Gambling Harms in Massachusetts: Evidence from the BGPS and BOPS

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Executive Summary

Until quite recently, gambling harms have largely been identified with the clinical entity of problem gambling. In the past decade, however, a broader view of the impacts of gambling has emerged with a shift in focus from problem gambling to 'gambling-related harm.' This approach recognizes that there are many more people harmed by gambling than reflected in the rates of problem gambling alone. Similar to public health and health promotion approaches to alcohol consumption, adoption of this approach to gambling consumption recognizes that gambling has some positive impacts on society, including generation of revenues to governments, industry employment, and new leisure options for communities, and that the majority of people gamble without experiencing any evident harm.

A public health approach to understanding and minimizing gambling harm requires: (a) a consistent definition of the concept, (b) a description of the scope of gambling harm, and (c) the use of measures that can support evidence-based practice. While harmful gambling can be challenging to define and measure, significant research has been done to classify the impacts associated with heavy gambling involvement and to develop measures for use in population surveys.

The goal of this report is to build on this emerging research area of investigating gambling harms as these are reported to have been experienced by gamblers. The recently adopted *Research Strategy for Gaming in Massachusetts* emphasizes the importance of research results that will inform programming to prevent and mitigate gambling harm in Massachusetts. In support of this initiative, the present report seeks to identify gambling harms reported by key demographic groups and without regard to the prevalence of problem gambling among members of these groups.

The analyses presented here draw from two population surveys that were carried out in Massachusetts in 2013 and 2014, prior to the opening of any casinos in the Commonwealth. These surveys were the Baseline General Population Survey (BGPS) and the Baseline Online Panel Survey (BOPS). While recognizing that the BOPS respondents were much more likely to engage in heavy gambling and to experience gambling problems compared with the BGPS respondents, the decision to combine the samples was a practical one to create a sample sufficient to analyze the **relative** prevalence of gambling harms among different demographic groups. While differences in the samples and survey methods can limit the conclusions drawn, combining data from different sources often has positive benefits and can yield important policy-relevant findings. We further chose to focus on regular gamblers because only these individuals were routed through the section of the questionnaire that assessed gambling harms. For the present analysis, endorsements of gambling harms based on responses to these survey questions were collapsed into six categories: financial, health, emotional/psychological, family/relationships, work/school, and illegal acts. Individuals experiencing one or more harms (n = 701) were included in the analysis.

In addition to differences in gambling participation and problem gambling rates, the BOPS respondents were more likely to be male and to have annual household incomes under $100,000. Since younger individuals tend to have lower incomes, it is likely that some of the observed differences in the distribution of gambling harms are correlated. Another aspect of these data worth noting is that all of the reported harms are based on self-report and it is possible that participants in some demographic subgroups may have differentially under-reported actual harms.

Analysis of gambling-related harms among regular gamblers in the BGPS and BOPS provides insight into several demographic groups that appear to be at a heightened risk for gambling harm when engaging regularly in one or more types of gambling. The results underscore the importance of broadening our focus on the impacts of gambling to highlight harms among individuals who do not meet diagnostic criteria for problem gambling. However, it is important to acknowledge that this study does not assess community-level gambling harm. It is quite possible that the wider social impacts of gambling harm are several magnitudes greater than the individual-level harms presented in this report.

It is interesting to consider each of the harm domains in terms of which demographic groups are most at risk. For example, males, adults under 30, Hispanics, Blacks and regular gamblers with one child in the household were significantly more likely to endorse health harms than other groups. The pattern is quite similar for financial harms. Young adults, Hispanics and Blacks were significantly more likely to report experiencing emotional/psychological harms than other groups. These same groups, along with regular gamblers with any children in the household, were significantly more likely to endorse family/relationship harms compared to other groups. Adults under 50 and regular gamblers with one or two children in the household were significantly more likely than other groups to endorse work/school harms. Harms related to illegal acts were significantly higher among adults under 50 compared with older adults. Finally, males, adults under 30, and regular gamblers with one or two children in the household were significantly more likely than other groups to endorse harms across more than one domain.

Higher rates of financial and health harms among males, young adults, Blacks and Hispanics suggest the importance of raising awareness about gambling-related harm with these groups. One important step toward mitigating gambling harm within communities would be to educate community-based organizations about the extent of gambling harm in their communities compared to levels of awareness and availability of specialized services. Beyond community organizations, health professionals and financial counselors would benefit from a better understanding of the scope of gambling harm among their clientele as well as some knowledge of how to sensitively ask their clients about their gambling and the gambling of their family members and friends. The high rate of emotional/psychological harms among Hispanics and Blacks underscores the importance of raising awareness of gambling harm in these communities while the high rate of emotional/psychological harms among young adults suggests the need to raise awareness of gambling harm among high school and college counseling staffs.

A particular concern, given the higher rates of all types of gambling harm among regular gamblers with children in the household, is to raise awareness and improve screening among professionals working with families and among community organizations concerned with child welfare. Communities and professionals would benefit from a better understanding of the greater risk of gambling harm in households where one or both parents gamble regularly.

Both the BGPS and the BOPS have some limitations that must be acknowledged. With regard to the BGPS, one potential limitation is the 36.6% response rate attained in the survey. Another limitation of the BGPS is that the survey was restricted to adults living in households and did not include adults living in group quarters, incarcerated individuals, or homeless individuals. A third limitation is that the questionnaire was translated into Spanish but not into other languages. Like other prevalence surveys, the BGPS is a cross-sectional 'snapshot' of gambling and problem gambling at a single point in time which limits our ability to draw any causal conclusions from reported associations in the data. With regard to the BOPS, the main limitation is the non-representative nature of online panels and the fact that a non-random minority of people do not use the Internet, and thus are not eligible to be part of an online panel. A limitation of the decision to combine the samples for the present

analysis is that the results cannot confidently be generalized to Massachusetts as a whole. A final limitation relates to the nature of self-report in surveys more generally which raises the possibility that respondents in the BGPS and BOPS under-reported their gambling behavior and harms due to social stigma.

Introduction

Gambling and problem gambling exist on a continuum that stretches from non-gambling, at one end, to problem gambling, at the other end. In Massachusetts, 2% of adults aged 18 and over meet criteria for problem gambling and another 8% are classified as at-risk for problem gambling (Volberg et al., 2017). Problem gambling is associated with a number of physical and emotional health issues, including depression, anxiety, suicidal ideation, substance use and addiction (Hodgins & el-Guebaly, 2009; Petry, 2005). While most of these consequences are associated with problem gambling, there is research showing that heavy gambling is also associated with harm in individuals who would not meet criteria for the clinical entity (e.g., Afifi, Cox, Martens, Sareen, & Enns, 2010; Browne et al., 2017).

Until quite recently, gambling harms have largely been identified with the clinical entity of problem gambling. For example, the most widely used survey measures and clinical assessments have been developed with the primary purpose of identifying people who are likely suffering from problem gambling. The assumption underlying this approach is that gambling harm can be minimized by treating those with this condition or by preventing people from progressing to this state.

In the past decade, however, a broader view of the impacts of gambling has emerged internationally with a shift in focus from problem gambling to 'gambling-related harm' (Abbott et al., 2018; Browne et al., 2017; Langham et al., 2016; Shannon, Anjoul, & Blaszcynski, 2017). This approach recognizes that there are many more people harmed by gambling than reflected in the rates of problem gambling alone. Similar to public health and health promotion approaches to alcohol consumption, adoption of this approach to gambling consumption recognizes that gambling is regulated by governments which directly benefit from the revenues generated. This approach also recognizes that gambling has some positive impacts on society, including generation of revenues to governments, industry employment, and new leisure options for communities (Williams, Rehm, & Stevens, 2011). Finally, as with alcohol consumption, the majority of people gamble without experiencing any evident harm (Currie et al., 2017; Williams, Volberg, & Stevens, 2012).

Operationalizing Gambling Harm

A public health approach to understanding and minimizing gambling harm requires: (a) a consistent definition of the concept, (b) a description of the scope of gambling harm, and (c) the use of measures that can support evidence-based practice.

Defining Gambling Harm

As Browne and colleagues (2017) note, it can be helpful to compare a public health approach to understanding gambling harm with other theoretical approaches that have been adopted in the gambling studies field. For example, the **consumer/self-responsibility** model considers gambling as a consumer good. This classic economic view assumes that consumers are rational agents with full information and multiple product options from which to choose. As a consequence, any harms that arise are due to faulty decision-making by individual consumers (Collins & Lapsley, 2003; Forrest, 2013; Productivity Commission, 1999). This approach is embedded in the 'Reno model' which has provided a foundation for the development of 'responsible gambling' measures in many jurisdictions internationally (Blaszcynski, Ladouceur, & Shaffer, 2004; Collins et al., 2015). Despite widespread acceptance, the 'Reno model' has recently come under scrutiny. Critics argue that this approach ignores characteristics of the product, environment and consumer that may lead to over-consumption. They further

contend that this approach does not consider harms that extend beyond the individual and that it significantly underestimates the role of regulation in enhancing or undermining responsible consumption (Abbott, 2020; Bühringer, Kotter, Czernecka, & Kräplin, 2018; Delfabbro & King, 2017a; Hancock & Smith, 2017).

The most common approach to understanding gambling harm in the United States has been the **medical** model, epitomized by inclusion of the disorder in the DSM since 1980 (American Psychiatric Association, 1980, 1994, 2013). The medical model considers problem gambling as a discrete disease experienced by an individual and best addressed or treated at the individual level (Browne et al., 2017; Castellani, 2000; Reith, 2007). As with the consumer/self-responsibility model, this approach does not recognize harms that extend beyond the individual. Additionally, this approach does not recognize that a potentially large proportion of the population may experience harm related to their gambling that does not rise to the level of a clinical diagnosis or lead the individual to seek help.

A **harm reduction** or harm minimization approach to gambling emerged internationally in the 1990s, primarily in the context of attempts to address youth gambling (Dickson, Derevensky, & Gupta, 2002, 2004). Harm reduction focuses on prevention of harm rather than prevention of involvement in an activity or use of a substance. This approach has been successfully applied to the consumption of tobacco, alcohol, and illicit drugs. Rather than emphasizing the individual consumer, a harm reduction approach focuses on gambling products as the underlying source of harm (Browne et al., 2017). This approach views the likelihood of experimentation with gambling as part of the process of lifespan development and seeks to facilitate appropriate limit setting rather than enforcing abstinence.

A **public health** approach based on the metaphor of infectious disease is not an entirely new lens to understand gambling harm (Korn & Shaffer, 1999; Volberg, 1994). However, the public health approach has received much greater attention internationally than in the United States. This approach contrasts with the medical model that views problem gambling as a discrete disease as well as the consumer/self-responsibility model discussed above. A classic public health approach to gambling harm considers the gambler as the *host*, gambling products as the *agent*, time and money spent gambling as the *vector*, and gambling venues as well as the gambler's personal, social and cultural environments as the *environment*. As it relates to gambling, the public health approach adopts a population approach and seeks to promote healthy communities, resilient individuals, and healthy environments (Abbott et al., 2018; Browne et al., 2017).

As this quick review makes clear, harmful gambling can be challenging to define and there is, as yet, no broad consensus on the best way of assessing it. The typical approach has been to identify harms experienced by people with subclinical levels of problem gambling symptomatology (e.g., Canale, Vieno, & Griffiths, 2016; Currie, Miller, Hodgins, & Wang, 2009; Raisamo, Mäkelä, Salonen, & Lintonen, 2015). However, this approach does not adequately assess harm caused to other people since questions in assessment instruments usually refer only to harms experienced and reported by the individual. In addition, some of the scoring items (e.g., feeling guilty about gambling) do not necessarily entail unambiguous harm.

Two comprehensive definitions of gambling harm have been proposed in recent years (Abbott et al., 2018; Langham et al., 2016). Both represent an important evolution in the conceptualization of gambling harm consistent with population health frameworks. Both definitions distinguish between gambling behavior and gambling-related harm, thereby separating harmful gambling from problem gambling status. Both definitions also expand the focus beyond harms experienced by the individual gambler to include harms experienced by family members and communities. In contrast to the international definition (Abbott et al., 2018), the Australian definition (Langham et al., 2016) explicitly captures harms that occur over time, reflecting an important

expansion in addressing gambling harm from a public health perspective. The Australian definition also explicitly aligns with health state valuation methodologies.

The Scope and Nature of Gambling Harm

There have been attempts to classify the impacts associated with excessive gambling involvement since the mid-1990s. At that time, most of what was known about the impacts of problem gambling came from studies of members of Gamblers Anonymous or from people who sought professional help for their gambling problems. The results of these studies must be interpreted with caution because of the small, atypical samples involved. Another limitation to these studies is that people in treatment for a gambling problem, as well as those in self-help, are not representative of people experiencing gambling problems in the general population (Volberg, 2001).

Early efforts to categorize the impacts of problem gambling focused on several life areas, including individual or personal, familial, workplace, financial and legal domains (Cox, Lesieur, Rosenthal, & Volberg, 1997; National Research Council, 1999; Volberg, 2001). More recently, the Australian research team mentioned previously developed a taxonomy based on focus groups, interviews and posts to problem gambling support forums as well as an online panel survey. This taxonomy distinguished between gambling harms at three levels, including the person who gambles, affected others, and the broader community (Browne et al., 2017; Langham et al., 2016). The dimensions of harm identified in this taxonomy include:

- Financial harm
- Relationship disruption, conflict or breakdown
- Emotional or psychological distress
- Decrements to health
- Cultural harm
- Reduced performance at work or study
- Criminal activity

Measuring Gambling Harm

Despite lack of consensus regarding the concept as well as the scope of gambling harm, researchers have attempted to monitor the aggregate impacts of gambling on communities for some time. Many of these researchers have utilized the CPGI[1] to identify gambling-related harms (Canale et al., 2016; Raisamo et al., 2015). Other researchers have combined items from several different problem gambling instruments (Castrén, Perhoniemi, Kontto, Alho, & Salonen, 2018; Salonen, Latvala, Castrén, Selin, & Hellman, 2017).

Following the development of a taxonomy of gambling-related harms, the Australian research team created a 72-item instrument for use in population surveys (Browne, Bellringer, et al., 2018; Browne et al., 2017).[2] In addition to studies in Australia and New Zealand, this instrument was recently included in a survey in Finland, carried out as part of a national effort to evaluate reform of the Finnish gambling market (Browne, Volberg, Rockloff, & Salonen, 2020, under review). Recognizing the challenge of adding a 72-item checklist to population surveys, the Australian researchers subsequently developed a 10-item brief harms scale (Browne, Goodwin, & Rockloff, 2018).

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[1] Few researchers have used the full 33 item CPGI and the acronym is now commonly used to refer to the shorter, nine-item Problem Gambling Severity Index (PGSI). We have adopted the same convention in this report.

[2] This effort to evaluate the total impact of gambling harms on quality of life used an established World Health Organization 'health state valuation methodology' (also known as the Burden of Disease approach).

Significant criticism has been aimed at the 72-item Gambling Harms Checklist as well as the 10-item Short Gambling Harm Screen since their development. One key concern is that the instrument only assesses harm to the individual and not harm to others. Another concern is that the instrument includes several items that do not represent significant or unambiguous harm (Delfabbro & King, 2017b, 2019; Shannon et al., 2017). A third concern is that the instrument contains an implicit value judgement about gambling as a less than worthy form of entertainment.

An alternative approach to assessing gambling-related harm—and the approach adopted in this report—is to use the items that make up the 'Problems' section of the 14-item PPGM. These items comprehensively assess the range of harms associated with excessive gambling but only ask about clear and 'significant' harm in each of these categories. Further, the PPGM asks about problems/harms caused to the person or someone close to them (see Appendix A for specific wording of these questions). While the PPGM items specifically seek information about harms caused to people apart from the survey respondent, it is important to acknowledge that all of the questions rely on self-report and may not accurately reflect the breadth or depth of harms experienced by others.

It would be extremely challenging to assess community-level harm in population surveys. While we can speculate that the wider social impacts would be several magnitudes greater than what is measured in population surveys, community-level harm is a problematic and contentious domain of harm due to the difficulty of measuring its extent. That said, alternate methodologies to estimate community-level harm are being investigating (Pugh, 2020 in preparation; Wardle, Keily, Thurstain-Goodwin, & Astbury, 2011).

Purpose of Report

The goal of this report is to build on the emerging research area of investigating gambling harms as these are reported to have been experienced by gamblers. The recently adopted *Research Strategy for Gaming in Massachusetts* emphasizes the importance of research results that will inform programming to prevent and mitigate gambling harm in Massachusetts (Glynn & Vander Linden, 2019). In support of this initiative, the present report seeks to identify gambling harms reported by key demographic groups and without regard to the prevalence of problem gambling among members of these groups. The current analysis examines the distribution of reported gambling harms in several demographic groups in Massachusetts, including gender, age, race/ethnicity and number of children in the household.

Overview of Methods

The analyses presented below draw from two population surveys that were carried out in Massachusetts in 2013 and 2014, prior to the opening of any casinos in the Commonwealth. These surveys were the Baseline General Population Survey (BGPS) and the Baseline Online Panel Survey (BOPS). In this section, we provide a brief overview of the methods employed in these surveys.

While there are some differences in the gambling behavior of the BGPS and BOPS respondents, the decision to combine the samples was practical and undertaken to create a sample sufficient to analyze the **relative** prevalence of gambling harms among different demographic groups. While differences in samples and survey methods can limit the conclusions drawn, combining data from different sources often has positive benefits and can yield important policy-relevant findings (Elliott, Raghunathan, & Schenker, 2018).

Combining the BGPS and BOPS samples comes with advantages and disadvantages. The clearest advantage is the increase in the sample size available for analysis which is accompanied by narrower confidence intervals around the findings. The main disadvantage is that we are not able to clearly define the larger population that the sample represents. We have therefore not weighted the combined sample to the Massachusetts adult population. However, it is important to acknowledge this feature of the study as a limitation and to be cautious about generalizing the results to Massachusetts as a whole.

BGPS Recruitment and Sample
In carrying out the BGPS, an Address-Based Sampling (ABS) approach was employed whereby a random sample of Massachusetts addresses was initially chosen, with over-selection of Western Massachusetts addresses to ensure acceptable precision in establishing problem gambling prevalence in this part of the state. All selected addresses were mailed a letter and subsequent postcards inviting the adult (18+) household member with the most recent birthday to complete an online (WEB) survey. Households where no response was received after four weeks were mailed paper versions of the questionnaire and invited to alternatively complete the survey via this modality and return it by mail (SAQ). Households where no response was received after another four weeks were called on their landline (this number was available in 78% of cases) and invited to answer the questions over the telephone (CATI). The BGPS survey was launched on September 11, 2013 and data collection ended on May 31, 2014. A complete description of the methodology utilized for this survey can be found in the BGPS report (Volberg et al., 2017). A final sample of 9,578 respondents was obtained with a 36.6% AAPOR RR3 response rate (American Association for Public Opinion Research, 2016).[3] Forty percent of the questionnaires were self-administered online, 52% were completed using the self-administered paper-and-pencil format, and 7% were completed by telephone interview. A total of 152 self-administered questionnaires and/or telephone interviews (1.6%) were completed in Spanish.

BOPS Recruitment and Sample
Ipsos Public Affairs (Ipsos) conducted the SEIGMA Baseline Online Panel Survey (BOPS). Ipsos maintains an online panel of individuals across the country who have agreed to participate in research studies. The Massachusetts panel contains approximately 17,000 individuals. When respondents joined the Ipsos panel, they

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[3] The response rate calculations recommended by the American Association for Public Opinion Research (AAPOR) are commonly used in academic research. A Response Rate 3 (RR3) is equivalent to the Council of American Survey Research Organizations (CASRO) rate, which is the number of completed interviews divided by the estimated number of eligible respondents.

provided demographic information about themselves and their household (e.g., age, gender, state of residence, county of residence). Ipsos used this information to email a stratified sample of respondents by age, gender and region (Western versus Eastern Massachusetts) that was proportional to the number of people in these groups as reported by the U.S. Census. Over the time period in which the survey was in the field, Ipsos drew additional replicate samples and monitored completion rates until at least 5,000 complete surveys were obtained. To obtain a final sample of 5,000, Ipsos supplemented their own online panel sample with Massachusetts online panel members from seven partner vendors. BOPS was launched in late October 2013, and data collection ended in late March 2014 to run coincident with data collection in the BGPS. A complete description of the methodology utilized for this survey and a comparison of the BGPS and BOPS survey methodologies can be found in the BOPS report (Williams et al., 2017). Of the 26,913 people who began the BOPS, 18,580 were deemed to be not eligible (primarily out-of-state panelists), 2,946 quit before finishing, 293 were excluded because of a full age x gender quota, and 48 were removed because of data quality issues. In the end, a total of 5,046 completed surveys were obtained.

Demographics of the BGPS and BOPS Samples

The BGPS survey resulted in a total of 9,578 respondents and the BOPS survey resulted in a total of 5,046 respondents. Table 1 provides details of select demographic characteristics of the BGPS and BOPS samples.

Table 1: Select Demographics of the BGPS and BOPS Samples (unweighted)

		Baseline General Population Survey (BGPS) (N = 9,578)		Baseline Online Panel Survey (BOPS) (N = 5,046)	
		%	95% CI	%	95% CI
Gender	Male	39.7	(38.8, 40.7)	47.1	(45.7, 48.5)
	Female	59.1	(58.1, 60.1)	52.9	(51.5, 54.3)
	Missing	1.1	(0.9, 1.4)	0.0	NA
Age	18 - 34	14.1	(13.4, 14.8)	28.2	(27.0, 29.5)
	35 - 64	51.0	(50.0, 52.0)	53.1	(51.7, 54.4)
	65+	30.0	(29.1, 30.9)	18.7	(17.6, 19.8)
	Missing	4.9	(4.5, 5.4)	0.0	NA
Ethnicity	Hispanic	5.0	(4.6, 5.5)	5.2	(4.6, 5.9)
	Black	3.8	(3.5, 4.2)	4.1	(3.6, 4.7)
	White	83.0	(82.3, 83.8)	85.2	(84.2, 86.1)
	Asian	3.8	(3.4, 4.2)	3.9	(3.4, 4.5)
	Other or missing	4.3	(3.9, 4.7)	1.6	(1.3, 2.0)
Education	High School or less	18.0	(17.2, 18.7)	22.6	(21.5, 23.8)
	Some college or BA	52.2	(51.2, 53.2)	61.6	(60.3, 62.9)
	Graduate degree	27.9	(27.0, 28.8)	15.2	(14.3, 16.3)
	Missing	1.9	(1.7, 2.2)	0.5	(0.4, 0.8)
Annual Household Income	Less than $15,000	8.8	(8.3, 9.4)	9.0	(8.3, 9.9)
	$15,000 - <$30,000	10.8	(10.2, 11.4)	13.7	(12.8, 14.7)
	$30,000 - <$50,000	13.9	(13.2, 14.6)	17.6	(16.5, 18.6)
	$50,000 - <$100,000	25.9	(25.0, 26.8)	30.7	(29.4, 32.0)
	$100,000 - <$150,000	14.3	(13.6, 15.0)	12.6	(11.7, 13.5)
	$150,000 or more	11.8	(11.2, 12.5)	5.4	(4.8, 6.0)
	Missing	14.5	(13.8, 15.2)	11.1	(10.2, 12.0)

Table 1 shows that BOPS respondents were significantly more likely than BGPS respondents to be male, under the age of 35, and White. BOPS respondents were significantly less likely than BGPS respondents to have attended college and to have annual household incomes over $100,000. Appendix B provides additional details about the demographic, health status, and gambling behavior of the BGPS and BOPS samples.

Analytic Approach

An important methodological issue raised in relation to our original BOPS report (Williams et al., 2017) concerned whether people experiencing gambling problems identified in the unweighted BOPS were systematically different from people experiencing gambling problems identified in the unweighted BGPS. If there were systematic differences, it would be unwise to combine the people experiencing gambling problems from the two samples for analytic purposes. A multivariate analysis found that there were significant differences between people experiencing gambling problems in the BGPS versus the BOPS, although the magnitude of the differences was modest. The group differences were attributable primarily to five variables, including nativity, age, region of Massachusetts, participation in extreme sports and current tobacco use. We concluded that while the BOPS problem gamblers were similar to the BGPS problem gamblers, there were several important differences that could not be adjusted for using weights. We therefore adopted a conservative approach and reported results separately for the two groups of people experiencing gambling problems (Williams et al., 2017).

We have taken a different approach in the present report. While recognizing that there are substantially higher rates of heavy gambling and problem gambling among the BOPS respondents compared with the BGPS respondents, we believe that combining the samples in the present instance is justified since we are not attempting to produce accurate prevalence rates of gambling-related harms in the Massachusetts population. Instead, our focus is on the **relative** prevalence of gambling-related harms among different demographic groups.

Definition of Regular Gamblers

As the same questionnaire was used for both the BGPS and BOPS, identical questions about gambling participation and the importance of gambling as a recreational activity were utilized to define 'regular gamblers.' We chose to focus on regular gamblers because only these individuals were routed through the PPGM section of the questionnaire. See Appendix A for the specific wording of the questions about gambling participation.

From the total of 9,578 BGPS and 5,046 BOPS respondents, individuals were considered to be regular gamblers if they met one of three criteria:

(1) Participated in traditional lottery, instant games, raffle tickets, daily lottery games, sports betting, bingo, casino, horse racing, private betting, purchased high risk stocks, or online gambling at least once a month or reported that they don't know;
(2) Responded to a question about whether gambling is an important recreational activity; or
(3) Gambling replaced other recreational activities in the past five years.

Based on these criteria, 3,993 respondents from the BGPS and 3,102 respondents from the BOPS were identified as regular gamblers. This resulted in a dataset of 7,095 respondents hereby referred to as the BGPS-BOPS combined dataset. [4] Analyses in this report are based on this combined dataset and all results are unweighted.

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[4] Of the 7,095 regular gamblers, 6,186 (87.2%) gambled monthly or more often, 886 (12.5%) did not gamble monthly, but indicated some level of importance to gambling as a recreational activity, and 23 (0.3%) did not gamble monthly or indicate any level of importance to gambling as a recreational activity, but did indicate that gambling replaced other recreational activities in the past five years.

Demographics of Regular Gamblers from BGPS-BOPS

Table 2 presents information about the demographic characteristics of the BGPS-BOPS combined dataset of regular gamblers. As the table shows, the dataset was composed of 51.5% males, ranging in age from 18 to 100 years old (with a median age of 53.0 years old), and 83.9% White.

Table 2: Demographics of BGPS-BOPS Regular Gamblers

		BGPS-BOPS (N=7,095)		
		N	**%**	**SE**
Gender	Male	3,651	51.5	(50.3, 52.6)
	Female	3,408	48.0	(46.9, 49.2)
	Missing	36	0.5	(0.4, 0.7)
Age	18 - <30	892	12.6	(11.8, 13.4)
	31 - <50	2,123	29.9	(28.9, 31.0)
	51 - <65	2,175	30.7	(29.6, 31.7)
	65+	1,736	24.5	(23.5, 25.5)
	Missing	169	2.4	(2.1, 2.8)
Ethnicity	Hispanic	395	5.6	(5.1, 6.1)
	White	5,956	83.9	(83.1, 84.8)
	Black	298	4.2	(3.8, 4.7)
	Asian	219	3.1	(2.7, 3.5)
	Some other race	77	1.1	(0.9, 1.4)
	Missing	150	2.1	(1.8, 2.5)
Education	High school or less	1,707	24.1	(23.1, 25.1)
	Some college or BA	4,094	57.7	(56.6, 58.8)
	Graduate school	1,186	16.7	(15.9, 17.6)
	Missing	108	1.5	(1.3, 1.8)
Income	Less than $15,000	672	9.5	(8.8, 10.2)
	$15,000 - <$30,000	881	12.4	(11.7, 13.2)
	$30,000 - <$50,000	1,157	16.3	(15.5, 17.2)
	$50,000 - <$100,000	2,072	29.2	(28.2, 30.3)
	$100,000 - <$150,000	960	13.5	(12.8, 14.3)
	$150,000 or more	556	7.8	(7.2, 8.5)
	Missing	797	11.2	(10.5, 12.0)
# Children in Household	0	4,835	68.1	(67.1, 69.2)
	1	907	12.8	(12.0, 13.6)
	2	715	10.1	(9.4, 10.8)
	3+	313	4.4	(4.0, 4.9)
	Missing	325	4.6	(4.1, 5.1)

Harms Associated with Gambling

Although gamblers themselves primarily experience the negative consequences of gambling, gambling-related harms also affect families, friends, and communities. The following impacts are key indices of the negative socioeconomic effects of gambling that were assessed using the PPGM in the BGPS and the BOPS:

- Financial problems due to gambling, including
    - Bankruptcies

- Health problems due to gambling, including
  - Need to seek medical or psychological help
- Mental health problems due to gambling, including
  - Suicidal thoughts
  - Suicide attempts
- Family or relationship problems due to gambling, including
  - Domestic violence
  - Separation or divorce
  - Neglect of children or family
  - Child welfare involvement
- Work or school problems due to gambling, including
  - Missing work or school
  - Losing a job or dropping out of school
- Participation in illegal activities due to gambling, including
  - Illegally obtaining money
  - Arrested, convicted, and/or Incarcerated

Careful readers will notice that while we distinguish between physical health harms and mental health harms in this report, the wording of the questions assessing these conceptually different harms is not entirely distinct. This arose from the decision in 2013 to include both the CPGI and the PPGM in the two baseline Massachusetts surveys. Concern about redundancy and respondent fatigue led us to retain the CPGI item related to "health" and drop the PPGM item inquiring about "physical health" which asks about "health problems and injury." To achieve full coverage of the harm domains, we retained a separate PPGM "mental health" item which, like the CPGI "health" item, specifies anxiety as a type of health concern. While the question wording does not clearly distinguish between physical and mental health, the fact that the questions about physical and mental health are endorsed at different rates suggests that respondents did consider them distinct.

Careful readers will also notice that the initial question about family impacts inquired whether the respondent's gambling had caused significant problems in relationships with their spouse/partner, other family members, or important friends. While this question relates to families with and without children, subsequent questions inquired specifically about impacts on children. A separate question in the survey asked about the number of children under 18 living in the respondent's household. The latter question was used to determine whether respondents lived in households with children.

Appendix A presents the survey questions utilized in the BGPS and BOPS to assess these impacts. Table 3 provides details of the gambling harms endorsed by the 7,095 BGPS-BOPS regular gamblers.

Table 3: Gambling Harms in the Past 12 Months Among Regular Gamblers

Harm Category	Survey Question	Gambling Harm	N	%	95% CI
Financial	GP6a	Financial problems because of gambling	396	5.6	(5.1, 6.1)
	GP6b	Filed for bankruptcy because of gambling	38	0.6	(0.4, 0.8)
Health	GP7a	Health or stress problems because of gambling	397	5.6	(5.1, 6.2)
	GP7b	Gambling-related health problems resulting in seeking medical or psychological help	85	1.2	(1.0, 1.5)

Harm Category	Survey Question	Gambling Harm	N	%	95% CI
Mental Health	GP10a	Significant guilt, anxiety, or depression because of gambling	253	3.6	(3.2, 4.0)
	GP10b	Suicidal thoughts because of gambling	27	0.4	(0.3, 0.6)
	GP10c	Attempted suicide because of gambling	15	0.2	(0.1, 0.4)
Family/ Relationship	GP11a	Relationship problems because of gambling	111	1.6	(1.3, 1.9)
	GP11b	Domestic violence because of gambling	44	0.6	(0.5, 0.8)
	GP11c	Separation or divorce because of gambling	25	0.4	(0.2, 0.5)
	GP12a	Neglect of children or family because of gambling	57	0.8	(0.6, 1.0)
	GP12b	Child welfare services involved because of gambling	22	0.3	(0.2, 0.5)
Work/ School	GP13a	Work or school problems because of gambling	58	0.8	(0.6, 1.1)
	GP13b	Average # of work or school days lost due to gambling – Mean	*6,868*	*0.2*	*(0.0, 0.4)*
	GP13b	Average # of work or school days lost due to gambling – Median	*6,868*	*0.0*	*(0.0, 0.0)*
	GP13c	Lost job or quit school due to gambling	24	0.3	(0.2, 0.5)
	GP13d	Received public assistance or welfare payments because of gambling	18	0.3	(0.2, 0.4)
	GP13e	Average amount of money received from public assistance/welfare because of gambling – Mean	*6,893*	*3.1*	*(-0.4, 6.5)*
	GP13e	Average amount of money received from public assistance/welfare because of gambling – Median	*6,893*	*0.0*	*(0.0, 0.0)*
Illegal Acts	GP14a	Commission of illegal acts because of gambling	62	0.9	(0.7, 1.1)
	GP14b	Average amount of money illegally obtained to gamble – Mean	*6,874*	*487.5*	*(-452.9, 1427.9)*
	GP14b	Average amount of money illegally obtained to gamble – Median	*6,874*	*0.0*	*(0.0, 0.0)*
	GP14c	Arrested because of gambling	22	0.3	(0.2, 0.5)
	GP14d	Convicted of offense because of gambling	12	0.2	(0.1, 0.3)
	GP14g	Incarcerated because of gambling	*10*	*0.1*	*(0.1, 0.3)*
	GP14h	Average # days incarcerated because of gambling – Mean	*6,886*	*0.0*	*(-0.0, 0.0)*
	GP14h	Average # days incarcerated because of gambling – Median	*6,886*	*0.0*	*(0.0, 0.0)*
Endorsed one or more harms			701	10.4	(9.7, 11.1)

Note: Italics and bold indicates estimates are unreliable, relative standard error > 30%

To investigate the possibility that much of the harm in different domains is driven by younger respondents, we examined differences in the rate of endorsing individual gambling harms by age (18-<30 and 30+). This analysis showed that younger respondents were significantly more likely to endorse financial harms, health harms, one of the mental health harms (guilt, anxiety or depression because of gambling), family/relationship harms, one of the work/school harms (work or school problems because of gambling), and one of the illegal act harms (commission of illegal acts because of gambling). Younger respondents were also significantly more likely than

older respondents to endorse one or more harms. A table detailing the endorsed harm items by age group can be found in Appendix C.

For the present analysis, endorsements of gambling harms based on responses to these survey questions were collapsed into six categories: financial, health, emotional/psychological, family/relationships, work/school, and illegal acts. Individuals experiencing one or more harms (n = 701) were included in the analyses. A table detailing the endorsed harm categories by demographic group can be found in Appendix D. For the purposes of this deeper analysis of selected BGPS and BOPS respondents, the following figures focus on gambling harms endorsed by regular gamblers over the past 12 months for each of these harm categories grouped by gender, age, race/ethnicity, and number of children present in the household. These figures are followed by a table detailing differences in the number of gambling harms endorsed by different demographic groups.

As noted above, combining the BGPS and BOPS samples provides a larger sample for analysis but is accompanied by lack of clarity about the population that the combined sample represents. A related concern is that the confidence intervals and standard errors included in the report rest on the assumption that the respondents in the combined sample are, in fact, a simple random sample of the population. We believe that the similar patterns of endorsement of harms in the two samples, with financial harms, physical health harms and mental health harms substantially higher than other harms in both samples, support our decision. However, it is important for readers to recognize this feature of the study as a limitation and to be cautious about generalizing the results to Massachusetts as a whole.

Results

As we noted above, there are substantially higher rates of heavy gambling and problem gambling among the BOPS respondents compared with the BGPS respondents. In addition to these differences, the BOPS respondents were more likely to be male and to have annual household incomes under $100,000. Since younger individuals tend to have lower incomes, it is important to note that some of the observed differences in the distribution of gambling harms are likely correlated. Another aspect of these data worth noting is that all of the reported harms are based on self-report and it is possible that participants in some demographic subgroups may have differentially under-reported actual harms.

Gambling Harms by Gender

Of the six categories of gambling harm, the most common harm reported by male regular gamblers was health-related harm (7.1%). Male regular gamblers reported lower rates for all other gambling-related harm categories with work/school and illegal acts being reported least. The most common harm reported by female regular gamblers was financial (4.5%) but female regular gamblers shared with males the same minimally reported harms related to work/school or illegal acts. Overall, males were significantly more likely to endorse financial harms (6.6%), health harms (7.1%), and one or more gambling harms (12.3%) compared to females (4.5%, 4.0%, and 8.2%, respectively). Appendix E1 provides details of the harms endorsed by male and female regular gamblers in the past 12 months.

**Figure 1: Gambling Harms in Past 12 Months Endorsed by Regular Gamblers by Gender (BGPS and BOPS unweighted)**
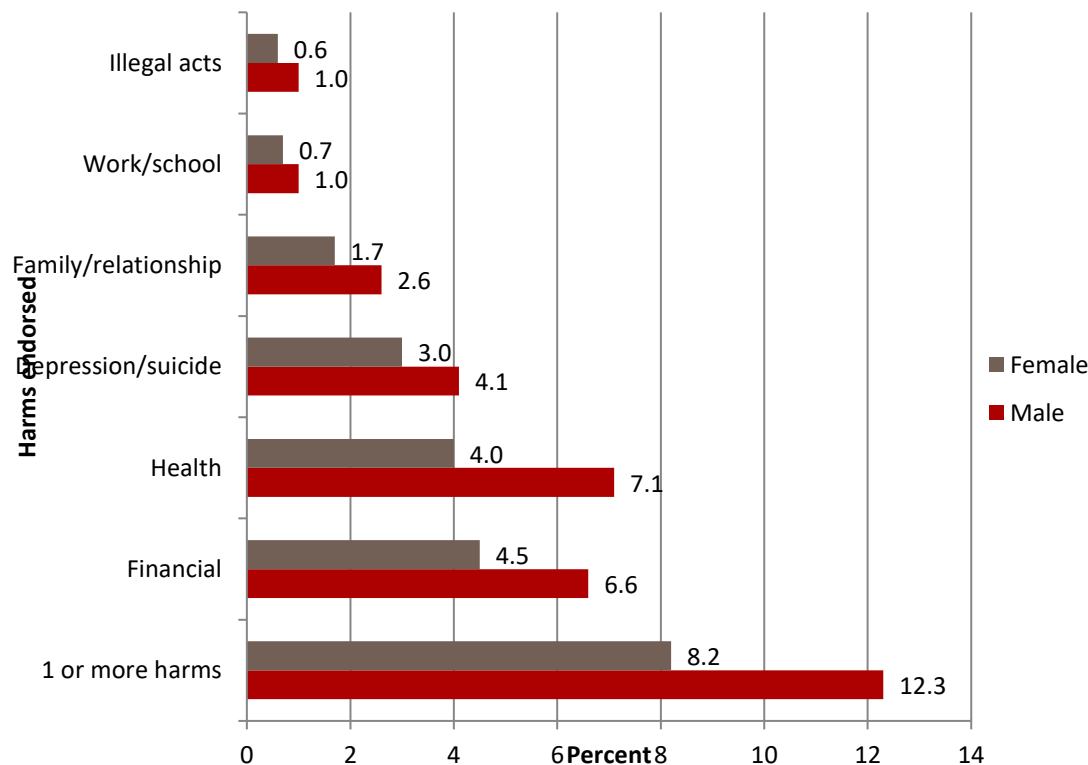
Note: estimates with relative standard error of greater than 30% are not displayed.

Gambling Harms by Age

Overall, the youngest group of respondents (18 - <30 years old) reported the highest proportions of harm in all categories when compared to older respondents. The proportion of respondents reporting gambling harms decreased as age increased. The oldest age group (65+ years old) reported the least amount of harm across all categories with the younger age groups significantly more likely to endorse these harms. Although financial harm was significantly more likely to be endorsed by 18 - <50 year olds (13.2% and 6.9%) when compared to the older age groups (4.0% and 2.4%), the youngest age group (18 - <30 year olds) was significantly more likely to endorse financial harm than any other age category. This was also true for family/relationship harms. Individuals 18 - <50 years old (5.2% and 2.9%) were significantly more likely to endorse this harm than those 50 years old and older (1.3% and 0.8%) with 18 - <30 year olds endorsing this harm significantly more than any other age group. For health harm, there was a statistically significant difference between each increasing age group with the youngest group (18 - <30 years old) being the most likely to endorse health harms (12.2%). Again, the youngest age group (6.0%) was more likely to endorse mental health harms compared to those 50 years and older (3.4% and 1.9%). The two youngest age groups (18 - <30 years old, 2.3% and 30 - <50, 1.1%) were more likely to endorse illegal acts compared to 50 - <65 year olds (0.6%). Overall, the youngest age group (18 - <30 years old, 21.2%) was significantly more likely to endorse one or more harms when compared to older age groups (12.4%, 8.0%, and 5.7%). See Appendix E2 for a breakdown of gambling harm categories by age.

Figure 2: Gambling Harms in Past 12 Months Endorsed by Regular Gamblers by Age (BGPS and BOPS unweighted)
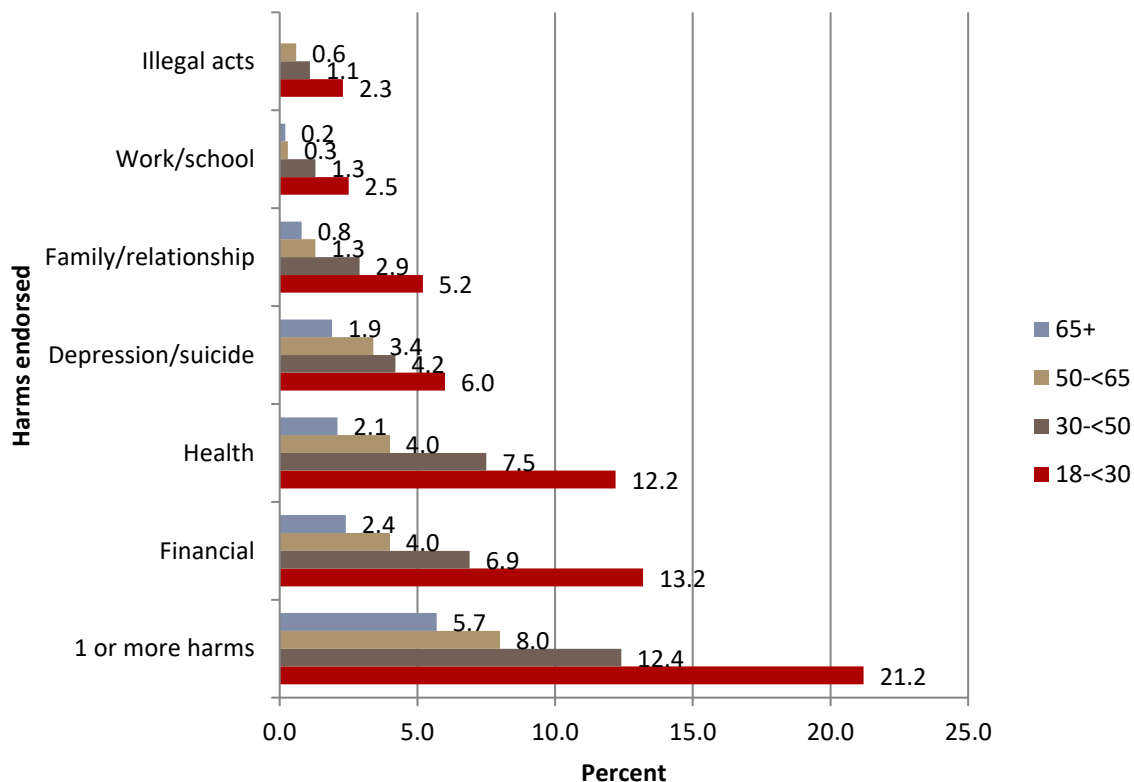
Note: estimates with relative standard error of greater than 30% are not displayed.

Gambling-related Harms by Race/Ethnicity

Overall, Whites had the lowest levels of endorsement of gambling harms, ranging from 4.7% for financial harms to 0.6% for work/school harms. Financial harms were reported significantly more often by Hispanics (13.7%) and

Blacks (12.8%) compared to Whites (4.7%) and Asians (6.4%). Hispanics and Blacks reported significantly more health-related harms (11.6% and 13.4% respectively) compared to Whites (4.8%). Hispanics and Blacks were also significantly more likely to endorse mental health harms (8.4% and 6.4%), and family/relationship harms (6.3% and 5.4%) compared to Whites (3.1%, and 1.7%, respectively). Blacks, Hispanics, and Asians reported significantly higher percentages of one or more harms (22.5%, 20.1%, and 14.9%) compared with Whites (9.0%). Appendix E3 provides details of gambling-related harms by race/ethnicity.

Figure 3: Gambling Harms in Past 12 Months Endorsed by Regular Gamblers by Race/Ethnicity (BGPS and BOPS unweighted)
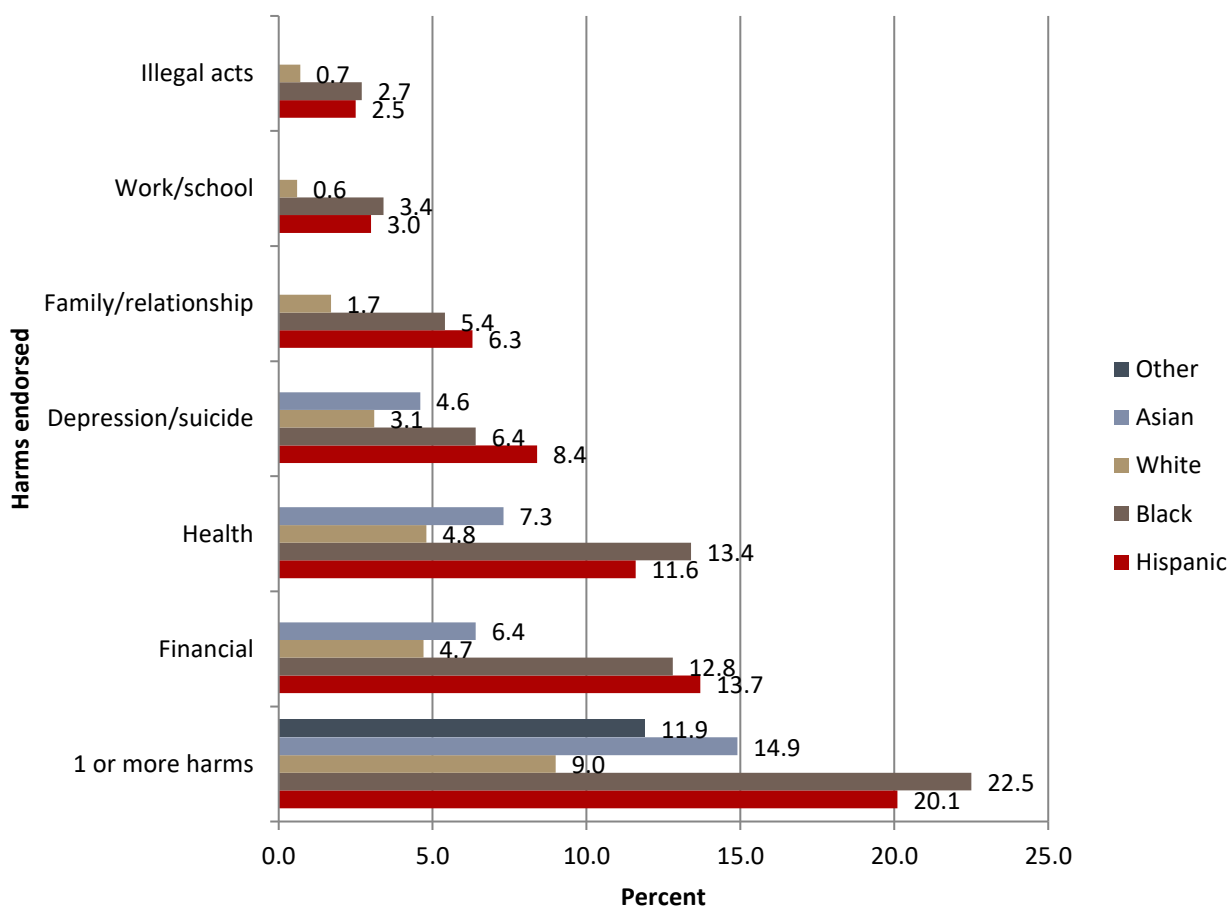
Note: estimates with relative standard error of greater than 30% are not displayed.

Gambling Harms by Number of Children in Household

While the focus in this section is on the impacts of gambling on families with children, it is important to note that the survey question used to establish family impacts inquired whether the respondent's gambling had caused significant problems in their relationships with their spouse/partner, other family members, or important friends. While this question relates to families with and without children, subsequent questions inquired specifically about impacts on children. A separate question in the survey asked about the number of children under 18 living in the respondent's household. This latter question was used to determine whether respondents lived in households with children.

Respondents with one child in their household were significantly more likely to endorse harms related to finance (8.2%) and health (7.9%) compared to those with no children (4.7% and 4.6%, respectively). Family/relationship harms were significantly less likely to be endorsed by regular gamblers without children (1.4%) compared to those with any children (3.4% for 1 child, 3.4% for 2 children, and 4.5% for 3 or more children). Illegal act harms were endorsed significantly more by households with two children (1.8%) compared to those without children (0.5%). Respondents were significantly more likely to endorse work/school harms if they had one (1.3%) or two (1.8%) children in the household compared to not having any children (0.5%). This was also true for those reporting one or more harms if they had one (13.4%) or two (12.0%) children in their household compared to households without children (8.9%). See Appendix E4 for details.

Figure 4: Gambling Harms in Past 12 Months Endorsed by Regular Gamblers by Number of Children in Household (BGPS and BOPS unweighted)
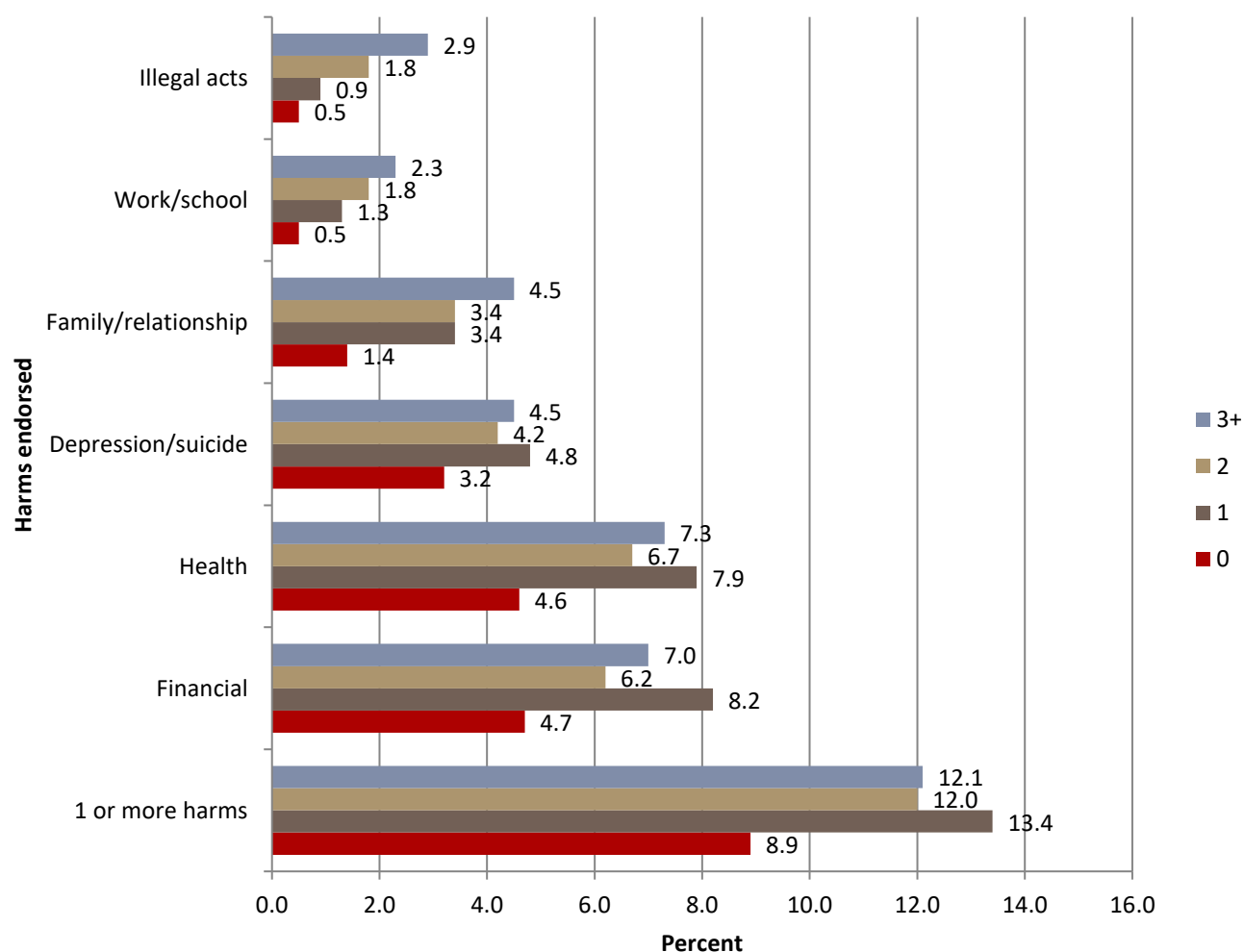
Note: estimates with relative standard error of greater than 30% are not displayed.

Number of Gambling Harms by Demographic Group

Finally, it is helpful to examine the distribution of the number of gambling harms by demographic group. Table 4 shows that men were significantly more likely to report experiencing one harm and three or more harms compared to women. Conversely, women were significantly more likely than men to report experiencing no

harms or two harms. The only significant difference related to age was that individuals aged 18 - <50 were significantly more likely to report experiencing three or more harms compared to individuals aged 50 - <65.

With regard to race/ethnicity, Blacks and Hispanics were significantly more likely to report experiencing two harms or three or more harms compared to Whites. Blacks and Asians were significantly more likely to report experiencing one harm compared to Whites. As also shown above (see Figure 3), Whites were significantly less likely to report experiencing any harms compared to Blacks, Hispanics and Asians.

Respondents with no children in the household were significantly less likely to report three or more harms compared with those with any children in the household. These respondents were significantly more likely to report no harms compared to those with one or two children in the household. Respondents with two children in the household were significantly more likely to report two harms compared with those with no children in the household.

Table 4: Number of Gambling Harms by Demographic Group

		No harms			1 harm			2 harms			3+ harms		
		N	%	95% CI	N	%	95% CI	N	%	95% CI	N	%	95% CI
Total		6,062	89.6	(88.9, 90.3)	379	5.6	(5.1, 6.2)	157	2.3	(2.0, 2.7)	165	2.4	(2.1, 2.8)
Gender	Male	3,067	87.7	(86.6, 88.8)	228	6.5	(5.8, 7.4)	96	2.7	(2.3, 3.3)	105	3.0	(2.5, 3.6)
	Female	2,974	91.8	(90.8, 92.7)	147	4.5	(3.9, 5.3)	61	1.9	(1.5, 2.4)	59	1.8	(1.4, 2.3)
Race/ethni	Hispanic	298	79.9	(75.5, 83.7)	27	7.2	(5.0, 10.3)	19	5.1	(3.3, 7.8)	29	7.8	(5.5, 11.0)
city	Black	224	77.5	(72.3, 82.0)	32	11.1	(7.9, 15.2)	19	6.6	(4.2, 10.1)	14	4.8	(2.9, 8.0)
	White	5,218	91.0	(90.2, 91.7)	290	5.1	(4.5, 5.7)	110	1.9	(1.6, 2.3)	115	2.0	(1.7, 2.4)
	Asian	166	85.1	(79.4, 89.5)	21	10.8	(7.1, 15.9)		---		*6*	*3.1*	*(1.4, 6.7)*
	Other	59	88.1	(77.9, 93.9)		---			---			---	
Age	18-<30	662	78.8	(75.9, 81.4)	85	10.1	(8.3, 12.3)	43	5.1	(3.8, 6.8)	50	6.0	(4.5, 7.8)
	30-<50	1,779	87.6	(86.1, 89.0)	125	6.2	(5.2, 7.3)	56	2.8	(2.1, 3.6)	70	3.4	(2.7, 4.3)
	50-<65	1,919	92.0	(90.7, 93.0)	94	4.5	(3.7, 5.5)	41	2.0	(1.4, 2.7)	33	1.6	(1.1, 2.2)
	65+	1,562	94.3	(93.1, 95.3)	68	4.1	(3.3, 5.2)	16	1.0	(0.6, 1.6)	*10*	*0.6*	*(0.3, 1.1)*
# children	0	4,250	91.1	(90.3, 91.9)	243	5.2	(4.6, 5.9)	90	1.9	(1.6, 2.4)	80	1.7	(1.4, 2.1)
in	1	753	86.6	(84.1, 88.7)	56	6.4	(5.0, 8.3)	24	2.8	(1.9, 4.1)	37	4.3	(3.1, 5.8)
household	2	609	88.0	(85.4, 90.2)	44	6.4	(4.8, 8.4)	15	2.2	(1.3, 3.6)	24	3.5	(2.3, 5.1)
	3+	261	87.9	(83.7, 91.1)	12	4.0	(2.3, 7.0)	13	4.4	(2.6, 7.4)	11	3.7	(2.1, 6.6)

Italics and bold indicate estimates are unreliable, relative standard error>30%
Those with cell size of 5 or less are suppressed

Discussion

Analysis of gambling-related harms among regular gamblers in the BGPS and BOPS provides insight into several selected demographic groups (gender, age, race/ethnicity, and number of children in the household) that appear to be at a heightened risk for gambling harm when engaging regularly in one or more types of gambling. The results presented here underscore the importance of broadening our focus on the impacts of gambling to highlight harms among individuals who do not meet criteria for the clinical entity of problem gambling. However, it is important to acknowledge that this study does not assess community-level gambling harm. It is quite possible that the wider social impacts of gambling harm are several magnitudes greater than the individual-level harms presented here.

It is interesting to consider each of the harm domains in terms of which demographic groups are most at risk. For example, males, adults under 30, Hispanics, Blacks and regular gamblers with one child in the household were significantly more likely to endorse health harms than other groups. The pattern is quite similar for financial harms.

Young adults, Hispanics and Blacks were significantly more likely to report experiencing emotional/ psychological harms related to gambling than other groups. These same groups, along with regular gamblers with any children in the household, were significantly more likely to endorse family/relationship harms compared to other groups. Adults under 50 and regular gamblers with one or two children in the household were significantly more likely than other groups to endorse work/school harms. Harms related to illegal acts were significantly higher among adults under 50 compared with older adults. Finally, males, adults under 30, and regular gamblers with one or two children in the household were significantly more likely than other groups to endorse harms across more than one domain.

In contrast to other work carried out internationally, we have not endeavored to determine the distribution of gambling harms across gambling types in Massachusetts or to assess whether subclinical groups of gamblers in the population account for a greater proportion of gambling harm than those who meet criteria for problem gambling. Instead, our focus has been on identifying the uneven distribution of gambling harms among different demographic groups in Massachusetts. In our view, this approach aligns well with efforts to prevent and mitigate gambling harm in Massachusetts by focusing attention on groups in the population that report experiencing greater impacts regardless of their rates of gambling participation or problem gambling prevalence.

Implications for Problem Gambling Prevention and Treatment

While our focus in the present report is on regular gamblers, the results are quite similar to our analysis of the negative impacts of gambling among people experiencing gambling problems in Massachusetts (Williams et al., 2017). Financial problems and health problems were the most common negative impacts reported by people experiencing gambling problems in Massachusetts; these are also the types of harm most commonly reported by regular gamblers in Massachusetts. Similarly, work/school problems and illegal acts were the least common negative impacts reported by people experiencing gambling problems and these are also the types of harm least likely to be reported by regular gamblers.

Higher rates of financial and health harms among males, young adults, Blacks and Hispanics suggest the importance of raising awareness about gambling-related harm with these groups. One important step toward mitigating gambling harm within communities would be to educate community-based organizations about the extent of gambling harm in their communities compared to levels of awareness of and availability of specialized services. Beyond community organizations, health professionals and financial counselors would benefit from a better understanding of the scope of gambling harm among their clientele as well as some knowledge of how to sensitively ask their clients about their gambling and the gambling of their family members and friends. The high rate of emotional/psychological harms among Hispanics and Blacks underscores the importance of raising awareness of gambling harm in these communities while the high rate of emotional/psychological harms among young adults suggests the need to raise awareness of gambling harm among high school and college counseling staffs.

A particular concern, given the higher rates of all types of gambling harm among regular gamblers with children in the household, is to raise awareness and improve screening among professionals working with families and among community organizations concerned with child welfare. Communities and professionals would benefit from a better understanding of the greater risk of gambling harm in households where one or both parents gamble regularly.

Limitations

Both the BGPS and the BOPS have some limitations that must be acknowledged when generalizing the results to the Massachusetts population. With regard to the BGPS, one potential limitation is the 36.6% response rate attained in the survey. While we attempted to minimize systematic bias by introducing the study as a survey of 'health and recreation,' the response rate for the BGPS was lower than desirable. Another limitation of the BGPS is that the survey was restricted to adults living in households and did not include adults living in group quarters, incarcerated individuals, or homeless individuals. A third limitation is that the questionnaire was translated into Spanish but not into other languages. By not providing for surveys in additional languages, we were unable to include such individuals in our sample. Finally, it is important to emphasize that, like other prevalence surveys, the BGPS is a cross-sectional 'snapshot' of gambling and problem gambling at a single point in time. This limits our ability to draw any causal conclusions from reported associations in the data.

With regard to the BOPS, the main limitation is the non-representative nature of online panels. This is due to the fact that most online panelists have not been randomly selected, but instead, have initiated membership themselves. Although online panels are usually stratified to be demographically representative of the population, behavioral differences typically exist. One obvious difference is that a non-random minority of people do not use the Internet, and thus are not eligible to be part of an online panel.

As we have noted previously, while combining the BGPS and BOPS samples provides a larger sample for analysis, this approach rests on the dubious assumption that the respondents in the combined sample are a simple random sample. We believe that the similar patterns of endorsement of harms in the two samples supports our decision but recognize this feature of the study as a limitation and urge caution in generalizing the results to Massachusetts as a whole. It should be noted that no other studies of gambling harm have used a combined sample. While this is likely because few jurisdictions have conducted multiple surveys of gambling behavior in a single window of time using identical questionnaires, this approach is a potential limitation.

One final limitation relates to the nature of self-report in surveys more generally. We have done our best to mitigate self-report bias, both by using the PPGM which, unlike other instruments, identifies problem gamblers in denial and by primarily utilizing a self-administered questionnaire, which further maximizes valid self-report.

Nevertheless, it is possible that respondents in the BGPS and BOPS under-reported their gambling behavior and harms due to social stigma.

Future Directions

We believe that future work to examine gambling harms in Massachusetts is warranted. There are several directions that this work could take. For example, it would be appropriate to carry out logistic analyses of the distribution of gambling harms among regular gamblers to control for relationships between important variables, such as age and number of children in the household. We also believe it would be interesting to look at gambling harms in Massachusetts in relation to problem gambling status, as has been done in Finland, New Zealand and Victoria. One caveat is that we would likely need to re-calculate scores based on the PPGM to avoid conflating our measures of harm with our problem gambling assessment. This is the approach taken in the analysis of the Finnish Gambling Harms Survey (Browne et al., 2020, under review).

Another interesting direction would be to examine whether the 'Prevention Paradox' holds up in the Massachusetts context. The Prevention Paradox for gambling describes a situation where a greater proportion of gambling harm is associated with lower risk gamblers than with higher risk gamblers in the population, as a result of their far greater numbers (Browne, Goodwin, et al., 2018). As Delfabbro and King (2017b) have pointed out, whether or not the Prevention Paradox is supported depends a great deal on how the higher risk population is defined, what harms are 'counted,' and how impact is measured. Nevertheless, the Prevention Paradox can be a useful lens to explore the distribution of impacts in the population and the degree to which various forms of harm are concentrated in higher risk groups.

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Appendix A: BGPS/BOPS Questionnaire Sections

Appendix A1: Regular Gambler Criteria

Gambling Behavior

GY1a. In the past 12 months, how often have you purchased lottery tickets such as Megabucks, Powerball, Lucky for Life, or Mass Cash? (Please select one response)

- 4 or more times a week
- 2-3 times a week
- Once a week
- 2-3 times a month
- Once a month
- Less than once a month, or
- Not at all

GY2a. In the past 12 months, how often have you purchased instant tickets or pull tabs? Would you say about… (Please select one response)

- 4 or more times a week
- 2-3 times a week
- Once a week
- 2-3 times a month
- Once a month
- Less than once a month, or
- Not at all

GY2c. In the past 12 months, how often have you purchased raffle tickets? Would you say about… (Please select one response)

- 4 or more times a week
- 2-3 times a week
- Once a week
- 2-3 times a month
- Once a month
- Less than once a month, or
- Not at all

GY3a. In the past 12 months, how often have you purchased keno or daily race game tickets? Would you say about… (Please select one response)

- 4 or more times a week
- 2-3 times a week
- Once a week
- 2-3 times a month
- Once a month
- Less than once a month, or
- Not at all

GY4a. In the past 12 months, how often have you bet money on sporting events (this includes sports pools)? Would you say about… Please select one response

- 4 or more times a week
- 2-3 times a week
- Once a week
- 2-3 times a month
- Once a month
- Less than once a month, or
- Not at all

GY5a. In the past 12 months, how often have you gone to a bingo hall to gamble? Would you say about… Please select one response
- 4 or more times a week
- 2-3 times a week
- Once a week
- 2-3 times a month
- Once a month
- Less than once a month, or
- Not at all

GY8a. In the past 12 months, how many times have you gambled at a casino, racino, or slots parlor outside of Massachusetts? Would you say about… Please select one response
- 4 or more times a week
- 2-3 times a week
- Once a week
- 2-3 times a month
- Once a month
- Less than once a month, or
- Not at all

GY9a. In the past 12 months, how often have you bet on a horse race at either a horse race track or an off-track site? Would you say about… Please select one response
- 4 or more times a week
- 2-3 times a week
- Once a week
- 2-3 times a month
- Once a month
- Less than once a month, or
- Not at all

GY10a. In the past 12 months, how often have you gambled or bet money against other people on things such as card games; golf, pool, darts, bowling; video games; board games, or poker outside of a casino? Would you say about… Please select one response
- 4 or more times a week
- 2-3 times a week
- Once a week
- 2-3 times a month
- Once a month
- Less than once a month, or
- Not at all

GY11a. In the past 12 months, how often did you purchase high risk stocks, options or futures or day trade on the stock market? Would you say about… Please select one response
- 4 or more times a week
- 2-3 times a week

- Once a week
- 2-3 times a month
- Once a month
- Less than once a month, or
- Not at all

GY12a. In the past 12 months, have you gambled online? This would include things such as playing poker, buying lottery tickets, betting on sports, bingo, slots or casino table games for money or playing interactive games for money? Please select one response
- Yes
- No

Gambling Recreation
GR1. How important is gambling to you as a recreational activity? Please select one response
- Very important
- Somewhat important
- Not very important
- Not at all important

GR2a. Has gambling replaced other recreational activities for you in the past 5 years? Please select one response
- Yes
- No

Appendix A2: Gambling Harm Items

Gambling Problems

GP6a. In the past 12 months, has your gambling caused any financial problems for you or your household? Please select one response
- Never
- Sometimes
- Most of the time, or
- Almost always
- Prefer not to answer

GP6b. In the past 12 months, have you filed for bankruptcy because of gambling? Please select one response
- No
- Yes
- Prefer not to answer

GP7a. In the past 12 months, has your gambling caused you any health problems, including stress or anxiety? Please select one response
- Never
- Sometimes
- Most of the time, or
- Almost always
- Prefer not to answer

GP7b. In the past 12 months, have these health problems caused you to seek medical or psychological help?
Please select one response
- No
- Yes
- Prefer not to answer

GP10a. Has your involvement in gambling caused significant mental stress in the form of guilt, anxiety, or depression for you or someone close to you in the past 12 months? Please select one response
- No
- Yes
- Prefer not to answer

GP10b. In the past 12 months, have you thought of committing suicide because of gambling? Please select one response
- No
- Yes
- Prefer not to answer

GP10c. In the past 12 months, have you attempted suicide because of gambling? Please select one response
- No
- Yes
- Prefer not to answer

GP11a. Has your involvement in gambling caused significant problems in your relationship with your spouse/partner or important friends or family in the past 12 months? Please select one response
- No
- Yes
- Prefer not to answer

GP11b. In the past 12 months, has your involvement in gambling caused an instance of domestic violence in your household? Please select one response
- No
- Yes
- Prefer not to answer

GP11c. In the past 12 months, has your involvement in gambling resulted in separation or divorce? Please select one response
- No
- Yes
- Prefer not to answer

GP12a. In the past 12 months, has your involvement in gambling caused you to repeatedly neglect your children or family? Please select one response
- No
- Yes
- Prefer not to answer

GP12b. In the past 12 months, has child welfare services become involved because of your gambling? Please select one response
- No
- Yes
- Prefer not to answer

GP13a. Has your involvement in gambling caused significant work or school problems for you or someone close to you in the past 12 months or caused you to miss a significant amount of time off work or school? Please select one response
- No (0)
- Yes (1)
- Prefer not to answer (9999)

GP13b. In the past 12 months, about how many work or school days have you lost due to gambling? Please enter a number in the box below

_____
- Prefer not to answer

GP13c. In the past 12 months, have you lost your job or had to quit school due to gambling? Please select one response
- No
- Yes
- Prefer not to answer

GP13d. In the past 12 months, did anyone in this household receive any public assistance (food stamps, Temporary Assistance for Needy Families (TANF)) or any other welfare payments from the state or local welfare office as a result of losing your job because of gambling? Please select one response
- No
- Yes
- Prefer not to answer

GP13e. Roughly how much money did you receive from public assistance in past 12 months?
$_____

GP14a. In the past 12 months, has your involvement in gambling caused you or someone close to you to write bad checks, take money that didn't belong to you or commit other illegal acts to support your gambling? Please select one response
- No

- Yes
- Prefer not to answer

GP14b. In the past 12 months, about how much money have you illegally obtained in order to gamble? Please enter the amount in the box below
$_____
- Prefer not to answer

GP14c. In the past 12 months, has your gambling been a factor in your committing a crime for which you have been arrested? Please select one response
- No
- Yes
- Prefer not to answer

GP14d. Were you convicted for this crime? Please select one response
- No
- Yes
- Prefer not to answer

GP14g. Were you incarcerated for this crime? Please select one response
- No
- Yes
- Prefer not to answer

GP14h. How many days were you incarcerated for?
_____
- Prefer not to answer

Appendix B: Characteristics of BGPS and BOPS Samples

		Baseline General Population Survey (BGPS) (*N* = 9,578)		Baseline Online Panel Survey (BOPS) (*N* = 5,046)	
		%	95% C.I.	%	95% C.I.
Born in United States	No	13.0	(12.3, 13.7)	8.1	(7.4, 8.9)
	Yes	85.0	(84.3, 85.7)	91.5	(90.7, 92.2)
	Missing	2.0	(1.8, 2.3)	0.4	(0.3, 0.6)
Marital status	Never married	16.5	(15.8, 17.3)	29.7	(28.5, 31.0)
	Living with partner/Married/Widowed	68.6	(67.7, 69.5)	58.6	(57.2, 60.0)
	Divorced or Separated	12.4	(11.8, 13.1)	11.2	(10.3, 12.1)
	Missing	2.5	(2.2, 2.8)	0.5	(0.3, 0.8)
Employment	Employed	57.3	(56.3, 58.3)	54.3	(52.9, 55.7)
	Unemployed	3.7	(3.3, 4.1)	6.7	(6.0, 7.4)
	Retired	25.9	(25.0, 26.8)	16.7	(15.7, 17.8)
	Other[5]	11.0	(10.4, 11.7)	21.2	(20.1, 22.3)
	Missing	2.1	(1.8, 2.4)	1.1	(0.8, 1.4)
Military service	No	89.2	(88.5, 89.8)	90.0	(89.1, 90.8)
	Yes	9.6	(9.1, 10.2)	9.3	(8.5, 10.1)
	Missing	1.2	(1.0, 1.5)	0.7	(0.5, 1.0)
Region	Western Massachusetts	29.0	(28.9, 29.0)	23.7	(22.6, 24.9)
	Greater Boston	55.4	(54.7, 56.1)	60.3	(59.0, 61.7)
	Southeastern Massachusetts	15.7	(15.0, 16.4)	15.9	(14.9, 17.0)
Health status past 12 months	Excellent	21.3	(20.5, 22.2)	13.1	(12.2, 14.0)
	Very Good	38.3	(37.4, 39.3)	34.4	(33.1, 35.7)
	Good	27.8	(26.9, 28.7)	34.8	(33.5, 36.1)
	Fair	10.0	(9.4, 10.6)	14.1	(13.1, 15.0)
	Poor	2.4	(2.1, 2.7)	3.3	(2.9, 3.9)
	Missing	*0.2*	*(0.1, 0.3)*	0.3	(0.2, 0.5)
Participate in extreme sports	No	93.2	(92.7, 93.7)	79.4	(78.3, 80.5)
	Yes	6.5	(6.0, 7.0)	12.0	(11.1, 12.9)
	Missing	0.3	(0.2, 0.5)	8.6	(7.9, 9.4)
Overall stress past 12 months	Very Low	3.6	(3.3, 4.0)	5.6	(5.0, 6.3)
	Low	16.0	(15.3, 16.8)	17.2	(16.2, 18.2)
	Moderate	46.0	(45.0, 47.0)	40.6	(39.3, 42.0)
	High	25.5	(24.6, 26.4)	25.5	(24.3, 26.7)
	Very High	8.6	(8.0, 9.1)	10.6	(9.7, 11.4)
	Missing	0.3	(0.2, 0.5)	0.6	(0.4, 0.8)

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[5] Student, homemaker, disabled were combined into 'Other' because of small samples sizes in each.

		Baseline General Population Survey (BGPS) (N = 9,578)		Baseline Online Panel Survey (BOPS) (N = 5,046)	
		%	95% C.I.	%	95% C.I.
Current tobacco use	No	85.2	(84.5, 85.9)	71.1	(69.8, 72.3)
	Yes	12.9	(12.2, 13.6)	28.0	(26.8, 29.3)
	Missing	1.8	(1.6, 2.1)	0.9	(0.6, 1.2)
Alcohol use past 30 days	No	29.7	(28.8, 30.6)	33.2	(31.9, 34.5)
	Yes	70.0	(69.0, 70.9)	66.4	(65.1, 67.7)
	Missing	0.3	(0.2, 0.5)	0.4	(0.3, 0.6)
Binge drinking past 30 days	No	71.6	(70.7, 72.5)	61.9	(60.5, 63.2)
	Yes	23.7	(22.9, 24.6)	29.9	(28.6, 31.2)
	Missing	4.7	(4.3, 5.1)	8.2	(7.5, 9.0)
Behavioral addictions past 12 months	No	88.4	(87.8, 89.1)	80.9	(79.8, 82.0)
	Yes	10.6	(10.0, 11.3)	17.1	(16.1, 18.2)
	Missing	0.9	(0.8, 1.1)	2.0	(1.6, 2.4)
Mental health problems past 12 months	No	79.8	(79.0, 80.6)	70.4	(69.1, 71.6)
	Yes	14.8	(14.1, 15.5)	26.0	(24.8, 27.2)
	Missing	5.4	(4.9, 5.8)	3.7	(3.2, 4.2)
Childhood Rating	Very happy	26.9	(26.0, 27.7)	19.3	(18.3, 20.4)
	Happy	48.6	(47.6, 49.6)	47.1	(45.7, 48.5)
	Neither happy nor unhappy	16.6	(15.9, 17.4)	21.3	(20.2, 22.5)
	Unhappy	5.5	(5.0, 5.9)	8.8	(8.1, 9.6)
	Very unhappy	1.6	(1.4, 1.9)	2.6	(2.2, 3.1)
	Missing	0.8	(0.6, 1.0)	0.9	(0.6, 1.1)
Friend and Family involvement in Gambling	None of them	51.0	(50.0, 52.0)	40.9	(39.6, 42.3)
	Some of them	45.2	(44.2, 46.2)	47.1	(45.7, 48.5)
	Most of them	1.7	(1.5, 2.0)	3.5	(3.0, 4.0)
	All of them	0.8	(0.7, 1.0)	0.9	(0.7, 1.2)
	Missing	1.2	(1.0, 1.5)	7.6	(6.9, 8.4)
Played Traditional Lottery Games in Past 12 months	No	42.6	(41.6, 43.6)	29.4	(28.2, 30.7)
	Yes	57.2	(56.2, 58.1)	69.7	(68.4, 71.0)
	Missing	0.2	(0.2, 0.4)	0.9	(0.6, 1.2)
Played Instant Games in Past 12 months	No	63.2	(62.2, 64.2)	47.7	(46.3, 49.1)
	Yes	36.1	(35.2, 37.1)	50.5	(49.1, 51.9)
	Missing	0.7	(0.5, 0.8)	1.8	(1.5, 2.3)
Played Daily Lottery Games in Past 12 months	No	87.0	(86.4, 87.7)	80.9	(79.8, 82.0)
	Yes	12.3	(11.6, 12.9)	17.8	(16.7, 18.8)
	Missing	0.7	(0.6, 0.9)	1.3	(1.0, 1.7)
Gambled at Casino in Past 12 months	No	75.1	(74.2, 75.9)	63.0	(61.7, 64.4)
	Yes	19.2	(18.4, 20.0)	30.6	(29.3, 31.9)
	Missing	5.7	(5.3, 6.2)	6.4	(5.7, 7.1)
Played Bingo in Past 12 months	No	96.4	(96.0, 96.8)	91.3	(90.5, 92.0)
	Yes	3.0	(2.7, 3.4)	8.7	(8.0, 9.5)
	Missing	0.6	(0.4, 0.7)	0.0	NA

		Baseline General Population Survey (BGPS) (*N* = 9,578)		Baseline Online Panel Survey (BOPS) (*N* = 5,046)	
		%	95% C.I.	%	95% C.I.
Bet on Horse Racing in Past 12 months	No	96.2	(95.8, 96.5)	92.8	(92.0, 93.4)
	Yes	3.4	(3.1, 3.8)	6.2	(5.6, 6.9)
	Missing	0.4	(0.3, 0.5)	1.1	(0.8, 1.4)
Sports Betting in Past 12 months	No	88.9	(88.2, 89.5)	85.6	(84.6, 86.5)
	Yes	10.7	(10.1, 11.3)	13.2	(12.3, 14.2)
	Missing	0.4	(0.3, 0.6)	1.2	(0.9, 1.6)
Private Betting in Past 12 months	No	90.3	(89.7, 90.9)	83.5	(82.4, 84.5)
	Yes	8.8	(8.2, 9.4)	15.2	(14.3, 16.3)
	Missing	0.9	(0.8, 1.2)	1.3	(1.0, 1.6)
Online Gambling in Past 12 months	No	97.6	(97.3, 97.9)	92.1	(91.3, 92.8)
	Yes	1.1	(1.0, 1.4)	6.0	(5.4, 6.7)
	Missing	1.2	(1.0, 1.5)	1.9	(1.6, 2.3)
# Gambling Formats	Mean	1.9	(1.8, 1.9)	2.4	(2.3, 2.4)
	Median	2.0	(2.0, 2.0)	2.0	(2.0, 2.0)
Total Gambling Expenditure ($)	Mean	-$1067	(-1400, -734)	-$969	(-3415, 1478)
	Median	-$24	(-35, -24)	$0.0	(0, 0)
PPGM total score	Mean	0.1	(0.1, 0.1)	0.5	(0.4, 0.5)
	Median	0.0	(0.0, 0.0)	0.0	(0.0, 0.0)
Problem Gambling Prevalence		1.4	(1.1, 1.6)	6.4	(5.7, 7.1)

NOTES: Italicized and bod figures indicate estimates with relative standard error > 30%. Illicit drug use and problems with drugs/alcohol are not reported due to 81% of the data being missing for the former, and problems with the skip pattern for the latter in BOPS. Raffles are not reported due to problems with the skip pattern in BOPS. Negative values for expenditure denote a net loss and positive values denote a net win.

Appendix B2: Negative Impacts of Gambling in Past 12 Months among Regular Gamblers by Sample, Unweighted Data

			BGPS			BOPS			
			Unweighted	%	95% CI	Unweighted	%	95% CI	p-value[1]
		Weighted N	3,993	56.3	(55.2,	3,102	43.7	(42.6, 44.8)	
Finan		Financial problems	100	2.5	(2.1, 3.0)	296	9.5	(8.6, 10.6)	<0.0001
		Filed for bankruptcy	*9*	*0.2*	*(0.1, 0.4)*	29	1.0	(0.7, 1.4)	<0.0001
Health		Health problems	108	2.7	(2.2, 3.3)	289	9.3	(8.3, 10.4)	<0.0001
		Health problems result in seeking medical or	22	0.6	(0.4, 0.8)	63	2.1	(1.6, 2.6)	<0.0001
Depressio		Mental stress (guilt, anxiety, depression)	112	2.8	(2.3, 3.4)	141	4.6	(3.9, 5.4)	<0.0001
		Suicidal thoughts	*10*	*0.3*	*(0.1, 0.5)*	17	0.6	(0.3, 0.9)	<0.0001
		Attempted suicide		---		*11*	*0.4*	*(0.2, 0.7)*	0.0079
Relationship		Relationship problems	35	0.9	(0.6, 1.2)	76	2.5	(2.0, 3.1)	<0.0001
		Domestic violence	*6*	*0.2*	*(0.1, 0.3)*	38	1.2	(0.9, 1.7)	<0.0001
		Separation or divorce		---		23	0.8	(0.5, 1.1)	<0.0001
		Neglect of children or	*8*	*0.2*	*(0.1, 0.4)*	49	1.6	(1.2, 2.1)	<0.0001
		Child welfare services involved	0	0.0		22	0.7	(0.5, 1.1)	<0.0001
Work/school		Work or school	14	0.4	(0.2, 0.6)	44	1.4	(1.1, 1.9)	<0.0001
	Mean (95% CI)	Number of work or school days lost	*3,885*	*0.1*	*(-0.1, 0.3)*	*2,983*	*0.3*	*(0.0, 0.6)*	<0.0001
	Median (95% CI)	Number of work or school days lost	*3,885*	*0.0*	*(0.0, 0.0)*	*2,983*	*0.0*	*(0.0, 0.0)*	<0.0001
		Lost job or quit school		---		20	0.7	(0.4, 1.0)	0.0004
		Received public assistance/welfare		---		16	0.5	(0.3, 0.9)	0.0005
	Mean (95% CI)	Amount of money received from public	*3,887*	*2.8*	*(-2.7, 8.4)*	*3,006*	*3.4*	*(-0.2, 6.9)*	0.0009
	Median (95% CI)	Amount of money received from public	*3,887*	*0.0*	*(0.0, 0.0)*	*3,006*	*0.0*	*(-0.0, 0.0)*	<0.0001
Illegal acts		Commission of illegal	18	0.5	(0.3, 0.7)	44	1.4	(1.1, 1.9)	0.0002
	Mean (95% CI)	Amount of money illegally obtained	*3,892*	*8.1*	*(-4.7, 20.8)*	*2,982*	*1113.3*	*(-1054.3, 3280.8)*	<0.0001
	Median (95% CI)	Amount of money illegally obtained	*3,892*	*0.0*	*(0.0, 0.0)*	*2,982*	*0.0*	*(-0.0, 0.0)*	<0.0001
		Arrested		---		19	0.6	(0.4, 1.0)	<0.0001
		Convicted of offense		---		*11*	*0.4*	*(0.2, 0.7)*	<0.0001
		Incarcerated		---		*9*	*0.3*	*(0.2, 0.6)*	<0.0001
	Mean (95%	# days incarcerated	3,892	0.0	(0.0, 0.0)	*2,994*	*0.0*	*(-0.0, 0.1)*	0.0081
	Median (95%	# days incarcerated	*3,892*	*0.0*	*(0.0, 0.0)*	*2,994*	*0.0*	*(-0.0, 0.0)*	<0.0001
	2=yes	Endorsed one of more	246	6.5	(5.7, 7.3)	455	15.4	(14.2, 16.8)	<0.0001

Italics and bold indicate estimates are unreliable, relative standard error>30%
Those with cell size of 5 or less are suppressed
[1] Based on Chi-Square test

Appendix C: Gambling Harms Stratified by Age

Harm Category	Survey Item	Gambling Harm	18-29			30+		
			N	%	95% CI	N	%	95% CI
Financial	GP6a	Financial problems because of gambling	118	13.2	(11.2, 15.6)	275	4.6	(4.1, 5.1)
	GP6b	Filed for bankruptcy because of gambling	15	1.8	(1.1, 2.9)	23	0.4	(0.3, 0.6)
Health	GP7a	Health or stress problems because of gambling	109	12.2	(10.2, 14.5)	285	4.7	(4.2, 5.3)
	GP7b	Gambling-related health problems resulting in seeking medical or psychological help	24	2.7	(1.8, 4.1)	59	1.0	(0.8, 1.3)
Mental Health	GP10a	Significant guilt, anxiety, or depression because of gambling	53	6.0	(4.6, 7.7)	195	3.2	(2.8, 3.7)
	GP10b	Suicidal thoughts because of gambling	*8*	*0.9*	*(0.5, 1.8)*	19	0.3	(0.2, 0.5)
	GP10c	Attempted suicide because of gambling		---		*10*	*0.2*	*(0.1, 0.3)*
Family/ Relation- ship	GP11a	Relationship problems because of gambling	32	3.6	(2.6, 5.1)	78	1.3	(1.0, 1.6)
	GP11b	Domestic violence because of gambling	22	2.5	(1.7, 3.8)	22	0.4	(0.2, 0.6)
	GP11c	Separation or divorce because of gambling	13	1.5	(0.9, 2.5)	12	0.2	(0.1, 0.4)
	GP12a	Neglect of children or family because of gambling	17	1.9	(1.2, 3.1)	40	0.7	(0.5, 0.9)
	GP12b	Child welfare services involved because of gambling	11	1.3	(0.7, 2.3)	*11*	*0.2*	*(0.1, 0.3)*
Work/ School	GP13a	Work or school problems because of gambling	21	2.4	(1.6, 3.6)	36	0.6	(0.4, 0.8)
	GP13b	Average # of work or school days lost due to gambling – Mean	*844*	*0.7*	*(-0.1, 1.6)*	*5,871*	*0.1*	*(0.0, 0.3)*
	GP13b	Average # of work or school days lost due to gambling – Median	*844*	*0.0*	*(0.0, 0.0)*	*5,871*	*0.0*	*(0.0, 0.0)*
	GP13c	Lost job or quit school due to gambling	13	1.5	(0.9, 2.5)	*10*	*0.2*	*(0.1, 0.3)*
	GP13d	Received public assistance or welfare payments because of gambling	*9*	*1.0*	*(0.5, 2.0)*	*9*	*0.2*	*(0.1, 0.3)*
	GP13e	Average amount of money received from public assistance/welfare because of gambling – Mean	*853*	*2.2*	*(-0.3, 4.8)*	*5,887*	*3.3*	*(-0.8, 7.3)*

Harm Category	Survey Item	Gambling Harm	18-29			30+		
			N	%	95% CI	N	%	95% CI
	GP13e	Average amount of money received from public assistance/welfare because of gambling – Median	*853*	*0.0*	*(0.0, 0.0)*	*5,887*	*0.0*	*(0.0, 0.0)*
Illegal Acts	GP14a	Commission of illegal acts because of gambling	20	2.3	(1.5, 3.5)	40	0.7	(0.5, 0.9)
	GP14b	Average amount of money illegally obtained to gamble – Mean	*848*	*3894.7*	*(-3724.2, 11513.7)*	*5,872*	*8.2*	*(-0.7, 17.2)*
	GP14b	Average amount of money illegally obtained to gamble – Median	*848*	*0.0*	*(0.0, 0.0)*	*5,872*	*0.0*	*(0.0, 0.0)*
	GP14c	Arrested because of gambling	11	1.3	(0.7, 2.3)	*11*	*0.2*	*(0.1, 0.3)*
	GP14d	Convicted of offense because of gambling	*8*	*0.9*	*(0.5, 1.9)*		---	
	GP14g	Incarcerated because of gambling	*6*	*0.7*	*(0.3, 1.6)*		---	
	GP14h	Average # days incarcerated because of gambling – Mean	*851*	*0.1*	*(0.0, 0.2)*	*5,881*	*0.0*	*(0.0, 0.0)*
	GP14h	Average # days incarcerated because of gambling – Median	*851*	*0.0*	*(0.0, 0.0)*	*5,881*	*0.0*	*(0.0, 0.0)*
Endorsed one or more harms			178	21.2	(18.6, 24.1)	513	8.9	(8.2, 9.6)

Italics and bold indicate estimates are unreliable, relative standard error>30%
Those with cell size of 5 or less are suppressed

Appendix D: Gambling Harm in the Past 12 Months Endorsed by Regular Gamblers by Demographic Group (BGPS and BOPS, unweighted)

			% with 1 or more harms		Average # harms		Endorsed harm											
								Financial		Health		Depression/suicide		Family/relationship		Work/school		Illegal acts	
		N	%	95% CI	Mean	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Gender	Males	3,651	12.3	(11.2, 13.4)	0.2	(0.2, 0.3)	6.6	(5.9, 7.5)	7.1	(6.3, 8.0)	4.1	(3.5, 4.8)	2.6	(2.1, 3.1)	1.0	(0.7, 1.4)	1.0	(0.8, 1.4)
	Females	3,408	8.2	(7.3, 9.2)	0.2	(0.1, 0.2)	4.5	(3.8, 5.2)	4.0	(3.4, 4.7)	3.0	(2.5, 3.6)	1.7	(1.3, 2.1)	0.7	(0.5, 1.1)	0.6	(0.4, 0.9)
Age	18-<30	892	21.2	(18.6, 24.1)	0.4	(0.4, 0.5)	13.2	(11.2, 15.6)	12.2	(10.2, 14.5)	6.0	(4.6, 7.7)	5.2	(3.9, 6.9)	2.5	(1.6, 3.7)	2.3	(1.5, 3.5)
	30-<50	2123	12.4	(11.0, 13.9)	0.3	(0.2, 0.3)	6.9	(5.9, 8.0)	7.5	(6.5, 8.7)	4.2	(3.4, 5.2)	2.9	(2.3, 3.7)	1.3	(0.9, 1.9)	1.1	(0.8, 1.7)
	50-<65	2175	8.0	(7.0, 9.3)	0.1	(0.1, 0.2)	4.0	(3.3, 4.9)	4.0	(3.3, 5.0)	3.4	(2.7, 4.2)	1.3	(0.9, 1.9)	*0.3*	*(0.1, 0.6)*	0.6	(0.3, 1.0)
	65+	1736	5.7	(4.7, 6.9)	0.1	(0.1, 0.1)	2.4	(1.8, 3.3)	2.1	(1.5, 2.9)	1.9	(1.4, 2.7)	0.8	(0.4, 1.3)	0.2	(0.1, 0.6)	--	
Race/ethnicity	Hispanic	395	20.1	(16.4, 24.5)	0.5	(0.4, 0.6)	13.7	(10.6, 17.4)	11.6	(8.8, 15.2)	8.4	(6.0, 11.5)	6.3	(4.3, 9.2)	3.0	(1.7, 5.3)	*2.5*	*(1.4, 4.7)*
	Black	298	22.5	(18.0, 27.7)	0.5	(0.3, 0.6)	12.8	(9.4, 17.0)	13.4	(10.0, 17.8)	6.4	(4.1, 9.8)	5.4	(3.3, 8.6)	*3.4*	*(1.8, 6.1)*	*2.7*	*(1.4, 5.3)*
	White	5,956	9.0	(8.3, 9.7)	0.2	(0.1, 0.2)	4.7	(4.2, 5.3)	4.8	(4.3, 5.4)	3.1	(2.7, 3.6)	1.7	(1.4, 2.1)	0.6	(0.4, 0.8)	0.7	(0.5, 0.9)
	Asian	219	14.9	(10.5, 20.6)	0.3	(0.1, 0.4)	6.4	(3.8, 10.5)	7.3	(4.5, 11.6)	*4.6*	*(2.5, 8.3)*	--		--		--	
	Other	77	11.9	(6.1, 22.1)	*0.2*	*(0.1, 0.4)*	--		--		--		--		--		--	
# children in household	0	4835	8.9	(8.1, 9.7)	0.2	(0.1, 0.2)	4.7	(4.1, 5.3)	4.6	(4.1, 5.3)	3.2	(2.7, 3.7)	1.4	(1.1, 1.8)	0.5	(0.3, 0.7)	0.5	(0.4, 0.8)
	1	907	13.4	(11.3, 15.9)	0.3	(0.2, 0.3)	8.2	(6.5, 10.1)	7.9	(6.3, 9.9)	4.8	(3.5, 6.3)	3.4	(2.4, 4.8)	1.3	(0.8, 2.3)	*0.9*	*(0.4, 1.8)*
	2	715	12.0	(9.8, 14.6)	0.2	(0.2, 0.3)	6.2	(4.6, 8.2)	6.7	(5.1, 8.8)	4.2	(3.0, 6.0)	3.4	(2.3, 5.0)	1.8	(1.1, 3.1)	1.8	(1.1, 3.1)
	3+	313	12.1	(8.9, 16.3)	0.3	(0.2, 0.4)	7.0	(4.7, 10.4)	7.3	(4.9, 10.8)	4.5	(2.7, 7.5)	4.5	(2.7, 7.5)	*2.3*	*(1.1, 4.6)*	*2.9*	*(1.5, 5.5)*

Italics indicate estimates are unreliable, relative standard error > 30%
Those with cell size of 5 or less are suppressed.

Appendix E: Gambling Harms by Demographic Group

Appendix E1: Gambling Harm in the Past 12 Months Endorsed by Regular Gamblers by Gender (BGPS and BOPS unweighted)

		Male			Female		
		Unweighted	%	95% CI	Unweighted	%	95% CI
Total		3,651	51.7	(50.6, 52.9)	3,408	48.3	(47.1, 49.4)
Endorsed <u>financial</u> harm	2=yes	242	6.6	(5.9, 7.5)	152	4.5	(3.8, 5.2)
Endorsed <u>health</u> harm	2=yes	260	7.1	(6.3, 8.0)	137	4.0	(3.4, 4.7)
Endorsed <u>depression/suicide</u> harm	2=yes	150	4.1	(3.5, 4.8)	101	3.0	(2.5, 3.6)
Endorsed <u>Family/relationship</u> harm	2=yes	94	2.6	(2.1, 3.1)	56	1.7	(1.3, 2.1)
Endorsed <u>work/school</u> harm	2=yes	36	1.0	(0.7, 1.4)	24	0.7	(0.5, 1.1)
Endorsed <u>illegal acts</u> harm	2=yes	38	1.0	(0.8, 1.4)	21	0.6	(0.4, 0.9)
# harms endorsed	0	3,067	87.7	(86.6, 88.8)	2,974	91.8	(90.8, 92.7)
	1	228	6.5	(5.8, 7.4)	147	4.5	(3.9, 5.3)
	2	96	2.7	(2.3, 3.3)	61	1.9	(1.5, 2.4)
	3	53	1.5	(1.2, 2.0)	31	1.0	(0.7, 1.4)
	4	31	0.9	(0.6, 1.3)	14	0.4	(0.3, 0.7)
	5	*9*	*0.3*	*(0.1, 0.5)*	*11*	*0.3*	*(0.2, 0.6)*
	6	12	0.3	(0.2, 0.6)		--	-
# harms endorsed	Mean (95% CI)	3,496	0.2	(0.2, 0.3)	3,241	0.2	(0.1, 0.2)
	Median (95% CI)	3,496	0.0	(0.0, 0.0)	3,241	0.0	(0.0, 0.0)
One or more harms endorsed	2=yes	429	12.3	(11.2, 13.4)	267	8.2	(7.3, 9.2)

Italics indicate estimates are unreliable, relative standard error > 30%.

Those with cell size of 5 or less are suppressed.

Appendix E2: Gambling Harm in the Past 12 Months Endorsed by Regular Gamblers by Age (BGPS and BOPS unweighted)

		18-<30			30-<50			50-<65			65+		
		n	%	95% CI	n	%	95% CI	n	%	95% CI	n	%	95% CI
Total		892	12.9	(12.1, 13.7)	2,123	30.7	(29.6, 31.7)	2,175	31.4	(30.3, 32.5)	1,736	25.1	(24.1, 26.1)
Endorsed financial harm	2=yes	118	13.2	(11.2, 15.6)	146	6.9	(5.9, 8.0)	87	4.0	(3.3, 4.9)	42	2.4	(1.8, 3.3)
Endorsed health harm	2=yes	109	12.2	(10.2, 14.5)	160	7.5	(6.5, 8.7)	88	4.0	(3.3, 5.0)	37	2.1	(1.5, 2.9)
Endorsed depression/suicide harm	2=yes	53	6.0	(4.6, 7.7)	89	4.2	(3.4, 5.2)	73	3.4	(2.7, 4.2)	33	1.9	(1.4, 2.7)
Endorsed Family/relationship harm	2=yes	46	5.2	(3.9, 6.9)	62	2.9	(2.3, 3.7)	29	1.3	(0.9, 1.9)	13	0.8	(0.4, 1.3)
Endorsed work/school harm	2=yes	22	2.5	(1.6, 3.7)	27	1.3	(0.9, 1.9)	*6*	*0.3*	*(0.1, 0.6)*		--	
Endorsed illegal acts harm	2=yes	20	2.3	(1.5, 3.5)	24	1.1	(0.8, 1.7)	12	0.6	(0.3, 1.0)		--	
# harms endorsed	0	662	78.8	(75.9, 81.4)	1,779	87.6	(86.1, 89.0)	1,919	92.0	(90.7, 93.0)	1,562	94.3	(93.1, 95.3)
	1	85	10.1	(8.3, 12.3)	125	6.2	(5.2, 7.3)	94	4.5	(3.7, 5.5)	68	4.1	(3.3, 5.2)
	2	43	5.1	(3.8, 6.8)	56	2.8	(2.1, 3.6)	41	2.0	(1.5, 2.7)	16	1.0	(0.6, 1.6)
	3	27	3.2	(2.2, 4.6)	30	1.5	(1.0, 2.1)	18	0.9	(0.5, 1.4)	*7*	*0.4*	*(0.2, 0.9)*
	4	*7*	*0.8*	*(0.4, 1.7)*	25	1.2	(0.8, 1.8)	*11*	*0.5*	*(0.3, 0.9)*		--	
	5	*8*	*1.0*	*(0.5, 1.9)*	9	0.4	(0.2, 0.8)		--		0	0.0	(. , .)
	6	*8*	*1.0*	*(0.5, 1.9)*	6	0.3	(0.1, 0.7)		--		0	0.0	(. , .)
# harms endorsed	Mean (95% CI)	840	0.4	(0.4, 0.5)	2,030	0.3	(0.2, 0.3)	2,087	0.1	(0.1, 0.2)	1,656	0.1	(0.1, 0.1)
	Median (95% CI)	840	0.0	(0.0, 0.0)	2,030	0.0	(0.0, 0.0)	2,087	0.0	(0.0, 0.0)	*1,656*	*0.0*	*(0.0, 0.0)*
	Total (95% CI)	840	368.0	(303.7, 432.3)	2,030	508.0	(434.0, 582.0)	2,087	295.0	(243.2, 346.8)	1,656	133.0	(102.6, 163.4)
One or more harms endorsed	2=yes	178	21.2	(18.6, 24.1)	251	12.4	(11.0, 13.9)	168	8.0	(7.0, 9.3)	94	5.7	(4.7, 6.9)

Italics indicate estimates are unreliable, relative standard error > 30%.

Those with cell size of 5 or less are suppressed.

Appendix E3: Gambling Harm in the Past 12 Months Endorsed by Regular Gamblers by Race/Ethnicity (BGPS and BOPS unweighted)

		Hispanic			Black, not Hispanic			White, not Hispanic or Black		
		Unweighted	%	95% CI	Unweighted	%	95% CI	Unweighted	%	95% CI
Total		395	5.7	(5.2, 6.3)	298	4.3	(3.8, 4.8)	5,956	85.8	(84.9, 86.6)
Endorsed financial harm	2=yes	54	13.7	(10.6, 17.4)	38	12.8	(9.4, 17.0)	282	4.7	(4.2, 5.3)
Endorsed health harm	2=yes	46	11.6	(8.8, 15.2)	40	13.4	(10.0, 17.8)	287	4.8	(4.3, 5.4)
Endorsed depression/suicide harm	2=yes	33	8.4	(6.0, 11.5)	19	6.4	(4.1, 9.8)	186	3.1	(2.7, 3.6)
Endorsed Family/relationship harm	2=yes	25	6.3	(4.3, 9.2)	16	5.4	(3.3, 8.6)	103	1.7	(1.4, 2.1)
Endorsed work/school harm	2=yes	12	3.0	(1.7, 5.3)	10	3.4	(1.8, 6.1)	33	0.6	(0.4, 0.8)
Endorsed illegal acts harm	2=yes	10	2.5	(1.4, 4.7)	8	2.7	(1.4, 5.3)	40	0.7	(0.5, 0.9)
# harms endorsed	0	298	79.9	(75.5, 83.6)	224	77.5	(72.3, 82.0)	5,218	91.0	(90.3, 91.7)
	1	27	7.2	(5.0, 10.3)	32	11.1	(7.9, 15.2)	290	5.1	(4.5, 5.7)
	2	19	5.1	(3.3, 7.8)	19	6.6	(4.2, 10.1)	110	1.9	(1.6, 2.3)
	3	12	3.2	(1.8, 5.6)		--		65	1.1	(0.9, 1.4)
	4	9	2.4	(1.3, 4.6)	6	2.1	(0.9, 4.5)	31	0.5	(0.4, 0.8)
	5		--			--		12	0.2	(0.1, 0.4)
	6	*	--			--		7	0.1	(0.1, 0.3)
# harms endorsed	Mean (95% CI)	373	0.5	(0.4, 0.6)	289	0.5	(0.3, 0.6)	5,733	0.2	(0.1, 0.2)
	Median (95% CI)	373	0.0	(0.0, 0.0)	289	0.0	(0.0, 0.0)	5,733	0.0	(0.0, 0.0)
One or more harms endorsed	2=yes	75	20.1	(16.4, 24.5)	65	22.5	(18.0, 27.7)	515	9.0	(8.3, 9.7)

		Asian, not Hispanic, Black or White			Other, not Hispanic, Black, White or Asian		
		Unweighted	%	95% CI	Unweighted	%	95% CI
Total		219	3.2	(2.8, 3.6)	77	1.1	(0.9, 1.4)
Endorsed financial harm	2=yes	14	6.4	(3.8, 10.5)		--	
Endorsed health harm	2=yes	16	7.3	(4.5, 11.6)		--	
Endorsed depression/suicide harm	2=yes	10	4.6	(2.5, 8.3)		--	
Endorsed Family/relationship harm	2=yes		--			--	
Endorsed work/school harm	2=yes		--			--	
Endorsed illegal acts harm	2=yes		--			--	
# harms endorsed	0	166	85.1	(79.4, 89.5)	59	88.1	(77.9, 93.9)
	1	21	10.8	(7.1, 15.9)		--	
	2		--			--	
	3		--			--	
	4	0	0.0	(,)	0	0.0	(,)
	5		--		0	0.0	(,)
	6		--		0	0.0	(,)
# harms endorsed	Mean (95% CI)	195	0.3	(0.1, 0.4)	67	0.2	(0.1, 0.4)
	Median (95% CI)	195	0.0	(0.0, 0.0)	67	0.0	(-0.0, 0.0)
One or more harms endorsed	2=yes	29	14.9	(10.5, 20.6)	8	11.9	(6.1, 22.1)

Italics indicate estimates are unreliable, relative standard error > 30%.
Those with cell size of 5 or less are suppressed.

Appendix E4: Gambling Harm in the Past 12 Months Endorsed by Regular Gamblers by Number of Children in the Household (BGPS and BOPS unweighted)

		# children in household under 18					
		0			**1**		
		Unweighted	**%**	**95% CI**	**Unweighted**	**%**	**95% CI**
Total		4,835	71.4	(70.3, 72.5)	907	13.4	(12.6, 14.2)
Endorsed financial harm	2=yes	225	4.7	(4.1, 5.3)	74	8.2	(6.5, 10.1)
Endorsed health harm	2=yes	224	4.6	(4.1, 5.3)	72	7.9	(6.3, 9.9)
Endorsed depression/suicide harm	2=yes	153	3.2	(2.7, 3.7)	43	4.8	(3.5, 6.3)
Endorsed Family/relationship harm	2=yes	68	1.4	(1.1, 1.8)	31	3.4	(2.4, 4.8)
Endorsed work/school harm	2=yes	23	0.5	(0.3, 0.7)	12	1.3	(0.8, 2.3)
Endorsed illegal acts harm	2=yes	25	0.5	(0.4, 0.8)	*8*	*0.9*	*(0.4, 1.8)*
# harms endorsed	0	4,250	91.1	(90.3, 91.9)	753	86.6	(84.1, 88.7)
# harms endorsed	1	243	5.2	(4.6, 5.9)	56	6.4	(5.0, 8.3)
# harms endorsed	2	90	1.9	(1.6, 2.4)	24	2.8	(1.9, 4.1)
# harms endorsed	3	45	1.0	(0.7, 1.3)	20	2.3	(1.5, 3.5)
# harms endorsed	4	21	0.5	(0.3, 0.7)	11	1.3	(0.7, 2.3)
# harms endorsed	5	*8*	*0.2*	*(0.1, 0.3)*		--	
# harms endorsed	6	*6*	*0.1*	*(0.1, 0.3)*		--	
# harms endorsed	Mean (95% CI)	4,663	0.2	(0.1, 0.2)	870	0.3	(0.2, 0.3)
	Median (95% CI)	4,663	0.0	(0.0, 0.0)	870	0.0	(0.0, 0.0)
One or more harms endorsed	2=yes	413	8.9	(8.1, 9.7)	117	13.4	(11.3, 15.9)

		# children in household under 18					
		2			**3+**		
		Unweighted	**%**	**95% CI**	**Unweighted**	**%**	**95% CI**
Total		715	10.6	(9.9, 11.3)	313	4.6	(4.1, 5.1)
Endorsed financial harm	2=yes	44	6.2	(4.6, 8.2)	22	7.0	(4.7, 10.4)
Endorsed health harm	2=yes	48	6.7	(5.1, 8.8)	23	7.3	(4.9, 10.8)
Endorsed depression/suicide harm	2=yes	30	4.2	(3.0, 6.0)	14	4.5	(2.7, 7.5)
Endorsed Family/relationship harm	2=yes	24	3.4	(2.3, 5.0)	14	4.5	(2.7, 7.5)
Endorsed work/school harm	2=yes	13	1.8	(1.1, 3.1)	*7*	*2.3*	*(1.1, 4.6)*
Endorsed illegal acts harm	2=yes	13	1.8	(1.1, 3.1)	*9*	*2.9*	*(1.5, 5.5)*
# harms endorsed	0	609	88.0	(85.4, 90.2)	261	87.9	(83.7, 91.1)
# harms endorsed	1	44	6.4	(4.8, 8.4)	12	4.0	(2.3, 7.0)
# harms endorsed	2	15	2.2	(1.3, 3.6)	13	4.4	(2.6, 7.4)
# harms endorsed	3	*8*	*1.2*	*(0.6, 2.3)*		--	
# harms endorsed	4	*9*	*1.3*	*(0.7, 2.5)*	0	0.0	(,)
# harms endorsed	5		--			--	
# harms endorsed	6		--			--	
# harms endorsed	Mean (95% CI)	692	0.2	(0.2, 0.3)	297	0.3	(0.2, 0.4)
	Median (95% CI)	692	0.0	(0.0, 0.0)	297	0.0	(0.0, 0.0)
One or more harms endorsed	2=yes	83	12.0	(9.8, 14.6)	36	12.1	(8.9, 16.3)

Italics indicate estimates are unreliable, relative standard error > 30%.
Those with cell size of 5 or less are suppressed.