk Profile by Health Zone

- Rates of those scoring at any level of risk (Early Risk +) tended to be higher among adolescents living in Northern (36.5%) or Eastern (40.1%) Health Zones of Nova Scotia compared to adolescents living in the Western (31.6%) and especially the Central (29.1%) Health Zones.
- Most of the regional differences observed were due to higher rates of Early Risk in the Eastern Health Zone (33.0%), whereas severity of risk tended to be higher in the Northern Health Zone (Advanced Risk to Harmed: 5.4%)



*P < .10 **p < .05 ***p < .001

Risk Indicators for Adolescents in Nova Scotia

In addition to categorizing youth into one of five risk categories for tracking gambling prevalence, FYGRS V1.2 also permits analysis and tracking of each of the risk indicators comprising the FYGRS V1.2 instrument.

FYGRS V1.2's Risk Indicators (i.e., constructs) sequentially relate to development of risky gambling practices (e.g., identification of pre-harm risk) which in turn relate to the development of negative consequences and persistence (e.g., identification of gambling harm and problems). This makes the indicators particularly useful for prevention and harm reduction applications.

Table 8 below presents the percent of adolescents in Nova Scotia that scored for risk or harm on each of the key risk and harm indicators, first for all youth taking part in the survey and then for those segmented into each of the five FYGRS V1.2 risk categories.

TABLE 9 • Profile of FYGRS V1.2 Key Risk Indicators for Total Adolescents and by Risk Category*						
Risk Indicators (e.g., FYGRS V1.2 Constructs)	All Adolescents	No Detected Risk	Early Risk	Intermediate Risk	Advanced Risk	Harmed Adolescent
Unweighted N's	N=900	N=592	N=241	N=35	N=22	N=10
% of Youth Population	100%	67.0%	25.9%	3.7%	2.4%	1.0%
Adults Facilitate Gambling	5.0%	0.0%	10.2%	20.0%	34.8%	77.8%
Influenced by Others	15.0%	0.0%	46.5%	20.6%	52.2%	90.0%
Opportunities to Gamble	10.7%	0.0%	26.4%	37.1%	65.2%	90.0%
Risky Cognitions: Beliefs	16.2%	0.0%	48.6%	40.0%	56.5%	77.8%
Preoccupation: Desire	0.3%	0.0%	0.0%	0.0%	0.0%	33.3%
Risky Cognitions: Motives	5.4%	0.0%	0.0%	77.1%	60.9%	100%
Gambling Frequently (4+ Month)	2.9%	0.0%	0.0%	17.1%	54.5%	90.0%
Impaired Control: Continue	2.3%	0.0%	0.0%	25.7%	30.4%	60.0%
Risky Practices	2.6%	0.0%	0.0%	0.0%	65.2%	100%
Impaired Control: Begin	1.1%	0.0%	0.0%	0.0%	8.7%	80.0%
Preoccupation: Obsession	.2%	0.0%	0.0%	0.0%	0.0%	20.0%
Harms: Any Negative Consequences	1.8%	0.0%	0.0%	0.0%	52.0% Single Harm	100% 2+ Harms
Persistence	0.4%	0.0%	0.0%	0.0%	0.0%	44.4%

* Within segment results should be treated with caution due to small sample sizes.

Response for each of the key risk indicators was examined to gain insight about the factors influencing gambling risk and harm for youth in Nova Scotia.

How to Read Table 9: The highlighting in the table illustrates which constructs youth must trigger on to be assigned to each of the five categories comprising FYGRS V1.2.

Adolescents are assigned to each risk and harm category based on how they score on the 13 indicators (i.e., constructs) starting with the identification of Harmed adolescents and working down to the classification of those who do not trigger on any risk indicators (i.e., No Detected Risk). This means there are a unique set of indicators associated with assignment to each risk category.

For example, to be classified as Harmed, youth must score as having negative impacts in two or more life areas and/or report persistence (e.g., continuing to gamble despite experiencing negative impacts). Regardless of how they score on any other indicator, youth that trigger on these two indicators are assigned to the Harmed category.

Youth who do not trigger for Harm are then checked for Advanced Risk. The Advanced Risk indicators consist of Risky Behaviours (e.g., chasing losses, cheating, chasing wins, using fake id), Impaired Control: Begin (e.g., unable to resist going to gamble), Preoccupation: Obsession (e.g., constantly thinking about gambling or ways to gamble) and the experience of harm or negative consequence in only one of the five life areas. Again, if a youth does not score for Harm but triggers on any Advanced Risk indicators they are assigned to the Advanced Risk category regardless of other indicators they trigger on.

Once FYGRS V1.2 assigns youth to the Harm and Advanced Risk categories, the remaining adolescents are checked for Intermediate Risk using the Intermediate Risk indicators only. Intermediate Risk indicators include Preoccupation: Desire (e.g., wishing they could gamble more often), Risky Cognitions: Motives (e.g., gambling for high-risk reasons such as escape, self-esteem, status), Gambling Frequency (e.g., gambling 4+ times per month), and Impaired Control: Continue (e.g., inability to stop gambling once started). Again, if an adolescent does not score for Harm or Advanced Risk but triggers on any of the Intermediate Risk indicators they are assigned to the Intermediate Risk category regardless other indicators they may have triggered on.

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Any youth who does not score for Harm, Advanced, or Intermediate Risk is then checked for Early Risk. Specifically, Adult Facilitation of Gambling (e.g., adults permit or help youth to gamble), Influence of Others (e.g., peers and family regularly gamble), Opportunities to Gamble (e.g., youth have easy access to gambling if they want to take part), and Risky Cognitions: Beliefs (e.g., misleading or inaccurate beliefs that lead to high risk motives for gambling). If an adolescent has not been assigned to any of the other risk categories but does qualify on one or more of the Early Risk indicators then he or she will be assigned to the Early Risk category.

Those youth who did not trigger on any of the risk indicators are assigned to the No Detected Risk group.

Facilitation of Gambling by Adults & Peers

Adults/Peer Facilitation of Gambling is a formative construct comprised of eight items representing different sources of influence that adults could exert on youth to encourage or facilitate their involvement in gambling. Adolescents had to endorse three or more of these items before they were considered at risk due to adult/peer facilitation of gambling. Such events had to have occurred in the past year and consisted of the following: Youth gambling with adults; Adults helping youth to gamble on the internet; Adults betting money on gambling for youth; Adults paying for some forms of gambling for youth; Adults hosting gambling events youth attended or participated in; Peers hosting gambling events youth attended or participated in.

Percent of Adolescents at Risk Due to Adult Facilitation of Gambling

- Overall, 5.0% of adolescents in Nova Scotia were found to be at risk due to facilitation of youth involvement in gambling by adults or other peers.
- Among those adolescents who had gambled in the past year, 14.0% triggered for risk due to exposure to adults or peers who helped or encouraged them to gamble.
- The percent of adolescents scoring at risk due to adult/peer facilitation of gambling increased as risk for gambling harm went up (Early Risk: 10.2%; Intermediate Risk: 20.0%; Advanced Risk: 34.8%; and Harmed: 77.8%) suggesting this is an important area for education and prevention.
- Adolescents over 15 years of age were significantly more likely to be at risk due to adult facilitation of gambling (15-16 years: 6.2%; 17-18 years: 7.1% versus aged 13-14 years: 2.5%).
- There were no differences observed by sex.

- In terms of Health Zones, there were no significant differences observed at the 95%+ confidence level. However, at the 90%+ confidence level, adolescents living in the Northern Health Zone were more likely to cite instances when adults/peers had facilitated or actively encouraged adolescent gambling (2.7% versus 6.6%; $p=.08$).

Percent of Adolescents Reporting Any Adult/Peer Facilitation of Gambling

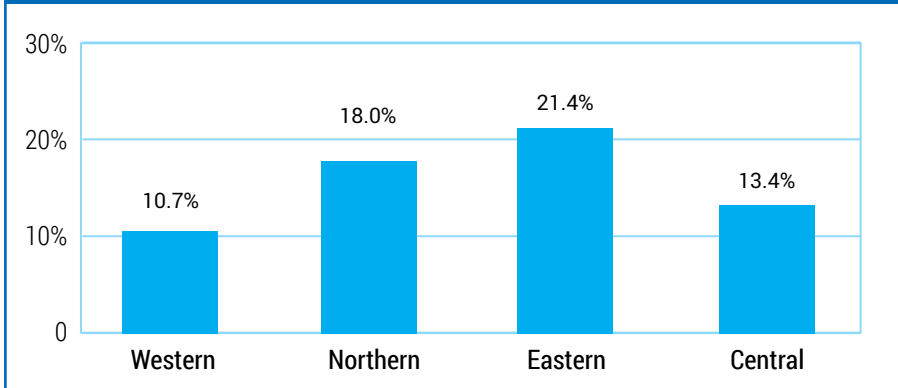
- Overall, 21.6% of youth in Nova Scotia reported an instance of adult facilitation of gambling in the past year.
 - 12.2% indicated adults had paid for some forms of gambling for youth;
 - 10.3% gambled with adults who were engaged in a gambling activity;
 - 5.0% reported that adults had placed bets for them;
 - 5.2% had attended a gambling event hosted by an adult;
 - 3.3% had taken part in a gambling event hosted by adults;
 - 3.4% indicated they were permitted to attend a gambling event hosted by youth;
 - 3.1% had taken part in a gambling event that youth were permitted to host;
 - 0.4% reported that an adult had helped them to gamble on the internet, an event mentioned only by those scoring for Advanced Risk (4.9%) or Harm (30%).
- To gain additional insight about the specific types of gambling adults were financing or facilitating for youth, all those taking part in the study were asked whether adults had paid for or supported their involvement in nine different types of gambling. Over the past year:
 - 12.2% of youth reported that adults had purchased lottery tickets for them;
 - 11.9% had been taken to Bingo games by adults;
 - 7.6% of youth reported adults had included them in poker games played for money;
 - 4.1% reported that adults had gambled in front of them;
 - 4.0% indicated that adults had included them in sports pools;
 - 2.0% had adults place sports bets for them (e.g. place bets on the outcomes of sporting events);
 - 0.4% reported adults had taken them while adults were playing VLTs;
 - 0.1% were taken to a casino by an adult;
 - 0.1% had adults gamble online with them.

Influence by Others

Influence of Others is a formative construct comprised of six different sources that may exert gambling influence on adolescents. To meet the criteria for being at risk due to the Influence of Others an adolescent had to report exposure to three or more of these sources. Sources of influence included: Family members who gamble regularly; Exposure to other adults who gamble regularly; Brothers, sisters or cousins who gamble; Other people in an adolescent's life who sometimes bully or push them to gamble; Other people in an adolescent's life who encourage them to gamble; Hanging out with friends or peers who gamble.

Percent of Adolescents at Risk Due to Influence by Others

- Overall, 15.0% of adolescents in Nova Scotia were found to be at risk due to the influence of others as it relates to gambling.
- Among those youth who gambled in the past year, 23.3% triggered as being at risk due to the influence of significant others such as their peers or family members.
- There were some differences in the degree of influence experienced by those in each risk category:
 - Almost all Harmed adolescents cited exposure to significant family members or friends who gambled or encouraged them to gamble;
 - 46.5% of youth at Early Risk were at risk due to the influence of others, a rate similar to those scoring at Advanced Risk (52.2%);
 - In contrast, only about one in five of those at Intermediate Risk triggered on this construct (20.6%) suggesting risk in this category is less often due to the high-risk influence of others.
- Risk due to the influence of others increased with age (13-14 years: 7.4%; 15-16 years: 14.4%; 17-18 years: 27.3%).
- There were no significant differences observed by sex.
- Compared to youth living elsewhere in the province (10.7%-13.4%), Adolescents living in the Eastern (21.4%) and Northern (18.0%) Health Zones of Nova Scotia were significantly more likely to be experiencing risk due to the influence of others than those living in Western (10.7% or Central (13.7%) Health Zones.

FIGURE 8 • Percent of Adolescents with Risk Due to the Influence of Others by Health Zone **

* $p < .10$; ** $p < .05$; *** $p < .000$

Percent of Adolescents Reporting Any Influence by Others

- Overall, 51.7% of youth reported exposure to any gambling influence from others as measured in the survey, with 28.8% noting influence from more than one source:
 - 38.5% of youth knew adults who gambled on a regular basis;
 - 23.3% were exposed to gambling through siblings or cousins who gamble;
 - 20.0% reported exposure to family members who gamble regularly;
 - 16.1% reported 'hanging out' with friends who were gambling;
 - 1.2% reported people in their lives who actively encourage them to gamble;
 - 0.2% were bullied or pushed to gamble by others.
- Exposure to any one of these sources of influence was higher among those scoring at any level of risk and harm versus those who had No Detected Risk.
- It is noteworthy that the tendency to 'hang out with friends who gamble' was the only item that increased with risk; this is also the only item youth can exert direct control over (e.g., can pick their friends but can't pick family or control exposure to adult behaviour). It is unclear if seeking out friends who gamble is a causal factor or a symptom of adolescent gambling risk or harm.

Opportunities to Gamble

Opportunities to Gamble is a formative construct comprising 10 separate items representing different access points for adolescent gambling. Adolescents had to endorse six or more of these items before they met the criteria for risk due to access to gambling opportunities. Adolescents were asked whether or not they could choose to take part in gambling activities including: Able to purchase lottery tickets; Able to sit in with friends or family on poker games played for money; Have places they can go to gamble for money, prizes or other items of value to me; Could gamble at school; Could gamble at home; Could gamble when out with friends; Could gamble on the internet on practice sites or with play money or points; Could gamble on the internet with real money; Could gamble on gambling machines (video lottery terminals); Could gamble for money on a cell phone or a mobile device.

Percent of Adolescents At Risk Due to Opportunities to Gamble

- Overall, 10.7% of adolescents in Nova Scotia were found to be at risk due to their level of access to gambling opportunities.
- Among those who gambled in the past year, 21.9% scored as having risk due to high accessibility to gambling opportunities.
- Opportunities to gamble increased by risk moving from 26.4% among those at Early Risk to 37.1% for those at Intermediate Risk, 65.2% for those at Advanced Risk, and 90% among Harmed youth in the province.
- Although those at higher levels of risk were more likely to report risky access to gambling, it is notable that, due to their size in the population, youth scoring at Early Risk for gambling harm in Nova Scotia comprised the majority (63.7%)⁴ of those with high-risk access to gambling.
- Risk due to access to gambling was significantly higher for male adolescents in the province (13.0% versus females: 7.9%).
- Risky access to gambling also increased strongly with age (13-14 years: 2.5%; 15-16 years: 10.0%; 17-18 years: 23.7%).
- There were no differences among any of the Health Zones in terms of access.

4 This figure was calculated by determining what percent of those with high access to gambling fall into the Early Risk category. For example, 25.9% of youth were at Early Risk and 26.4% of these youth reported high-risk access to gambling opportunities, which represents 6.8% of youth or 63.7% of all those with high-risk access to gambling opportunities (6.8%/10.7%).

Percent of Adolescents Reporting Any Opportunities to Gamble

- In general, the majority of youth in Nova Scotia (64.7%) reported access to at least one opportunity to gamble, and, in all cases, gambling accessibility as measured in the current study increased with risk and harm:
 - 44.5% reported they could gamble on practice sites on the internet or with 'play' money if they wanted;
 - 28.1% had places they can go to gamble for prizes or other items of value;
 - 22.8% could gamble at school if they wanted;
 - 23.4% could gamble at home if they wanted;
 - 25.0% could gamble when they were out with their friends;
 - 19.9% could gamble online with real money if they chose to;
 - 17.2% reported they could gamble on their cell phone for money;
 - 9.3% had friends or family who let them sit in on poker games played for money;
 - 8.1% of youth could buy lottery tickets if they wanted to;
 - 4.8% said they could gamble on VLTs or slots if they wanted to.

Risky Cognitions: Beliefs

There were 13 beliefs that were found to contribute to gambling risk for adolescents and therefore comprised the Risky Cognitions: Beliefs construct. To be classified at risk due to risky beliefs, a youth had to endorse three or more of the 13 beliefs measured. Typically when using Structural Equation Modeling and PLS analysis there is only a weak direct causal relationship found between risky beliefs and gambling harm. However, there is a significant relationship between risky beliefs and risky motives for gambling, which in turn heavily influences the likelihood of youth engaging in risky gambling practices and developing gambling harms. Therefore, risky beliefs are precursors for development of risky reasons for gambling. The belief statements comprising FYGRS V1.2 are included below under Percent of Adolescents reporting Risky Beliefs.

Percent of Adolescents At Risk Due to Risky Beliefs

- Overall, 16.2% of all adolescents in Nova Scotia met the criteria for holding beliefs about gambling that put them at risk.
- Among those who gambled in the past year, just over one in five (21.5%) scored at risk due to their beliefs about gambling.

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- It is notable that 13.6% of adolescents who did not gamble in the past year also triggered for risk on this construct, which suggests that opportunities exist to correct misconceptions youth have about gambling before they become actively involved in gambling.
- The percent of youth at risk due to their beliefs about gambling was significantly higher among those at any level of risk using FYGRS V1.2 (Early Risk (48.5%), Intermediate Risk (40.0%), and Advanced Risk (56.5%)) with most of those who were Harmed (77.8%) triggering on this risk indicator.
- There was no difference observed by sex, age, or Health Zone, suggesting risky beliefs occur fairly evenly over the youth population in Nova Scotia. Thus, messaging intended to address youths' misperceptions about gambling can also be broadly communicated.

Percent of Adolescents Reporting Any Risky Beliefs

- In total, 57.7% of adolescents agreed with at least one of the risky beliefs measured.
- Endorsement of risky beliefs by adolescents in Nova Scotia consisted of the following:
 - 34.8% of youth in Nova Scotia believed that arcade gaming machines played for prizes are games of skill not gambling. Even among those with No Detected Risk, 29.8% think this is true which increased to a rate of 40.0% or higher among those adolescents scoring at any levels of risk;
 - 20.7% believed the odds of winning when you are playing online on practice internet sites for points or with 'fake' money are the same as when you gamble online with real money. This belief was endorsed by about 15.0% of those at No Detected Risk and was twice as high among those falling in the other risk segments (32.2% to 44.4%);
 - 19.1% thought some people are luckier than others and they have a better chance of winning, a belief held by more than one-third of those scoring at any level of risk for gambling harm versus only 9.8% of those with No Detected Risk;
 - 18.7% believed that when playing on-line, players cannot manipulate the game to give themselves an unfair advantage, which ranged from 13.6% among those at No Detected Risk to 28.6% for those at Early Risk and 40.0% for those in the Harmed category. This may imply a belief that online gambling is less prone to cheating, and therefore safer, than other forms of gambling;

- 17.4% believed many people make a good living as poker players; this was especially pronounced among those scoring at Early (30.6%) and Intermediate Risk (37.1%) and over half at Advanced Risk or Harmed compared to 9.1% among the No Detected Risk group;
- 11.3% felt that players were less likely to have problems with their gambling if they gambled online rather than on a VLT or at a casino, a belief that increased with risk for gambling harm;
- 7.5% think it makes sense to keep playing if on a winning streak to take advantage of luck, a perception most often held by those at Early (16.7%) or Intermediate Risk (20.0%) and especially Harmed youth (66.7%) as compared to those at No Detected Risk (2.4%). While 8.7% of youth at Advanced Risk endorsed this belief, the findings did not differ significantly from the other risk segments due to the small sample size;
- 6.6% think using a system or strategy when playing gambling machines can improve a player's chance of winning, a strong belief among those at any level of risk compared to those at No Detected Risk (Early Risk: 14.6%, Intermediate Risk: 11.4%, Advanced Risk: 27.3%, Harmed: 77.8% versus No Detected Risk: 1.4%);
- 5.3% of adolescents in Nova Scotia believe that most people who gamble make a lot of money especially Harmed adolescents (44.4%) although 14.6% of those at Early Risk also endorse this belief as compared to 1.1% among adolescents at No Detected Risk.
- 5.7% believe it is possible for a player to determine when a gambling machine is about to pay out, which was noted most often by adolescents scoring for Early Risk (14.2%) as compared to those at Intermediate (5.7%) or Advanced Risk (8.7%). Harmed youth also had a greater tendency to endorse this statement (33.3%).
- 4.4% of adolescents think chances of winning improve after someone has been gambling for a while and losing, especially those at the Early Risk (11.4%) and Intermediate Risk (8.6%);
- 4.1% believe that gambling is an easy way to make money (Early Risk: 10.2%; Intermediate Risk: 5.7%; Advanced Risk: 26.1%; Harmed: 50% as compared to 0.2% among the No Detected Risk group);
- 2.2% agreed that if someone had been gambling and losing for a while, they should keep gambling to win back their losses. Again, rates of agreement on this item increased with risk with only 0.2% of youth at No Detected Risk endorsing this statement.

Risky Cognitions: Motives

In the FYGRS V1.2 hierarchy of gambling risk and harms, risky gambling motives (i.e., reasons for gambling) were found to be strongly related to adolescent engagement in risky gambling practices making this an important area for risk reduction. Risky Cognitions: Motives is a formative construct made up of six separate reflective constructs, each comprised of four statements. Risky gambling motives identified for adolescents included: Gambling for competition and the thrill of victory (i.e., 'bragging rights'); Gambling to win prizes or items of value; Gambling to make money; Gambling to improve self-esteem; Gambling for status or respect; and, Gambling to escape problems or worries. To be classified as having risky motives for gambling, a youth had to endorse two or more items for any two of the five constructs described above. Risky Cognitions: Motives is an Intermediate Risk indicator: scoring on two or more of the risky motives constructs assigns a youth to the Intermediate Risk category but only if they had not met any of the criteria for Advanced Risk or Harm.

Percent of Adolescents At Risk due to Having Risky Gambling Motives

- Overall, 5.4% of adolescents aged 13-18 years in Nova Scotia met the criteria for having risky motives for gambling.
- Among adolescents who gambled in the past year, 14.5% reported gambling for reasons that placed them at risk (i.e., risky motives).
- Risky motives mentioned most often by adolescents included gambling for competition and the thrill of victory (88%), gambling to win prizes and items of value (76%), and gambling to win money (62%).
- Gambling to improve self-esteem (20%), for status (16%), or to escape worries or other problems (14%) were mentioned less often by adolescents in Nova Scotia.
- Despite being an Intermediate Risk indicator, the percent of adolescents scoring for risky gambling motives was similarly high among all three of the higher risk segments and did not differ statistically; Intermediate Risk (77.1%), Advanced Risk (60.9%), and Harmed youth (100%).
- This finding emphasizes the role of Risky Cognitions: Motives as a pre-harm risk indicator; those at Intermediate Risk reported risky motives for gambling prior to developing negative consequences whereas those at Advanced Risk and Harm are reporting negative impacts as well as risky motives.

- Male adolescents were significantly more likely to score for risky gambling motives (7.1% versus Females: 3.5%) and comprised 70% of those scoring for risky motives.
- Adolescents scoring for risky gambling motives also tended to be over 15 years of age (84%); those 15 to 18 years of age had rates of risk on this measure that were over three times higher than youth aged 13-14 years (~7.4% versus 2.2%).
- There were no significant differences observed by Health Zone.

Percent of Adolescents Reporting Any Risky Gambling Motives

- While, 5.4% of adolescents scored at risk due to risky motivation for gambling, 12.5% reported at least one risky motive for gambling. While this was below the threshold for triggering for Risky Cognitions: Motives it suggests that strategies addressing the reasons youth gamble will likely benefit a wider group of adolescents.
 - 9.9% of all youth reported gambling for the thrill of beating the competition, especially those at higher risk (Intermediate Risk: 65.7%; Advanced Risk: 60.9%; Harmed: 100%). Even those at Early Risk (11.8%) were more likely than those at No Detected Risk (2.8%) to say they gambled because they enjoyed the bragging rights of challenging and beating the competition and being a winner;
 - 5.6% specifically noted the appeal of winning prizes or items of value. Prizes were most appealing to those at Intermediate Risk (60.0%), Advanced Risk (52.2%) or Harmed (90.0%) levels. Comparatively, only 3.3% of those at Early Risk and 0.5% of youth with No Detected Risk were motivated by prizes;
 - Only 3.8% of youth noted they played primarily to win or make money, a reason almost exclusively mentioned by youth scoring at the higher risk levels (e.g., Intermediate Risk: 42.9%; Advanced Risk: 43.5%; or Harmed: 100%);
 - 1.1% of youth reported playing to improve their self-esteem, build confidence, fit in with others and feel better about themselves, especially those scoring as Harmed although 14.3% of those youth at Intermediate Risk also mentioned this as a factor motivating their gambling activity;
 - Status was also a motivator for a small minority of adolescents (0.8%), mentioned only by those at Advanced Risk (8.7%) and those who scored as Harmed (55.6%);
 - Very few adolescents gambled to escape worries or pressures (0.7%), almost entirely mentioned by those who were Harmed (60.0%).

Gambling Frequency Risk Indicator

Gambling frequency was a single item construct consisting of frequency of play in the 30 days preceding the survey. Adolescents had to report gambling on four or more days in the past month to meet the criteria for risky frequency of play. This construct is also one of the Intermediate Risk indicators; if a youth did not qualify for Advanced Risk or Harm then gambling four or more times in the past month would position them as being at Intermediate Risk.

Percent of Adolescents At Risk Due to Gambling Frequency

- Overall, 2.9% of adolescents reported rates of current gambling frequency (4+ days in the past month) that placed them at risk.
- Among those adolescents who gambled in the past year, 8.4% were playing at risky frequency levels.
- There was a strong relationship between recent play frequency (i.e., past 30 days) and risk for gambling harm. Almost all those scoring for Harm (90.0%) and 54.5% of those scoring at Advanced Risk gambled on four or more days in the 30 days before the survey. In contrast, 17.1% of those at Intermediate Risk reported playing this often.
- Male adolescents were more likely than females to score for risk due to gambling frequency (4.3% versus Females: 1.5%).
- Older youth aged 17-18 years also tended to have higher risk due to gambling frequency (5.0% versus 13-16 years: ≈1.5%).
- There was no significant difference observed among the Health Zones.

Impaired Control: Continue

There are two distinctive and independent constructs measuring impaired control among adolescents using FYGRS V1.2; Impaired Control: Continue and Impaired Control: Begin. Impaired Control: Continue, the first of the two constructs, is positioned as an earlier risk indicator in the FYGRS V1.2 Hierarchy. This construct refers to the inability and/or difficulty of an adolescent to stop gambling once they are involved in the activity (i.e., difficulty stopping once they have started gambling). It is a single reflective construct comprised of four statements. Youth must endorse two or more of these statements before being considered as having Impaired Control: Continue. Again, Impaired Control: Continue is an Intermediate Risk indicator; youth who trigger on this construct will be classified as being at Intermediate Risk if they do not qualify on any constructs for Advanced Risk or Harm.

Percent of Adolescents At Risk Due to Impaired Control During Play

- Overall, 2.3% of adolescents were found to meet the criteria for scoring on Impaired Control: Continue.
- Among those who gambled in the past year, 7.2% of adolescents triggered as having impaired control during play (Impaired Control: Continue).
- About one in four adolescents scoring at Intermediate Risk (25.7%) and 30.4% of those at Advanced Risk showed signs of impaired control once they were gambling.
- Younger adolescents (13-14 years: 0.5%) rarely reported any signs of impaired control. In contrast, youth 15 years or older were significantly more likely to experience problems controlling their gambling once they were engaged in the activity (15-16 years= 3.5%; 17-18 years=2.9%).

Risky Practices

Risky Practices is a formative construct comprised of eight statements; adolescents must endorse two or more before they score at risk for 'Risky Practices'. Risky gambling practices were found to be strongly related to youth experiencing gambling harm such that engagement in risky practices precedes the development of negative consequences for youth. High risk practices for adolescents include: Borrowing money from friends, family or others to go gamble or to continue gambling; Occasionally betting more than he/she could cover; Cheating at gambling to win; Using money for gambling intended for other things such as food, clothing or school supplies; Taking money or other things that do not belong to them to gamble; Sometimes gambling to win back money previously lost; Only hanging out with others who gamble; Gambling in places where he/she must lie about their age or use a fake ID; Sold or traded personal property to get money to gamble.

Percent of Adolescents At Risk Due to Risky Gambling Practices

- In total, 2.6% of adolescents in Nova Scotia were found to meet the criteria for risk due to engaging in risky gambling practices (e.g., had engaged in two or more of the risky practices measured).
- Among those adolescents who gambled in the past year, 8.1% scored for risky gambling practices.
- Most youth at Advanced Risk (65.2%) and 100% of those Harmed met the criteria for risky gambling behaviours.

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- Male adolescents were significantly more likely to be at risk due to their gambling practices than females (3.7% versus 1.5%), with male youth accounting for 72% of those triggering on this risk indicator.
- The percent of youth at risk due to risky gambling practices increased with age moving from 1.1% among those aged 13-14 years, to 2.4% for 15-16 year olds and up to 5.0% among 17-18 year olds.
- There was no significant difference observed among the Health Zones.

Percent of Adolescents Reporting Any Use of Risky Gambling Practices

- In total, 5.4% of adolescents reported engaging in any one of the eight risky behaviours over the past year.
- When considered among those adolescents who gambled in the past year, about one in every six youth (16.7%) had engaged in at least one risky gambling practice.
- All of the following behaviours are associated with development of gambling risk and harm among youth and were endorsed by the majority of Harmed adolescents identified in the study, as well as many of those scoring at Advanced Risk:
 - 2.4% of youth had cheated at gambling to win;
 - 1.8% had used money to gamble that was meant for other purposes;
 - 1.9% had sometimes gambled to win back money they had lost;
 - 1.7% only 'hang out' with other people who gamble;
 - 1.6% had borrowed from friends and family to gamble;
 - 1.4% had occasionally bet more than they could afford to lose;
 - 1.1% had sold or traded personal property to get money to gamble;
 - 0.7% had taken money or other things that did not belong to them to gamble;
 - 0.4% gambled at places where they had lied about their age and/or used fake id.

Impaired Control: Begin

Impaired Control: Begin is the second construct measuring impaired control.

Impaired Control: Begin represents more advanced risk, signalling adolescents who have difficulty in resisting opportunities to take part in gambling activities.

In contrast to those who have trouble stopping once they have started to gamble (Impaired Control: Continue), youth scoring on this construct are unable to stop themselves from 'starting' to gamble. This is a single reflective construct comprised of four statements, two or more of which must be endorsed before an adolescent will meet the criteria to score for Impaired Control: Begin.

Percent of Adolescents At Risk Due to Impaired Control Before Play

- Overall, 1.1% of adolescents were found to meet the criteria for Impaired Control: Begin, that is that they found it difficult to resist opportunities to start gambling.
- Among those who gambled in the past year, 3.0% could not stop themselves from taking part in gambling, even when they did not want to take part in the activity.
- This is one of FYGRS V1.2' high-risk indicators, and 8.7% of adolescents scoring at Advanced Risk and almost all of those scoring as Harmed (80.0%) had trouble resisting urges or temptations to gamble.
- Older adolescents were most likely to exhibit advanced impaired control with 2.5% of those aged 17-18 years triggering on this indicator versus 1.2% among 15-16 years olds and 0.0% among the youngest teens in the study (13-14 years).
- There were no differences by sex or Health Zone.

Preoccupation

Preoccupation consists of two reflective constructs (Preoccupation: Obsessed; Preoccupation: Desire) each comprised of four statements. Adolescents must endorse two or more of these statements before being considered as exhibiting risk for either form of preoccupation.

Percent of Adolescents At Risk Due to Preoccupation with Gambling

- Very few youth adolescents were found to meet the criteria defining preoccupation with gambling (Preoccupied: Obsessed=0.2%; Preoccupied: Desire=0.3%).
- Preoccupation was observed only among those identified as Harmed (Preoccupied: Obsessed =20.0%; Preoccupied: Desire=33.3%). This suggests that while preoccupation is typical of risk among adult gamblers it is more likely to be a signal of harm among adolescents; by the time adolescents are actively thinking about gambling or ways to get money to gamble they have crossed the threshold for experiencing negative consequences associated with their gambling.

Negative Consequences

Negative Consequences is a formative construct in FYGRS V1.2 with 53 statements comprising five different reflective constructs. The constructs focus solely on impacts that occurred over the past year. The constructs were designed to capture all the different types of consequences that can affect adolescents due to their gambling including: Life Style Consequences; Mental Health & Well-being (i.e., Torment); Financial Consequences; Personal Consequences; and, Social Relations. To score as experiencing negative consequences or harm in a particular life area, youth had to endorse two or more of the statements comprising the particular construct. Triggering for one negative consequence placed a youth at Advanced Risk. If a youth exhibited harm in more than one area of their life, he or she was classified as a Harmed adolescent gambler.

Percent of Adolescents At Risk or Harmed Due to Negative Consequences

- Over the past year, 2.4% of adolescents in Nova Scotia reported experiencing negative consequences in at least one area of their life due to their gambling.
- Among those who gambled in the past year, 7.5 % reported negative consequences suggesting that gambling had some degree of harm for about one in 13 adolescents who gambled.
- Just over half (52%) of those scoring at Advanced Risk reported negative consequences, and, by definition, 100% of Harm youth reported gambling consequences in two or more areas of their life collectively representing 1% of all adolescents in the province.
- Most of the gambling impacts reported by youth centered on negative consequences for their lifestyle or mental health:
 - 1.8% of adolescents reported negative impacts from gambling for their lifestyle with 30.4% of those at Advanced Risk and 100% of Harmed youth missing important events due to gambling or gambling when they should have been doing homework, working, or something else;
 - 1.7% of adolescents had experienced negative impacts for their mental health and well-being: feeling depressed about their gambling, fearful that others might find out how much they were gambling, lying to others, and reporting feelings of guilt. All youth identified as being Harmed agreed with one or more of these items, as did 27.3% of those classified as having Advanced Risk;
 - Financial consequences were reported by only 0.7% of adolescents, all of whom were Harmed (70.0%);
 - 0.4% adolescents noted personal impacts associated with their gambling such as stealing money and/or items of value, or using someone else's credit cards or bank card to get money to gamble; no longer doing the same things they used to; feeling irritable/anxious when they couldn't gamble; being punished for gambling; having parents express disappointment about their gambling; and, feeling like they are no longer the same person since they had started gambling.
 - Only 0.1% reported negative impacts associated with gambling for their social relationships.

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- Males were more likely to have experienced negative experiences due to their gambling than females (3.7% versus 1.3%).
- Negative gambling consequences increased with age (13-14 years: 1.1%; 15-16 years: 2.9%; 17-18 years: 4.1%), although the differences observed were only significant at the 90% confidence level.
- There were no significant differences in the percent of youth experiencing harms in each of the Health Zones.

Persistence Risk Indicator

Persistence is a single construct made up of four statements including: Continued to gamble despite the bad things that happened as a result; Kept gambling whenever they had the opportunity regardless of serious consequences; Continued to gamble despite the negative impacts from gambling on their life; Continued to gamble even though they knew it was causing a major problem for them. To trigger for persistence adolescents will agree with at least two of the four statements. Persistence in the presence of two or more harms (i.e., negative consequences) is used in the FYGRS V1.2 model to identify problem gambling.

- Only 0.4% of adolescents in Nova Scotia were found to meet the criteria for persistence meaning they continued to gamble despite experiencing negative impacts from their gambling. All scored as Harmed by FYGRS V1.2 and were identified by the DSM IV-MR-J as being probable problem gamblers (score 4+).

General Adolescent Gambling Involvement

To assess the factors contributing to gambling risk and harm it is helpful to have an understanding of gambling behaviours and the context in which they occur among the population of adolescents in Nova Scotia.

Adolescent Gambling Participation

Adolescents taking part in the study were asked a series of detailed questions about their involvement in each of the forms of gambling available in the province to establish prevalence benchmarks for future tracking.

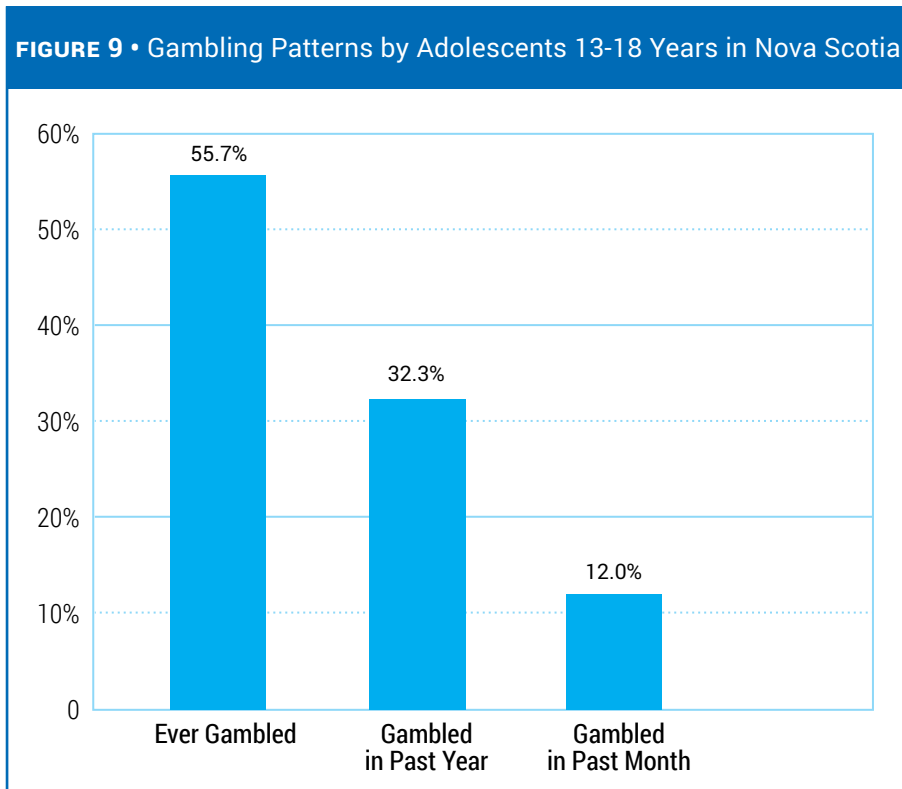
There were three primary estimates derived for each form of gambling:

Percent Ever Gambled – This estimate represents the percent of adolescents who have ever taken part in any gambling activities and serves as a baseline for tracking growth or contraction in time (e.g., new gamblers attracted to play over time or rejecting play over time). This is a tracking number that indicates the degree of curiosity, appeal and/or access a particular form of gambling may have for adolescents.

Percent played in the Past Year – This estimate represents the percent of adolescents who have gambled within the past 12 months and are current players by most standard prevalence measures. This is the key segmentation for profiling annual playing patterns and represents the current annual adolescent gambling population.

Percent Play in Past Month – This estimate is used to track monthly or regular playing patterns that are indicative of recent and ongoing adolescent involvement in gambling.

- More than half (55.7%) of adolescents in Nova Scotia aged 13-18 years reported having ever wagered money or other items of value on gambling or games of chance.
- Approximately one-third of youth (32.3%) had taken part in some form of gambling over the past year.
- More than one in 10 (12.0%) adolescents had gambled in the month prior to taking part in the survey .



- Adolescent involvement in gambling increased with age:
 - Among 13-14 year olds, 40.3% had ever gambled, 20.2% had gambled in the past year, and 4.9% had gambled in the past month.
 - Among 15-16 year olds, 60.3% had ever gambled, 35.1% had gambled in the past year, and 13.2% had gambled in the past month.
 - Among 17-18 year olds, 72.3% had ever gambled, 46.5% had gambled in the past year, with one in five (20.7%) having taken part in gambling in the past month, rates almost twice as high as youth aged 15-16 years of age.
- Ever gambled and past year gambling rates were significantly lower among adolescents living in the Western Health Zone as compared to the other Health Zones across the province. However, a similar percentage of adolescents in all regions of Nova Scotia had gambled in the past month.

TABLE 10 • Gambling Involvement by Health Zone

	Western	Northern	Eastern	Capital
Unweighted N's	N=225	N=225	N=225	N=225
Percent of Adolescents Population	23.8%	17.6%	19.2%	39.4%
Ever Gambled ***	44.4%	61.8%	58.2%	58.7%
Gambled in Past Year ***	23.1%	40.4%	31.1%	34.7%
Gambled in Past Month	9.3%	13.8%	9.8%	13.8%

* $P < .10$ ** $p < .05$ *** $p < .001$

- There were no differences in overall gambling participation rates between males or females nor did rates differ between adolescents living in urban versus rural areas of the province.

Age of Onset for First Gambling (Among those who have ever gambled)

- On average, adolescents aged 13-18 years who have ever gambled reported first gambling when they were 11.8 years old (median=12 years).
- There was no significant differences in age of onset by risk for gambling harm or sex, but age of onset, on average, was lower in the Western Health Zone (median=11 years) than elsewhere in the province (median=12 years).
- Arcade gaming machines played for prizes were typically the first game of chance adolescents played (39.3%), followed by charity raffles (17.4%), 50/50 tickets (10.7%), poker with friends/family (9.7%), bingo in bingo halls (6.2%), and other card games played for money (4.0%).
- Males were more likely than females to have started gambling playing poker with their friends and family (15.9% versus 3.1%), whereas female youth were more inclined to have purchased charity raffles (22.4% versus 12.6%).
- There was no statistically significant difference detected in age of onset for gambling by risk.

Time of Day and Location for Gambling in Past Year

- Most gambling activity took place outside of school primarily on weekends (57.6%) or, to a lesser extent, after supper on weekdays (27.0%).
 - Only 8.9% gambled at school, with 7.2% gambling after arriving home from school in the late afternoon before supper;
 - Younger adolescents (13-14 years) were more likely to have gambled at school (16.4%) especially compared to those 17-18 years of age (3.5%);
 - Those at both Advanced (69.6%) and Intermediate Risk (79.3%) were most likely to be gambling on weekends.
- For 45.6% of adolescents in the province, gambling occurs steadily over the course of the year, although 31.1% reported increased rates of gambling during the school year as compared to 23.3% who reported elevated gambling during the summer.
- Overall, 76.7% of adolescents who gambled in the past 12 months took part during the school year versus 68.9% who reported gambling in the summer.
 - Gambling patterns by adolescents at Early Risk or with No Detected Risk were similar and occurred more often during the school year (75.0% and 81.4% respectively);
 - In contrast, those scoring at Intermediate Risk were more likely to be gambling during the summer months (86.2%). Almost half (48.3%) in this risk category reported increased gambling activity during the summer;
 - Those at Advanced Risk (60.6%) and Harmed youth (70.0%) were more inclined to be gambling continuously over the course of the year;
 - There were no differences observed by sex, age, Health Zone or by urban versus rural area of residence.

Number of Different Forms of Gambling Played in Past Year

- It appears that once an adolescent in Nova Scotia had wagered on one type of gambling they were more likely to participate in other types as well.
- On average, youth who gambled tended to play 3 to 4 different games of chance with 58.3% of past-year adolescent gamblers taking part in three or more different types of gambling.
- About one in every six youth (16.6%) involved in gambling over the last year wagered on six or more different forms of gambling representing 5.5% of teens aged 13-18 years in the province.

TABLE 11 • Number of Different Types of Gambling Adolescents Participated in During the Past Year

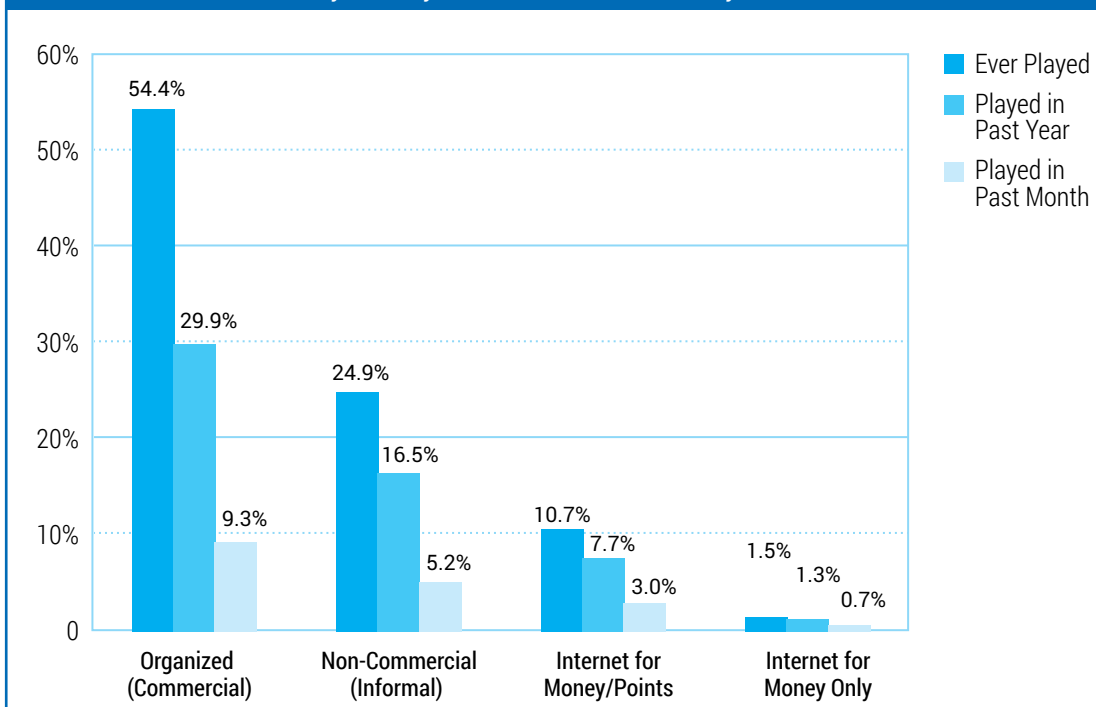
	Gambled Past Year	Total Youth
Unweighted n's	N=291	N=900
Percent of Youth Population	32.3%	100%
One type of Gambling	18.6%	6.0%
Two Types	20.2%	6.6%
Three Types	20.3%	6.5%
Four Types	11.7%	3.8%
Five Types	9.7%	3.1%
Six or More Types	16.6%	5.5%

Among those adolescents who had gambled in the last year, the number of different types of games played increased as risk went up. On average, games played ranged from a low of 2.3 for those at No Detected Risk (median=2), to 3.6 for those at Early Risk (median=3), 4.8 for those at Intermediate Risk (median=5), and, a high of 7.1+ for Advanced Risk and Harmed youth (median: ≈7).

Participation in Different Types of Gambling

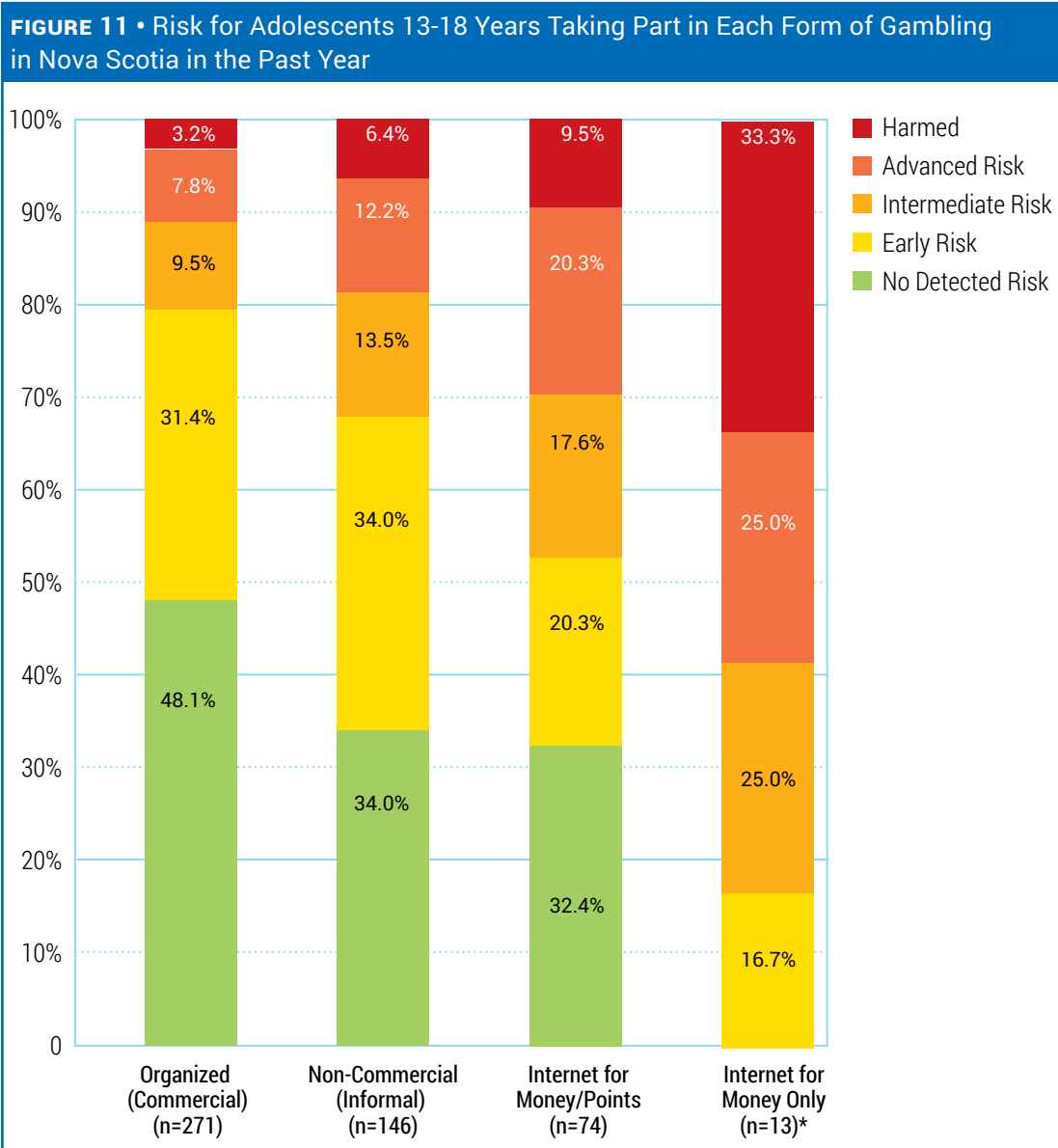
Adolescent involvement in each of the primary forms of gambling was examined to assess the relationship between access and risk for gambling harm.

FIGURE 10 • Percentage of Adolescents 13-18 Years Taking Part in Each Form of Gambling In Nova Scotia for Ever Played, Play in the Past Year and Play in the Past Month



- Most of the gambling activity reported by participating adolescents in Nova Scotia was for organized or commercial forms of gambling.
- Adolescents were twice as likely to have tried organized or commercial forms of gambling compared to informal or non-commercial forms of gambling (54.4% versus 24.9%).
- Wagering by adolescents was also higher for organized or commercial forms of gambling over the past year (29.9% versus 16.5%) and in the past month (9.3% versus 5.2%).
- Compared to youth living elsewhere in the province, adolescents in the Western Health Zone reported lower involvement in both organized commercial and informal non-commercial games of chance on an annual basis, yet monthly involvement in any of the various forms of gambling was similar for youth throughout Nova Scotia.

- Few adolescents reported internet gambling or online wagering for money with 1.5% having ever tried this form of gambling.
- When non-monetary forms of internet gambling were included about one in every 10 youth (10.7%) in the province had gambled online using points, online money or other virtual items of value.



* Within segment results should be treated with caution due to small sample size.

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- Among adolescents who had gambled in the past year, more than half were scoring at some level of risk or harm.
- Youth who gambled online with or without money tended to have higher levels of risk; almost half (47.4%) scored at higher risk levels, from Intermediate Risk (17.6%) to Advanced Risk (20.3%) or Harmed (9.5%).
- Although the sample size was small (n=13), the relationship between online gambling and risk for adolescents is evident; all youth who gambled online for money during the past year scored at some level of risk with one-third identified as Harmed due to their gambling activity. While the direction of the relationship is not clear (e.g., does online gambling attract high-risk players or does online gambling create risk for players) it can be concluded that online gambling by youth in Nova Scotia is associated with elevated levels of gambling risk and harm.

Participation in Organized/Commercial Gambling (Excluding Internet)

Organized and commercial gambling includes any form of gambling played for money that generates funds for a business or those operating the activity. These activities may or may not be regulated and/or age restricted but are differentiated from non-commercial / informal betting youth engage in with friends and family.

- On average, those adolescents involved in organized/commercial gambling played about two to three different gambling games during the past year.

TABLE 12 • Participation of Adolescents 13-18 Years in Commercial Forms of Gambling in Last Year by Sex

	Males	Females	Total Youth
<i>Unweighted n's</i>	<i>N=465</i>	<i>N=435</i>	<i>N=900</i>
Percent of Youth Population	51.9%	48.1%	100%
Total Organized/Commercial Wagering	29.7%	29.9%	29.9%
Charity Raffles	19.1%	20.9%	20.1%
Arcade Games to Win Prizes	17.9%	16.5%	17.2%
50/50 Tickets	18.3%	14.9%	16.7%
Any Bingo ***	7.7%	14.9%	11.2%
Bingo in Bingo Halls	5.1%	8.1%	7.2%
Bingo at Charity Events	5.1%	7.9%	6.3%
Satellite Bingo or Bingo on TV for money	1.4%	3.3%	2.3%
Any ALC Lottery Tickets	2.4%	1.3%	2.0%
Instant Tickets	2.0%	1.3%	1.7%
Weekly Lottery Tickets	1.0%	0.7%	0.7%
Daily Lottery Tickets	0.4%	0.4%	0.4%
ALC Sport Select ProLine **	2.0%	0.2%	1.7%
Texas Hold'em/Poker Tournaments	2.0%	0.0%	1.1%
Horse Racing/Harness Racing (Dog Racing)	0.6%	0.9%	0.8%
Other Sports Bets/ Pools	0.6%	0.2%	0.5%
Charity Casinos/Monte Carlo Nights	0.6%	0.4%	0.5%
VLTs	0.0%	0.0%	0.0%
Casino	0.0%	0.0%	0.0%

P* < .10 *p* < .05 ****p* < .001 More Than One Response Allowed

- Adolescent gambling patterns differ significantly from adult gambling patterns; the latter tend to be influenced more heavily by commercial (ALC) lottery products (e.g., instant lottery tickets, weekly lottery tickets) with expenditure higher for continuous forms of gambling products, such as VLTs, and casino gambling including poker.
- In contrast, adolescents in Nova Scotia reported little to no access to these forms of gambling suggesting regulations related to age restrictions in the province have been effective in limiting the exposure of youth to these specific products.
- The most popular organized games of chance played by adolescents were charity (20.1%), arcade games played for prizes (17.2%), and 50/50 tickets (16.7%). Male and female youth were equally likely to have taken part in these three forms of gambling.
- Female adolescents were almost twice as likely as males to be involved in bingo (14.9% versus 7.7%), whereas males tended to report higher involvement levels in organized poker tournaments (2.0% versus 0.0%), ALC's Sport Select ProLine (2.0% versus 0.2%), and, to a lesser extent, organized sports pools (0.6% versus 0.2%).
- No adolescents reported gambling on VLTs or at casinos over the past year, although it will be recalled (Section 2.2.1.2 Adult/Peer Facilitation of Gambling), a minority of youth were exposed to these forms of gambling through accompanying adults to the casino (0.1%) or when they played VLTs (0.4%).
- The commercial form of gambling most widely associated with risk among adolescents was involvement in arcade gaming machines (i.e., non-skill based arcade games played for money to win prizes) with about 1 in every 6 youth who played these machines scoring for advanced risk or harm. Rates of risk and harm were similar for adolescents purchasing charity raffles and not-for-profit 50/50 tickets in the last year. Although participation rates were much lower for other forms of commercial gambling, the proportion of adolescents at advanced risk and harm was higher. For example, 1.7% of adolescents reported purchasing ALC instant lottery tickets but 31% scored for advanced risk or harm. In addition, 1% took part in an organized Texas Hold'em Tournaments and approximately 45% were at advanced risk or harm. This compares with roughly 17% to 20% participation in arcade games, charity raffles, and/or 50/50 tickets and approximately 15% of adolescents scoring at advanced risk or harm.

- When both retail and online access to lottery tickets and sports wagering was considered, 3.3% of youth 13-18 years of age in Nova Scotia reported underage purchasing of ALC lottery products during the past year.
 - 2.3% of adolescents reported they had personally purchased lottery tickets online (0.4%) or at a retail outlet (2.0%) using their own money;
 - 1.6% had personally wagered their own money on Sport Select ProLine online (0.5%) or at a retail outlet (1.2%) especially males (3.0% versus 0.2%);
 - The percent of adolescents purchasing lottery products increased with risk (No Detected Risk: 0.8%; Early Risk 4.9%; Intermediate Risk: 8.8%; Advanced Risk: 27.3%; and Harmed: 50.0%);
 - Males were most likely to have made lottery purchases over the past year (4.7% versus 2.0%) largely due to play of ALC Sport Select ProLine;
 - Likelihood of purchasing lottery products increased with age (13-14 years: 0.8%; 15-16 years: 2.4%; 17-18 years: 8.3%).
- Among those who had gambled in the past year, 10.4% reported they had purchased lottery products with almost one in 10 male adolescents (9.4%) having wagered at least once on ALC's sports lottery as compared to 0.7% for females.
- Additionally, 12.2% of all youth taking part in the study reported adults had purchased lottery tickets for them and 14.8% had received lottery tickets as gifts during the past 12 months, with 5.7% of youth noting they had received lottery tickets as gifts on two or more occasions.
- Adolescents classified as being at Advanced Risk had higher involvement rates in commercial ALC products such as weekly lottery tickets (16.7%), daily lottery tickets (4.3%), especially instant tickets (21.7%), and Sport Select ProLine (9.1%).
- Adolescents at Advanced Risk were also involved in horse racing (8.7%) and organized poker tournaments (17.4%)

Participation in Online/Internet Gambling

- Involvement in online gambling for money by adolescents in Nova Scotia was low:
 - 1.5% have ever tried gambling for money online;
 - 1.3% gambled online in the past year;
 - 0.7% had gambled online in the past month;
 - Most online gambling activity by youth occurred on ALC's PlaySphere site with 0.8% of youth purchasing lottery tickets or Sport Select ProLine.
- There were some notable differences in involvement related to both sex, age, and risk for gambling:
- Males were over twice as likely as females to have ever tried wagering online (2.2% versus 0.9%) or to have played for money or items of value over the past year (1.8% versus Females: 0.7%), although the latter difference was only statistically significant at the 85% confidence level ($p=.15$);
- 4.1% of adolescents aged 17-18 years have ever tried online wagering for money and 3.3% had engaged in this activity in the past year;
- Only adolescents over 15 years of age had purchased lottery tickets on ALC's PlaySphere site, with 1.8% of youth aged 17-18 years reporting they had bought at least one lottery ticket online;
- Sport Select ProLine had specific appeal for males over 15 years of age, with 1.1% of those aged 15-16 years reporting online purchases increasing to 3.2% among males 17-18 years of age;
- There was a substantial association between betting online and adolescent experience of gambling harm; among those adolescents who had gambled on the internet using real money all scored at some level of risk and one in three was identified as Harmed.

TABLE 13 • Participation of Adolescents 13-18 Years in Online/Internet Gambling in Last Year by Sex

	Males	Females	Total Youth
<i>Unweighted n's</i>	<i>N=465</i>	<i>N=435</i>	<i>N=900</i>
Percent of Youth Population	51.9%	48.1%	100%
Total Online Wagers for Money	1.8%	0.7%	1.3%
Purchased Any Tickets on ALC PlaySphere	1.2%	0.4%	0.8%
Purchased ALC Lottery Tickets	0.6%	0.4%	0.4%
Bet on ALC Sport Select ProLine	1.2%	0.0%	0.5%
Any On-line Bingo for Money	0.0%	0.4%	0.2%
Any On-line Poker for Money	0.6%	0.2%	0.4%
Gambled Online Using Points/ Virtual Money***	8.5%	2.9%	5.9%

* $P < .10$ ** $p < .05$ *** $p < .001$ More Than One Response Allowed

- Adolescent involvement in online gambling using points or virtual money was almost three times higher than gambling online using money with 7.6% of adolescents having ever gambled online using practice gambling sites at some time in the past and 5.9% having done so in the last year.
 - Use of online practice sites was more common among males (8.5% versus 2.9%) with no differences observed by age or Health Zone;
 - Use of online practice sites was associated with increased risk (No Detected Risk: 2.5%; Early Risk 4.5%; Intermediate Risk: 25.7%; Advanced Risk: 56.5%; and Harmed: 60.0%).
 - 4.1% of adolescents had ever gambled on social network sites such as Facebook, MySpace with 2.5% making virtual wagers on these sites in the last year.
 - Virtual gambling on social networks was only significantly higher among those scoring at Intermediate Risk or higher (~19.4%-30.0%) versus those at Early Risk (1.2%) or having No Detected Risk (0.9%)

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- It appears that online gambling is often a social activity for adolescents whether played with real money, virtual money, or for points.
 - Overall, 6.2% of youth reported they had played online in the company of friends and 2.3% in the company of family members during the past year;
 - When only considered among those who wagered online, over half of youth reported at least sometimes gambling online with friends (58.4%) and 21.8% gambled online with other family members.

Other Adolescent Internet and Online Behaviour

- Almost all adolescents in Nova Scotia were interacting online socially and for entertainment purposes, spending on average about two hours a day on the internet (mean=125.6 minutes; median=120 minutes) and about an additional hour a day specifically on social network sites.
 - 94.3% have an account on Facebook, MySpace and/or another social network;
 - 87.3% have an MSN Live Messaging account;
 - There were no significant differences observed by risk category or region although on average female teens spend more time socializing online than males (Median: 60 minutes versus 30 minutes) as do those aged 15-16 years (60 minutes) compared to older or younger teens (30 minutes).
- Most adolescents aged 13-18 years (64.3%) had access to a cell phone or another portable device they can use to access the internet, slightly more so among those living in urban areas of the province (66.7% versus 62.1%).
- On average, those with a phone claim to send about 100 texts per day, with female youth sending more text messages on average than their male counterparts (mean: 118 versus 85; median: 100 versus 85).
- The majority of adolescents in Nova Scotia had played non-gambling games online for fun or entertainment (86.6%) and there were no differences observed by sex, Health Zone or age.
- Online purchasing activity was reported by adolescents with 8.1% of having ever purchased anything online without the assistance of an adult and this increased with risk and gambling harm (No Detected Risk: 4.6%; Early Risk 13.0%; Intermediate Risk: 17.1%; Advanced Risk: 21.7%; and Harmed: 50%).
- Additionally, 6.1% have sold something online without the assistance of an adult. Again, this behaviour was associated with increased risk for gambling risk and harm; those scoring at any level of risk were at least four times more likely than those who had No Detected Risk to have sold items on the internet without the assistance of an adult (11.0%-13.0% versus 2.8%).
- A similar proportion (6.3%) have have visited the ALC website. It is unknown whether adolescents visited the ALC website out of curiosity or to attempt to purchase ALC products. Rates of visits to the ALC website among male adolescents in the province were twice as high (8.5% versus 4.2%) and this tendency increased with risk (No Detected Risk: 3.6%; Early Risk 10.6%; Intermediate Risk: 14.6%; Advanced Risk: 8.7%; and Harmed: 44.4%);
- Overall, 3.7% of adolescents have clicked on gambling related advertising while browsing online (males: 5.5% versus females: 1.8%) and included almost all who scored at some level of risk, especially youth at Advanced Risk (22.7%) or Harmed Adolescents (66.7%).

Participation in Non-Commercial/ Informal Gambling

Non-commercial or informal gambling consists of skill-based and personal wagering involving friends and family. These forms of gambling can include money wagers as well as bets involving other non-monetary items of value or personal favours.

- About one in every four adolescents (24.9%) in Nova Scotia had wagered money or items of value on informal games of chance, a rate almost half that reported for organized gambling (54.4%).
- Males were significantly more likely than females to have engaged in any informal/non-commercial gambling during the past 12 months (19.5% versus 13.0%) They were also involved in a wider variety of activities.

TABLE 14 • Participation of Adolescents 13-18 Years in Non-Commercial Forms of Gambling in Last Year by Sex

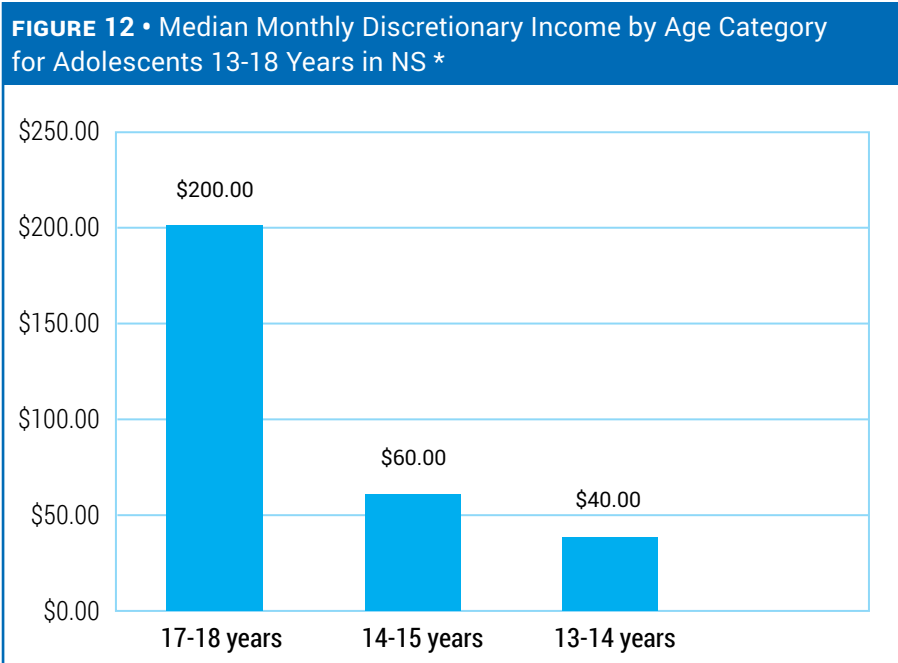
	Males	Females	Total Youth
<i>Unweighted n's</i>	<i>N=465</i>	<i>N=435</i>	<i>N=900</i>
Percent of Youth Population	51.9%	48.1%	100%
Total Non-Commercial Wagering ***	19.5%	13.0%	16.5%
Poker with Friends/Family ***	11.8%	4.6%	8.3%
Other Card Games Played for Money (e.g., Auction 45's, Cribbage, Hearts, Old Maid)	6.9%	5.3%	6.1%
Sports Pools ***	7.3%	1.8%	4.6%
Wagering on Local Sports (non-professional)**	4.5%	1.5%	3.1%
Dares or Challenges **	4.1%	1.8%	3.0%
Games of Skill Played by youth/ friends ** (e.g., golf, darts, bowling, pool)	3.7%	1.3%	2.5%
Bloody Knuckles ***	2.8%	0.7%	1.8%
Outcomes for Video Games (e.g., Xbox, Play Station & other home systems)	1.8%	1.8%	1.8%
Coin Pitching	1.8%	1.1%	1.5%
Outcomes of 'Schoolyard' Fights	1.8%	0.9%	1.4%
Dice	0.8%	0.4%	0.6%
Outcome of Arcade Games	0.4%	0.4%	0.4%

* $P < .10$ ** $p < .05$ *** $p < .001$

- Card games were most popular among adolescents, especially poker games (8.3%), which males were twice as likely to have played over the last year as compared to females (11.8% versus 4.6%).
- In contrast males and females were equally likely to have engaged in other card games for money (~6.1%) such as Hearts, Auction 45's, Cribbage, and Old Maid in one case.
- Males most often wagered on personal competitions with others including sports pools (7.3%), bets on outcomes of local sports (4.5%), personal dares or challenges (4.1%), personal outcomes in games of skill (3.7%), 'bloody knuckles' (2.8%) and the outcomes of physical fights among peers (1.8%). Fewer female teens engaged in any of these activities.
- Increased risk was found most strongly for those involved in card games, especially poker:
 - Poker - No Detected Risk: 2.7%; Early Risk 11.4%; Intermediate Risk: 34.3%; Advanced Risk: 56.5%; and Harmed: 80.0%;
 - Betting in Other Card Games - No Detected Risk: 1.9%; Early Risk 8.6%; Intermediate Risk: 28.6%; Advanced Risk: 34.8%; and Harmed: 70.0%.
- Other forms of non-commercial gambling also associated with elevated risk included wagering on sports pools with family or friends or wagering on the outcomes of sports.

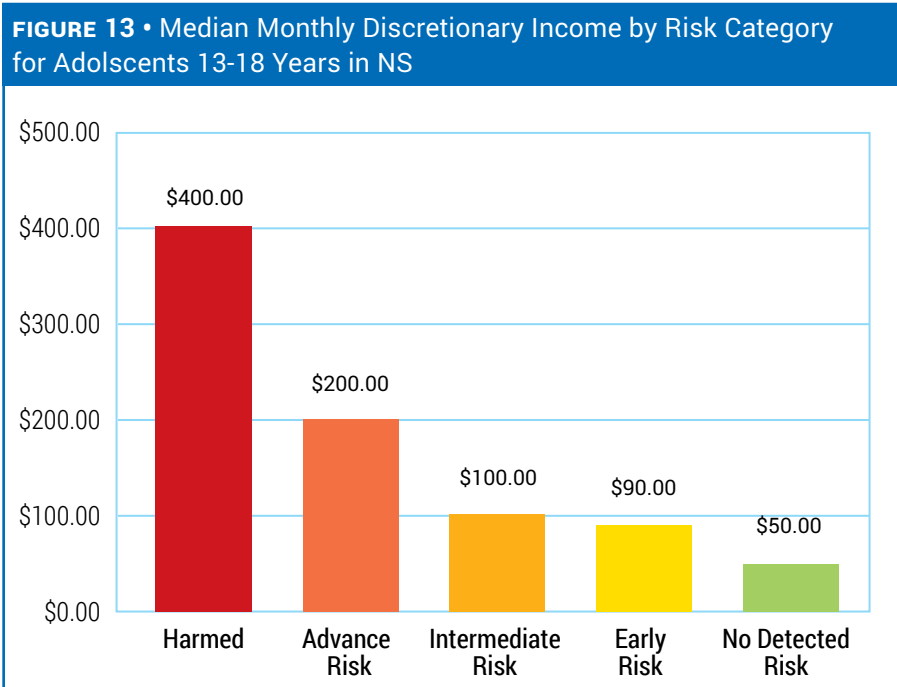
Access to Resources

- The majority (85.4%) of youth 13-18 years of age have access to money on a regular monthly basis either from part time or occasional jobs or from an allowance:
 - 42.8% have a regular allowance each month;
 - 28.9% have part-time jobs during the school year;
 - 40.2% have money from summer jobs;
 - 45.0% work on an occasional basis;
 - ~ Female adolescents were more likely to babysit (66.2% versus males: 25.4%),
 - ~ Male adolescents were more likely report seasonal work (57.5% versus females: 19.3%).
- On average, youth across the province had about \$129.00 (median=\$50.00) of their own money to spend each month, although amounts of discretionary income were significantly higher among older teens.



* $P < .10$ ** $p < .05$ *** $p < .001$

- There was no notable difference in discretionary income and personal access to resources by Health Zone, sex, or urban versus rural area of residence. Younger adolescents aged 13-14 years were more dependent upon allowance, while 60% of 17-18 year olds were working part-time during the school year and 76.4% were holding down summer jobs.
- Discretionary income increased by risk for gambling harm.



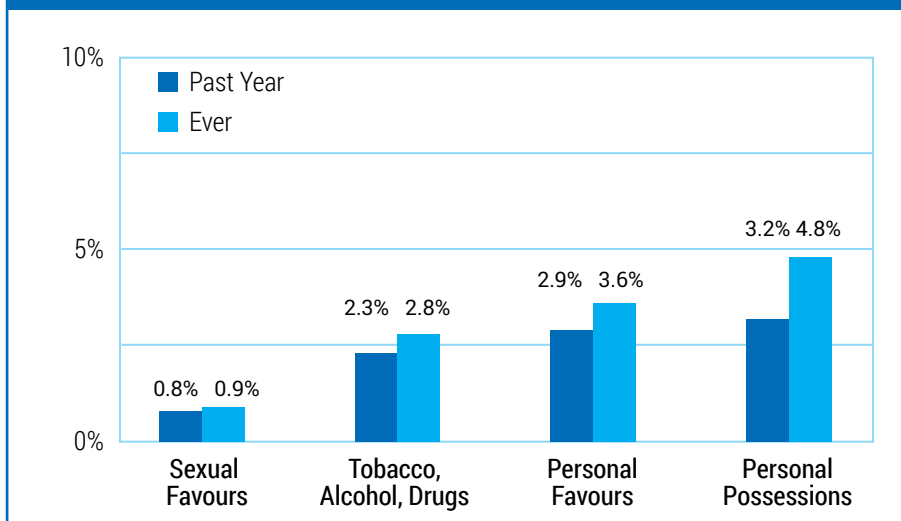
- Overall participating adolescents reported spending their discretionary money primarily on the following items or services:
 - 40.5% spent their money on food (males: 47.1% versus females: 34.1%);
 - 31.3% bought clothes/shoes (females: 53.1% versus males: 11.2%);
 - 11.6% spent on games/video games (males: 20.5% versus females: 2.1%);
 - 11.3% put money into savings (no sex or age difference);
 - 8.0% spent on movies (no sex or age difference);
 - 7.7% purchased alcohol (no sex or age difference);
 - 5.5% bought gasoline (especially 17-18 year olds: 14.3%).
- When specifically asked about access to resources for gambling, 58.3% of adolescents in the province agreed they could use at least one of the five sources measured in the survey to fund gambling if they wanted:
 - 38.2% had saved money or received money for gifts that they could spend on gambling;
 - 32.5% had a regular source of money to pay for gambling;
 - 31.2% had access to some means of paying for online gambling (e.g., credit card, debit card, PayPal);
 - 5.3% know people who will give them money to gamble.

- Access to resources increased with age (13-14 years: 38.5%; 15-16 years: 65.7%; 17-18 years: 78.1%) with no differences observed by sex or by Health Zone.
- Overall, 38.4% of adolescents had access to two or more different resources they could use for gambling, and this increased strongly by gambling risk and harm: the greater a youth's risk for gambling harm the greater access they reported to resources to pay for gambling.

Gambling for Non-Monetary Items or Services

- In total, 6.8% of adolescents indicated that they had made bets using items of value, personal and /or sexual favours at some time in the past, and 5.5% bet with such non-monetary items and favours during the past year.
- Among those adolescents who gambled in the past year, 17.2% wagered using items of value and/or favours.

FIGURE 14 • Gambling for Non-Monetary Items or Services Ever and in the Past Year



- Some adolescents reported they had gambled with possessions or non-monetary items of value at some time (4.8%) with 3.2% having done so in the past year.
- Males were more than twice as likely to be betting with their belongings (5.9% versus 3.7%), and this tendency increased with age; almost one in 10 (9.1%) adolescents aged 17-18 reported gambling with personal items at some time in the past

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- Gambling for personal favours such as work shifts, chores or homework at some time was lower with 3.6% of youth in Nova Scotia have ever gambled for these favours and 2.9% doing so in the last year. There was no significant difference observed by sex or age category.
- Some adolescents (2.8%) had reported gambling at some time using alcohol, drugs or cigarettes with 2.3% betting with these substances in the past year. Use of substances for gambling increased with age (13-14 years: 0.9%; 15-16 years: 2.6% and 17-18 years: 5.8%).
- Male (1.0%) and female adolescents (0.9%) were equally likely to have ever gambled using sexual favours. This behaviour was more prevalent among older teens (17-18 years: 2.5%).
- In all cases, betting for non-monetary items or favours increased significantly with risk for gambling harm.

TABLE 15 • Wagering with Non-Monetary Item of Value/Favours by Adolescents 13-18 years in Nova Scotia*

	Total Youth	No Detected Risk	Early Risk	Intermediate Risk	Advanced Risk	Harmed Youth
<i>Unweighted n's</i>	<i>N=900</i>	<i>N=592</i>	<i>N=241</i>	<i>N=35</i>	<i>N=22</i>	<i>N=10</i>
Percent of Youth Population	100%	67.0%	25.9%	3.7%	2.4%	1.0%
Ever Gambled Using:						
Personal Possessions	4.8%	1.7%	2.8%	28.6%	43.5%	90.0%
Personal Favours	3.6%	1.4%	4.1%	20.0%	17.4%	55.6%
Drugs, Alcohol, and/or Tobacco	3.6%	0.2%	2.0%	5.9%	40.0%	90.0%
Sexual Favours	0.9%	0.0%	0.4%	5.7%	4.5%	44.4%
Gambled in Past Year Using:						
Personal Possessions	3.2%	0.9%	0.8%	20.0%	31.8%	80.0%
Personal Favours	2.9%	1.3%	2.4%	14.3%	13.0%	55.6%
Drugs, Alcohol, and/or Tobacco	2.3%	0.2%	1.6%	5.7%	34.8%	80.0%
Sexual Favours	0.8%	0.0%	0.4%	5.7%	4.5%	44.4%

* Within segment results should be treated with caution due to small sample sizes.

Exposure to Gambling Information & Events

- More than one in five (22.8%) adolescents had participated in an event that provided information about gambling risks, especially those living in rural areas of the province (26.5% versus 18.3%).
- Adolescents in the Central Health Zone (16.0%) reported the lowest exposure to gambling risk information compared to exposure rates in the Western (24.9%), Northern (28.3%), and Eastern (29.0%) Health Zones.
- Reported exposure to information on gambling risk was highest among those adolescents scoring at Intermediate (40.0%) and Advanced Risk (52.2%), although only one identified as Harmed recalled seeing any information on gambling risks.
- About one in every 4-5 youth scoring at Early Risk (25.0%) and No Detected Risk (20.0%) had recalled seeing such information.
- Adolescents aged 13 to 14 years (17.0%) were least likely to report participating in school or community events that exposed them to information about gambling risks as compared to older youth (15-16 years: 27.3%; 17-18 years: 25.3%).
- There were no differences observed by sex.

Exposure to Gambling Themed Parties and Events

- Few adolescents (3.9%) have ever attended a gambling themed party, an activity more popular with males (4.9%) than female teens (2.9%).
- However, the likelihood of attending a gambling themed event increased with age: 7.1% of 17-18 years olds had taken part in such an event or party versus 2.0% or less for youth aged 13-14 years.
- Attendance at gambling themed parties both ever and in the past year increased with risk for gambling harm with only 1.1% of those with No Detected Risk taking part in gambling themed events as compared to 6.1% of those at Early Risk and 17.4% or higher among the higher-risk segments.
- There were no significant differences observed by Health Zone.

Perceptions of Gambling Impacts

- All youth were asked to estimate the personal impact of losing while gambling using a 5 point scale where 1 meant little to no impact (minor) and 5 meant a significant impact (major):
 - For the most part the prospect of gambling losses generated little concern among participating adolescents;
 - The vast majority of youth in Nova Scotia (94.6%) reported that losing at gambling would have a minor impact in their life at this time (rating 1-2/5);
 - An additional 2.6% were more uncertain as to the degree of impact gambling losses could have for them (rating of 3);
 - Only 2.3% of youth estimated that the impact would be substantial (rating of 4-5).
- There were no significant differences in perceptions of gambling impact by sex, age, or urban versus rural area of residence.
- On average, adolescents living in the Western (mean=1.25) and Northern (mean=1.25) Health Zones rated gambling impacts higher than adolescents living in the Central Health Zone (mean=1.08). Regardless, most youth considered the potential financial impact of gambling losses as minor regardless of where they lived.
- There were some significant differences noted by risk for gambling harm with adolescents scoring at Intermediate Risk rating the impact of losses as least severe compared to those in any of the other risk segments (average rating of 1.07 versus 1.20 to 1.72).
- When asked about the potential benefits of gambling for youth, 38.8% referred to the chance to make money with 11.8% specifically mentioning the chance to 'get rich' as a key benefit.
- Adolescents perceptions of negative gambling impacts centered on financial problems (84.1%), addiction (19.2%), problems with family relationships (11.0%), losing items of value (7.5%), potential for criminal problems (6.2%), and worries about their physical safety (4.6%).
- While the impact of gambling losses was not particularly significant for youth, it is one of the predominant negative consequences they associate with gambling. This suggests there may be a disconnection between information they have assimilated about negative impacts from gambling, which is largely based on adult gambling experience, and the relevance of such consequences to their own gambling experiences.

Section 3: Discussion

Gambling is a normalized activity for adolescents in Nova Scotia. In 2011, over half of Nova Scotian youth aged 13-18 years had wagered on some type of gambling or game of chance, and this increased to approximately three-quarters among older youth (17-18 years). A more serious issue is the belief held by many youth that they can make a good living through gambling or it is an easy way to make money when needed. The availability of gambling and games of chance is common and approximately one in five youth reported spending their own money on charitable activities over the past year. Adolescents also attended gambling themed parties and gambling events hosted by adults and/or peers. About one in four youth had gambled at home, school, or with friends and about one in ten indicated adults had paid for their gambling or engaged in gambling with them over the past year. Early risk for adolescents was strongly related to facilitation of gambling by parents and other adults in their lives, which included older siblings, and other immediate family members. In short, easy access and normalization of gambling was associated with increased risk for harm among youth.

Adolescents found at high risk for gambling problems and/or to have experienced harms due to gambling had indications of impaired control, engaged in risky behaviours related to gambling, were gambling more frequently, tended to be gambling for high-risk reasons, had risky beliefs, were exposed to more opportunities to gamble, were being influenced by peers or family members involved in gambling, and were more likely to have adults in their life who facilitated their gambling. Relatively few were preoccupied or obsessed with gambling, which more often appeared as an indication of harm rather than risk for youth; when adolescents were preoccupied or obsessed with gambling they were already experiencing gambling harms. Most did not qualify as 'persisting' in gambling despite the harms they were experiencing.

Gambling involvement and risk both increased with age and were higher among males than females. For example, older adolescents were more actively involved in gambling, had more money to spend, reported greater access to gambling opportunities, were more likely to have adults in their life who facilitated gambling, were more likely to have peers who gambled, and spent more time taking part in activities associated with gambling or games of chance. Male adolescents also gambled more often and on more forms than females and were more likely to exhibit characteristics of advanced risk and harm.

Policies and practices restricting VLTs and casino gambling to age-controlled environments appears to be effective in protecting adolescents in Nova Scotia from these higher-risk forms of gambling. No youth reported playing VLT's

or gambling at casinos in the province over the last year and few were taken into these environments by adults. However, involvement levels were much higher for more widespread commercial gambling options and more often associated with harms for adolescents.

The commercial gambling most widely associated with risk and harm among adolescents was involvement in arcade gaming machines (i.e., non-skill based arcade games played for money to win prizes). Much arcade gaming for youth has evolved from primarily skill-based video games rewarded with extended playtime towards games relying on random chance outcomes rewarded with low-probability high-level prizes. The assumption held by over one-third of youth is that arcade gaming machines are games of skill, which reinforces continued engagement in the activity as 'practice' to become more skillful. Rates of risk and harm were also very similar for adolescents purchasing charity raffles and not-for-profit 50/50 tickets in the last year. Nevertheless, despite much lower participation in a few other forms of commercial gambling, the proportion of adolescents scoring for advanced risk and harm within these product categories was higher. Although fewer adolescents purchased ALC products or engaged in Texas Hold'em tournaments, the levels of risk and harm was higher than for the other types of gambling.

High access to and involvement with the internet has made adolescents accessible to online vendors offering various forms of gambling and games of chance. While few adolescents gambled online for money in the last year, one in 10 youth gambled online for points or virtual money. The adolescent's comfort levels in wagering online is of concern especially when coupled with high-risk beliefs held by youth. For example, approximately one in ten adolescents in the study believed internet gambling is safer than other forms such as VLTs or casino gambling. Two in ten also felt online games are less open to cheating or manipulation by players and/or that the odds of winning real money is the same as odds offered at practice sites. In addition, just under half of adolescents indicated that they could gamble with real money online, and one-third have the ability and know-how to pay online for their gambling. Adolescents who engage in real or practice online gambling sites could be at higher risk for harm if their online gambling escalates once they are older and 'graduate' to gambling sites played for money.

Finally, only about one in 20 adolescents recalled seeing information about gambling risks. The majority identified financial problems and fear of addiction as the primary negative outcomes for gambling, and these did not resonate strongly with youth in terms of their own gambling. In fact, almost all youth indicated that even substantial financial gambling losses would marginally impact their lives; other consequences including impacts for life style, mental health and well-being, social and family relationships were seen as more important.

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Appendix A:

FYGRS Risk Profile Summary

Youth at No Detected Risk 67.0% (\pm 3.05%; Range: 64.0%-70.0%) (n=592)

The majority of adolescents in Nova Scotia scored as having No Detected Risk for gambling harm and did not trigger on any of the adolescent risk indicators. However, about one quarter of these youth had gambled in the past year and many hold beliefs about gambling that are associated with early risk. Although these adolescents fall below the threshold for risk, changes in their circumstances or the gambling environment could elevate their risk status. This group is equally comprised of males and females but had the youngest age profile with 45% under 15 years of age. Given the relationship between increasing gambling risk and age, this group is well positioned for knowledge and decision making development. Protective factors and actions taken by adults and the broader community will assist to continue to keep these youth below the threshold or risk before they encounter increased exposure to opportunities to gamble as they get older.

Youth at Early Risk 25.9% (\pm 2.84%; Range: 23.1%-28.7%) (n=241)

About one in four adolescents in Nova Scotia scored at Early Risk. Adolescents in this group have characteristics that make them susceptible to development of gambling harm but do not yet exhibit higher risk motives, behaviours, or impacts making this an important pre-harm risk group to target for prevention. Almost half were triggering for risk due to beliefs they hold about gambling (48.6%); exposure to influence by peers or other significant people in their lives (46.5%); high access to gambling opportunities (26.4%); and exposure to adults and peers who actively facilitate youth gambling (10.2%). Only 38.2% had gambled in the last year but the remaining 61.8% still triggered on risk indicators that, should they gamble more, are associated with the development of risky gambling motives and practices, both of which are important precursors of harm. These adolescents tended to be older than those found to be at No Detected Risk, reporting greater access to resources to support involvement in gambling, and were equally likely to be male or female.

Youth at Intermediate Risk

3.7% (\pm 1.23%; Range: 2.5%-4.9%) (n=35)

Adolescents at Intermediate Risk have not yet developed significant harm or consequences, although one-quarter (25.7%) indicated they had trouble stopping once they started gambling. Most had gambled in the past year (82.9%) with 17.1% gambling four or more times in the past month. The majority (77.1%) reported risky motives for gambling, more likely to be motivated to play by the thrill of competition (65.7%) and strong drive to win prizes (60.0%) or money (42.9%). Those scoring at Intermediate Risk were more likely to be male (61.8%), preferred skill type games, especially sports betting, poker, and personal wagering. They tended to be more self-motivated in their gambling and were less likely than youth in the other risk categories to be at risk due to the risky influence of others (20.5%). The majority were age 15-16 years (54.3%). Youth in this group may be developing gambling habits that will put them at increased risk as they age and gain access to greater resources and other higher risk forms of gambling as well as greater autonomy and mobility. As one of the pre-harm groups, adolescents at Intermediate Risk are good candidates for prevention initiatives.

Youth at Advanced Risk

2.4% (\pm 0.99%; Range: 1.4%-3.4%) (n=22)

Few adolescents score for Advanced Risk in Nova Scotia but among those in this category about half (52.0%) reported negative impacts due to gambling in one area of their life, primarily for their lifestyle (30.4%) or mental health and well-being (27.3%). Almost two-thirds were found to engage in high risk gambling behaviours (65.2%); half had gambled four or more times in the past month (54.5%); 30.4% found it difficult to stop playing once they had started gambling; 8.7% found it difficult to stop themselves from gambling. The majority (60.9%) reported high-risk motives for gambling and 56.5% scored as having risky beliefs. Those at Advanced Risk also had high rates of exposure to opportunities to gamble (65.2%), just over half were scoring for risky influence from others (52.2%), and about one in three youth at Advanced Risk reported exposure to adults and peers who facilitated their gambling (34.8%). Most adolescents scoring for Advanced Risk in Nova Scotia were male (65.2%) and most were over age 15 years (78.3%) although about one in five was younger (13-14 years of age). All adolescents at Advanced Risk had gambled in the last year with 73.9% taking part in the past month. Negative consequences are starting to accrue for youth in this group, and, given their comparatively heavy involvement in gambling, they are a key target for harm reduction.

Harmed Adolescents 1.0% (\pm 0.65%; Range: 0.4%-1.6%)(n=10)

Very few adolescents in Nova Scotia scored as Harmed yet the impact of gambling for these youth is significant. Although, due to small sample size result should be treated with caution, all Harmed adolescents were experiencing negative consequences in two or more areas of their life with over one third also scoring for persistence, a characteristic of problem gambling. All reported negative gambling impacts for their life style, and mental health and well-being with most noting negative financial impacts due to their gambling. All reported risky gambling behaviours and risky motives for gambling. Most also exhibited impaired control (80.0%) finding it difficult to resist going to gamble; most have high risk access to opportunities to gamble (90.0%) and were influenced by others to gamble (90%); many had adults and peers in their life that facilitated their gambling (77.8%) and held risky beliefs about gambling (77.8%). About one-third scored as being preoccupied with gambling. All had gambled in the past year and 90% took part in the past month. The majority of Harmed youth was male (77.8%), and all were above 15 years of age, primarily aged 17-18 years (60.0%). These youth were getting ready to graduate and will soon have access to higher risk forms of gambling with potential for more significant impacts financially and emotionally. Clinical intervention is likely required to prevent further harm. Motivating and supporting these youth to seek information and assistance is important as an effective intervention relevant for youth and needs to be aligned with their gambling experience.

Appendix B: DSM-IV-MR-J Adolescent Gambling Screen & Rationale for Use

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While it has been argued that there is no strong theoretical basis for selecting one adolescent problem gambling screen over another (O'Neil, Whetton & Duerrwald, 2003), the DSM-IV-MR-J appears to be the best designed single construct screen for the identification of adolescent problem gamblers at this time. It has been tested for readability and scored 4.8 on the Flesch-Kincaid Grade Level Test which means it is at a fourth grade reading level. Fisher (2000) found that internal consistency reliability was acceptable and that all items discriminated effectively between problem and non-problem gamblers. Additionally the scaling was appropriate for the questions comprising the instrument, it was well understood by youth in Nova Scotia during the pre-test and qualitative testing of the survey instrument, and it was easy to administer and include in the survey as it consists of only 9 questions.

The SOGS-RA has been used in the Maritimes (Poulin & Baker 1998) and was modified to combine gambling frequency with the SOGS-RA score during the 2002 Nova Scotia Student Drug Use Survey (Poulin et al 2002).¹ However, the items comprising the SOGS-RA were found to be misinterpreted by some youth contributing to gross inflation of problem and probable pathological estimates by as much as 40% (Ladouceur et al 2000). Moreover, Rosson (2001) noted that the SOGS-RA lacked any questions concerning preoccupation, an important characteristic of many addictions as pointed out by Derevensky and Gupta (2000). In the 2008 Nova Scotia Exploratory Adolescent Gambling Research preoccupation and/or obsession with gambling was one of the risk factors associated with suffering harms due to gambling suggesting that deficiencies noted for SOGS-RA in this area make it a less desirable choice.

The Massachusetts Gambling Screen (MAGS) is a 26 item screen which has been shown to be a reliable, valid and effective clinical instrument. However, Derevensky & Gupta (2000) found that the MAGS had 96% agreement with the DSM-IV-MR-J classification suggesting there is no advantage to using the longer MAGS screen over the 9 item DSM-IV-MR-J. Therefore, the DSM-IV-MR-J was included in the survey to verify identification of adolescent problem gamblers who were expected to comprise a minority of youth living in the province of Nova Scotia.

1 Nova Scotia Student Drug Use 2002: Technical Report http://www.gov.ns.ca/hpp/publications/2002_NSDrugTechnical.pdf

DSM-IV-MRJ			
#	Item	Questions	Responses
1	Preoccupation	In the past year how often have you found yourself thinking about gambling or planning to gamble?	<ul style="list-style-type: none"> • never • once or twice • sometimes • often
2	Tolerance	During the course of the past year have you needed to gamble with more and more money to get the amount of excitement you want?	<ul style="list-style-type: none"> • yes • no
3	Loss of control	In the past year have you ever spent much more than you planned to on gambling?	<ul style="list-style-type: none"> • never • once or twice • sometimes • often
4	Withdrawal	In the past year have you felt bad or fed up when trying to cut down or stop gambling?	<ul style="list-style-type: none"> • never • once or twice • sometimes • often • never tried to cut down
5	Escape	In the past year how often have you gambled to help you to escape from problems or when you are feeling bad?	<ul style="list-style-type: none"> • never • once or twice • sometimes • often
6	Chasing	In the past year, after losing money gambling, have you returned another day to try and win back money you lost?	<ul style="list-style-type: none"> • never • less than half the time • more than half the time • every time
7	Lies	In the past year has your gambling ever led to: Lies to your family	<ul style="list-style-type: none"> • never • once or twice • sometimes • often
8	Illegal acts (adolescent version includes unsocial acts)	In the past year have you ever taken money from the following <i>without permission</i> to spend on gambling: <ul style="list-style-type: none"> • School dinner money or fare money? • Money from your family? • Money from outside the family? 	(multi-question format) <ul style="list-style-type: none"> • never • once or twice • sometimes • often
9	Risked job/ education/ relationship	In the past year has your gambling ever led to: <ul style="list-style-type: none"> • Arguments with family/friends or others? • Missing school? 	<ul style="list-style-type: none"> • never • once or twice • sometimes • often

Scoring System

DSM-IV-MR-J (MR _ multiple response, J _ juvenile) was developed for use with adolescents who have gambled in the past year. The items on the scale are scored as follows, based on the responses provided:

- A 'yes' answer to DSM-IV-MR-J items 1 and 3 is represented by the response 'often.'
- A yes answer to item 2 is represented by 'yes.'
- A 'yes' answer to items 4 and 5 is represented by 'sometimes' or 'often.'
- A 'yes' answer to question 6 is represented by 'more than half the time' or 'every time.'
- A 'yes' answer to questions 7, 8, and 9 is represented by 'once or twice,' 'sometimes' or 'often.'

A respondent who scores FOUR 'yes' answers is classified as a 'problem gambler'.

Appendix C: Sampling Method & Data Collection

Households were first screened to identify those having any children less than 19 years of age in residence. If children were found to live in residence the interviewer asked to speak with an eligible adult resident (19 years of age or older) in order to complete the brief Household Survey. A Privacy Statement was then read in compliance with privacy standards and the adult household respondent was asked the ages and permanent residence status for all those living in the household. Only those households with youth aged 13-18 years were eligible to advance to the next stage of sampling.

Once the household information had been obtained the purpose of the Adolescent Survey was then disclosed and informed consent solicited from a parent or legal guardian for participation of any eligible youth. Youth with special needs or unable to participate due to physical, emotional or mental challenges were excluded from taking part in the study ($\approx 1.2\%$; $n=12$).

The response rate for the household screen was 70.6% with no numbers dropped; a total of 17,440 household landline telephone numbers were initially generated to conduct the household screen of which 70.6% were successfully contacted and screened for eligibility ($n=12,314$).

Only 963 households refused to take part in the screening process (5.5%) and 4163 (23.9%) could not be contacted to determine eligibility after 15+ attempts (e.g. no answer, recordings).

Among the 12,314 households successfully screened for adolescent resident status:

- 91.6% (11,276, households) did not have any eligible youth living in residence and were disqualified from the adolescent survey;
- The incidence rate for qualified households with any youth age 13-18 years was 8.4% ($n=1038$).

Administering the household screen and obtaining parental permission on average took approximately 8 to 10 minutes per household. The resulting random sample of eligible households generated for the Adolescent Survey was considered to be representative.

Adolescent Survey

There were a total of 1038 randomly selected households identified in the sampling frame with any eligible adolescents living in residence of which 87.9% agreed to participate in the study (n=912).

Among consenting households, on average, there were 1.3 eligible youth per household for a total of 1215 youth aged 13-18 years identified.

There was no quota sampling introduced for the study. Survey completion and response rates were tracked by age and sex throughout data collection to ensure representation with all age groups.

Surveys were completed with 900 youth from an eligible field of 1,215 representing a response rate of 74.1% for the adolescent survey or 65.1% of all randomly selected youth aged 13-18 years living in households throughout Nova Scotia (74.1% /87.9%).

Each adolescent survey ranged from 17 minutes to 46 minutes with an average of approximately 29 minutes. As noted previously, parental consent was obtained for all participating youth under 18 years of age.

Focal is experienced in using self-reported data for generating highly accurate survey estimates, in particular for gambling. Behavioural questions were broken into component parts that are easy and clear for respondents to understand and report. The questions were qualitatively tested with youth in advance as well as subjecting the final survey instrument to pre-testing in advance of going to field. Triangulation methods were used to collect and cross-verify key measures using multiple questions and a simplified pseudo diary approach focusing on recent play behaviour that is most likely to be in memory for respondents. Care was taken to enhance the quality of the survey data, minimize telescoping and other sources of bias associated with collection of both self-reported and observation data (e.g., halo effect, Hawthorn effect and Fundamental Attribution Error). The survey was designed using appropriate survey techniques and wording found to be effective in previous research studies including the 2007 NS Adolescent Gambling Prevalence Study and Adolescent Outcome Monitoring (OMS) undertaken by Focal on a monthly basis for Addiction Services throughout Nova Scotia.

Data Collection

Data collection was conducted from Focal Research's centralized research facilities located in Halifax Nova Scotia. All screening and survey interviewing were performed by trained, fully supervised professional interviewers.

Focal's data collection staff is comprised of permanent employees with appropriate deductions and benefits. All staff is screened, tested and full reference checks conducted. Interviewers are subject to confidentiality contracts, complete extensive training requirements and undergo on-going police checks and child registry screening to assure the safety of respondents.

Data collection staff successfully complete proprietary sensitivity training for public health, prevalence and social survey research including instruction in dealing with special populations such as youth, seniors, those in distress and rare or specialized populations such as problem gamblers and intravenous drug users. The training program is unique and designed in cooperation with public health professionals and debt counselors including a special module developed for Focal Research by John LaRocque former Coordinator of Problem Gambling Services, Addiction Services, Nova Scotia Health Promotion and former Director of the Community Services Division of the Ontario Addiction Research Foundation. Staff at Focal has also received supplementary training from staff at IWK Choices for interviewing youth and adolescents receiving treatment or support through Addiction Services.

Interviewers were fully supervised during data collection shifts and could access support from an on-call clinician or qualified associate at any time throughout data collection for additional support.

The Halifax Police Department (HRM) and RCMP (Rest of Province) were notified of the project in advance of data collection and a contact name and referral number was available to verify the project with the NSDHW. Focal also has a toll free number respondents could reference for additional information.

Data collection occurred from November 18 to December 15, 2010 (n=264), was temporarily suspended during the holiday season to minimize inconvenience for respondents and the impact of confounding factors (e.g., decreased response rate, changes in behaviour patterns), resuming January 10 to Feb 28, 2011 (n=636).

On average the adolescent interview was 29 minutes in length ranging from 22 minutes to 56 minutes depending upon respondent's answers. Given the incidence rate of randomly selected qualified households (8.4%), survey length, and repeated call-backs necessary to reach youth who are often busy the average survey completion rate over the course of the study was .4 per staff hour.

The surveys were scheduled and conducted at the convenience of the respondent within the hours of 9 a.m. to 9 p.m. daily including weekends and with full disclosure and compliance with Canadian Tri-council Ethics, national and international survey standards and codes of conduct (see Ethics below).

All surveys were conducted in English. According to the most recent 2006 Statistics Canada census data 92.5% of Nova Scotia residents are Anglophone, 3.6% are Francophone and 3.6% list another language as their 'mother tongue'.¹ In the current study there were 13 households (0.1%) eliminated during the household screen due to language barriers and 100% of adolescents randomly selected to take part in the study were proficient in English and able to complete the survey in English.

Each survey was 100% edited and random quality control checks were performed by supervisory personnel on 15% of all completed surveys whereby 135 randomly selected respondents were re-contacted to ensure data accuracy (e.g., re-asking of a selection of questions) and that the respondent was comfortable taking part in the study (e.g., courtesy of the interviewer, understanding of the questions, ability to answer in confidence, degree of comfort in answering honestly).

At the end of the survey all participating youth were asked a series of questions about the impact of taking part in the study with 13 youth (1.3%) answering in the affirmative to one or more of the three questions and referred to information and Addiction Services support options in their area:

- five youth indicated that taking part in the survey made them feel uncomfortable or concerned about some aspect of their gambling;
- eight youth indicated that taking part in survey made them want to go out and gamble;
- Four youth indicated that they had interest in speaking to someone else such as a trained counsellor or professional about their gambling.

There were approximately 68 calls required per completed survey in order to find a qualified household, screen the household, obtain parental permission and administer the survey to each adolescent with an average completion rate of .4/staff hour to achieve an overall response rate of 65.1%.

1 www40.statcan.ca/l01/cst01/demo11a-eng.htm

Data Security and Research Ethics

Focal Research adheres to the Canadian Tri-Council Ethics requirements for surveys and research with human subjects. Focal also complies with International Social Research Codes of Conduct (ISO/ESOMAR) and follows national guidelines set by the Marketing Research Intelligence Association of Canada (MRIA) for conducting social and marketing surveys having corporate “gold seal” status certification. In addition to Canadian Tri-Council Ethics, all levels of data collection, management, and analysis are subject to compliance with the Personal Information Protection and Electronic Documents Act of Canada (PIPEDA, 2004) and the Personal Information International Disclosure Protection Act (PIIDPA).

The research plan and survey materials were subject to an independent ethics review undertaken by Dr. John McMullan, St Mary’s University, Halifax Nova Scotia and the NSDHW.

Focal Research exclusively uses in-house resources for data storage and warehousing. Focal has its own independent server located on-site at its secure facility at 7071 Bayers Road, Nova Scotia Canada. In compliance with the Personal Information International Disclosure Protection Act (PIIDPA), no client information, research data, or any other information and/or files are stored on a foreign server or with an outside server or agency.

Appendix D: Weighting Scheme

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Student Enrolment by DHA and by Gender			
Areas	Junior High	Senior High	Total
Western Health Zone (Annapolis Valley, Tri-County and South Shore Regional School Boards)	7,590	8,061	16,191 (23.7%)
Northern Health Zone (Chignecto-Central Regional School Board)	5,769	6,210	11,979 (17.6%)
Eastern Health Zone (Cape Breton-Victoria and Strait Regional School Boards)	6,150	6,956	13,106 (19.3%)
Central Health Zone (Halifax Regional School Board)	12,519	14,277	26,796 (39.4%)
Sub Total	32,028	36,044	68,072
Acadian Francophone throughout province	(957)	(700)	(1,665)
Total	(32,985)	(36,744)	(69,729)
Gender	Junior High	Senior High	Total
Males	16,868	18,818	35,686
Females	16,117	17,926	34,043
Total	32,985	36,744	69,729

Appendix E:

Report Data Tables by Risk

TABLE 1 • Percent of FYGRS Risk/PG Segments with Specific Indications of Risk

Constructs	All Adolescents	No Detectable Risk	Early Risk	Intermediate Risk	Advanced Risk	Harmed Adolescent
Unweighted n's	N=900	N=592	N=241	N=35	N=22	N=10
Persistence	0.4%	0.0%	0.0%	0.0%	0.0%	44.4%
Harms: Any Negative Consequences	1.0%	0.0%	0.0%	0.0%	52.0% Single Harm	100% 2+ Harms
Preoccupation: Obsession	.2%	0.0%	0.0%	0.0%	0.0%	20.0%
Impaired Control: Begin	1.1%	0.0%	0.0%	0.0%	8.7%	80.0%
Risky Practices	2.6%	0.0%	0.0%	0.0%	65.2%	100%
Impaired Control: Continue	2.3%	0.0%	0.0%	25.7%	30.4%	60.0%
Gambling Frequently (4+ Month)	2.9%	0.0%	0.0%	17.1%	54.5%	90.0%
Risky Cognitions: Motives	5.4%	0.0%	0.0%	77.1%	60.9%	100%
Preoccupation: Desire	0.3%	0.0%	0.0%	0.0%	0.0%	33.3%
Risky Cognitions: Beliefs	16.2%	0.0%	48.6%	40.0%	56.5%	77.8%
Opportunities to Gamble	10.7%	0.0%	26.4%	37.1%	65.2%	90.0%
Influenced by Others	15.0%	0.0%	46.5%	20.6%	52.2%	90.0%
Adults Facilitate Gambling	5.0%	0.0%	10.2%	20.0%	34.8%	77.8%

TABLE 2 • Negative Consequences or Harms						
Harms Constructs	All Adolescents	No Detectable Risk	Early Risk	Intermediate Risk	Advanced Risk	Harmed Adolescent
Unweighted n's	N=900	N=592	N=241	N=35	N=22	N=10
Life Style	1.8 %	0.0%	0.0%	0.0%	30.4%	100%
Financial	0.7%	0.0%	0.0%	0.0%	0.0%	70.0%
Torment	1.7%	0.0%	0.0%	0.0%	27.3%	100%
Personal/Self	0.4%	0.0%	0.0%	0.0%	0.0%	44.4%
Social Relations	0.1%	0.0%	0.0%	0.0%	0.0%	10.0%

TABLE 3 • Risky Practices Related to Gambling						
Risky Practices	All Adolescents	No Detectable Risk	Early Risk	Intermediate Risk	Advanced Risk	Harmed Adolescent
Unweighted n's	N=900	N=592	N=241	N=35	N=22	N=10
Gamble to win back lost money	1.9%	0.0%	0.0%	2.9%	34.8%	90.0%
Borrowed money from friends, family or others to gamble	1.6 %	0.3%	0.4%	5.7%	9.1%	80.0%
Taken money or other things that do not belong to me in order to gamble	0.7%	0.0%	0.0%	0.0%	0.0%	70.0%
Used money meant for other things to gamble	2.0%	0.3%	1.2%	5.7%	21.7%	70.0%
Occasionally bet more than I can cover	1.4%	0.0%	0.8%	0.0%	21.7%	60.0%
Only hang out with others who are into gambling	1.7%	0.3%	0.4%	5.7%	21.7%	60.0%
Have sold or traded personal property in order to get money	1.1%	0.0%	0.0%	0.0%	17.4%	60.0%
Cheated at gambling in order to win	2.4%	0.0%	1.6%	8.8%	47.8%	55.6%
I have gambled where I must lie about my age or use fake ID	0.4%	0.0%	0.0%	0.0%	8.7%	20.0%

TABLE 4 • Indicators of Risky Cognitions: Motives						
Motives Constructs	All Adolescents	No Detectable Risk	Early Risk	Intermediate Risk	Advanced Risk	Harmed Adolescent
Unweighted n's	N=900	N=592	N=241	N=35	N=22	N=10
The competition and thrill of victory	9.9%	2.8%	11.8%	65.7%	60.9%	100%
To Make Money	3.8 %	0.0%	0.4%	42.9%	43.5%	100%
To Win Prizes	5.6%	0.5%	3.3%	60.0%	52.2%	90.0%
To Escape	0.7%	0.0%	0.0%	2.9%	0.0%	60.0%
Self Esteem	1.1%	0.0%	0.0%	14.3%	4.3%	44.4%
For Status	0.8%	0.0%	0.0%	2.9%	8.7%	55.6%

TABLE 5 • Risky Cognitions: Beliefs							
Beliefs	All Adolescents	No Detectable Risk	Early Risk	Intermediate Risk	Advanced Risk	Harmed Adolescent	
Unweighted n's	N=900	N=592	N=241	N=35	N=22	N=10	
Arcade machine games are games of skill not gambling.	34.8%	29.8%	41.2%	54.3%	56.5%	80.0%	
Using a system or strategy when you play machines improves your chances of winning.	6.6%	1.4%	14.6%	11.4%	27.3%	77.8%	
Some people are luckier than others so they have a better chance of winning.	19.1%	9.8%	35.5%	42.9%	43.5%	77.8%	
You are less likely to have problems with your gambling if you gamble online rather than on VLTs or at a casino.	11.3%	5.2%	21.2%	31.4%	22.7%	66.7%	
If you are on a winning streak it makes sense to continue gambling to take advantage of your luck.	7.5%	2.4%	16.7%	20.0%	8.7%	66.7%	

A lot of people are making a good living as poker players.	17.4%	9.1%	30.6%	37.1%	56.5%	66.7%
Gambling is an easy way to make money when you need it.	4.1%	0.2%	10.2%	5.7%	26.1%	50.0%
The odds of winning when you gamble on practice internet sites with fake money are the same as when you gamble with real money.	20.7%	15.0%	32.2%	31.4%	30.4%	44.4%
Most people who gamble make a lot of money.	5.3%	1.1%	14.3%	8.6%	4.3%	44.4%
When playing on-line there is no way that players can manipulate the game to give themselves an advantage.	18.7%	13.6%	28.6%	29.4%	30.4%	40.0%
After you have been gambling and losing for awhile your chances of winning improve	4.4%	1.3%	11.4%	8.6%	0.0%	33.3%
You can tell when the gambling machine is about to pay out.	5.7%	1.9%	14.2%	5.7%	8.7%	33.3%
If you have been gambling and losing for awhile you should keep gambling to win back your losses.	2.2%	0.2%	5.7%	5.7%	9.1%	20.0%

TABLE 6 • Involvement in Non-Commercial (Informal) forms of Gambling Behaviours Over the Last Year						
Gambling Activities	All Adolescents	No Detectable Risk	Early Risk	Intermediate Risk	Advanced Risk	Harmed Adolescent
Unweighted n's	N=900	N=592	N=241	N=35	N=22	N=10
Poker in-person with friends or family in the past year	8.2%	2.7%	11.4%	34.3%	56.5%	80.0%
Other card games in-person such as Hearts, Auction 45's, Cribbage, old Maid in the past year for money	6.1 %	1.9%	8.6%	28.6%	34.8%	70.0%
Playing in Sports Pools with friends or family in the past year	4.6%	1.6%	6.5%	17.1%	30.4%	55.6%
Betting on outcomes for video games (e.g., Xbox and other personal in-home systems) in the past year	1.8%	0.5%	2.4%	2.9%	13.0%	44.4%
'bloody knuckles' in the past year	1.7%	0.3%	0.8%	2.9%	30.4%	44.4%
Betting on the outcomes of school yard fights or physical competitions in the past year	1.6%	0.3%	0.8%	5.7%	21.7%	40.0%
Betting on the outcome of non-professional sports games that you play in or watch (school, local or minor sports) in the past year	3.2%	1.1%	4.1%	11.4%	26.1%	30.0%
Betting money or things of value on a dare or challenge in the past year	3.0%	0.9%	3.3%	17.1%	21.7%	30.0%
Betting on outcomes playing arcade games at an entertainment centre in the past year	0.4%	0.2%	0.0%	2.9%	0.0%	22.2%
Gambling with dice in the past year	0.7%	0.0%	2.0%	0.0%	0.0%	20.0%

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Coin pitching, closest to the wall, in a circle, winner takes all in the past year	1.4%	0.3%	0.8%	5.9%	21.7%	20.0%
Betting on outcomes for other games of skill you or your friends watch or play (e.g., darts, pool, bowling, golf) in the past year	2.5%	0.8%	2.8%	14.3%	30.4%	0.0%
Betting on Any other bets made with co-workers, friends or family in the past year	0.2%	0.0%	0.8%	0.0%	0.0%	0.0%

TABLE 7 • Involvement in Organized (Commercial) Forms of Gambling Behaviours Over the Last Year						
Gambling Activities	All Adolescents	No Detectable Risk	Early Risk	Intermediate Risk	Advanced Risk	Harmed Adolescent
Unweighted n's	N=900	N=592	N=241	N=35	N=22	N=10
Played arcade games to win prizes, or for tickets that can redeemed for prizes	17.2%	11.5%	20.0%	48.6%	69.6%	80.0%
Purchased 50/50 draws	16.7 %	9.9%	20.8%	62.9%	60.9%	80.0%
Purchased charity or fundraising raffle tickets (e.g. school, sports)	20.1%	13.7%	22.9%	57.1%	87.0%	70.0%
Played Bingo in bingo halls or charity events where you purchase the cards with your own money	7.2%	3.3%	10.2%	25.7%	39.1%	40.0%
Played Bingo in bingo halls or charity events where you mainly observed others playing	6.3%	3.5%	8.2%	20.0%	39.1%	22.2%
Played Bingo for money on TV or by satellite	2.3%	0.8%	1.2%	14.3%	30.4%	22.2%
Gambled at a charity casinos or fundraising Monte Carlo nights	0.5%	0.3%	0.4%	0.0%	4.3%	10.0%
Bought Atlantic Lottery Instant lottery tickets (Scratch 'n Wins) or break-opens at a store	1.7%	0.3%	3.3%	0.0%	21.7%	10.0%
Played poker games such as Texas Hold'em in tournaments in-person	1.0%	0.0%	1.2%	2.9%	17.4%	10.0%
Bought weekly lottery draw games such as Lotto 6/49 or Lotto Max at a store	0.7%	0.2%	0.8%	2.9%	13.0%	0.0%
Bet on sports through other services or sports pools	0.5%	0.0%	1.2%	2.9%	4.3%	0.0%

TABLE 9 • Other Correlates with Harmful Gambling						
Gambling Activities	All Adolescents	No Detectable Risk	Early Risk	Intermediate Risk	Advanced Risk	Harmed Adolescent
Unweighted n's	N=900	N=592	N=241	N=35	N=22	N=10
Indication of Risky Behaviours Ever	9.7%	4.3%	14.6%	11.4%	68.2%	100%
Indication of Risky Behaviours in Last Year	4.1%	1.1%	6.5%	6.1%	36.8%	87.5%
Males	52.0%	51.6%	49.4%	61.8%	65.2%	77.8%
Females	48.0%	48.4%	50.6%	38.2%	34.8%	22.2%
Aged 13 - 14	38.6%	42.5%	28.5%	11.4%	21.7%	0.0%
Aged 15 - 16	35.9%	35.6%	33.1%	54.3%	43.5%	40.0%
Aged 17 - 18	25.5%	19.2%	38.3%	34.3%	34.8%	60.0%

TABLE 10 • Adult Involvement in Adolescent Gambling						
Over the last year did any adult's 19 years of age or older	All Adolescents	No Detectable Risk	Early Risk	Intermediate Risk	Advanced Risk	Harmed Adolescent
Unweighted n's	N=900	N=592	N=241	N=35	N=22	N=10
Include you in poker games or card game played for money	7.6%	2.5%	12.2%	28.6%	34.8%	80.0%
Place bets for you on the outcome of sports events	2.0%	0.6%	0.8%	8.6%	17.4%	66.7%
Buy any lottery tickets for you	12.1%	8.8%	15.1%	26.5%	30.4%	60.0%
Include you in sports pools	4.0%	2.0%	4.5%	8.6%	26.1%	55.6%
Gamble online in front of you for real money	4.0%	1.4%	6.1%	8.8%	26.1%	55.6%
Take you to play Bingo at a Bingo Hall	11.9%	7.4%	16.7%	34.3%	39.1%	40.0%
Take you to gamble with them at the Casino	0.1%	0.0%	0.4%	0.0%	0.0%	0.0%
Gamble with you on VLTs at a bar or pub	0.4%	0.3%	0.4%	2.9%	0.0%	0.0%
Gamble online with you for real money	0.1%	0.0%	0.0%	0.0%	4.3%	0.0%
Pay for any other forms of gambling for you that we have not mentioned	0.3%	0.5%	0.0%	0.0%	0.0%	0.0%