

Gambling Harm and the Prevention Paradox in Massachusetts

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Abstract

The term “prevention paradox” focuses on the notion that more aggregate harm is experienced by low-risk individuals even though high-risk individuals experience the greatest amount of harm per individual. This paper examines whether the prevention paradox in relation to gambling harms exists in Massachusetts. The analysis is drawn from two population surveys and the distribution of harms across four gambling severity groups is examined. The results show that because of the larger size of the three lower severity groups, even the much smaller average number of harms endorsed by members of these groups accounts for nearly three-quarters (72.9%) of the aggregate number of harms across all groups. While almost all individuals in the highest severity group report one or more harms, any individual reporting one or more harms is more likely to be in a lower severity group. Financial, health, and emotional/psychological harms are more common and more broadly distributed across the gambling severity groups compared to relationship, work/school, and illegal harms. In contrast to a similar study in Finland, which found that the most severe group accounted for over 50% of the harms in the health, relationship, and illegal harm domains, the prevention paradox is supported across all harm domains in Massachusetts.

Keywords: Gambling harms, online panel, population survey, prevention paradox, problem gambling

Introduction

Gambling and problem gambling exist on a continuum that stretches from non-gambling, at one end, to problem gambling, at the other end. Problem gambling is associated with a range of physical and emotional health issues, including depression, anxiety, suicidal ideation, substance use, and addiction (Hodgins & el-Guebaly, 2009; Petry, 2005). Until quite recently, gambling harms have largely been identified solely with the clinical entity of problem gambling. The assumption is that gambling harm can be minimized by treating individuals with this condition or by preventing people from progressing to this state. Over 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 et al., 2017). This approach recognizes that there are many more

people harmed by gambling than reflected in the rates of problem gambling alone.

The term “prevention paradox” was coined by the British epidemiologist Geoffrey Rose (1992). In this classic text, Rose called for a shift from public health prevention strategies focused primarily on individuals to strategies focused on populations. Prevention strategies focused on individuals seek to identify high-risk individuals and offer them some individual protection. In contrast, prevention strategies focused on populations seek to modify or mitigate the determinants of disease in the population as a whole. The paradox of such an approach is that preventative measures that bring large benefits to the community may offer little to each participating individual.

The use of the term “prevention paradox” in relation to gambling focuses on one aspect of the original concept, namely the situation in which a far greater

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number of individuals experiencing gambling-related harm are low-risk gamblers because there are far more low-risk gamblers than high-risk gamblers in the population (Browne & Rockloff, 2018). The “paradox” is that more aggregate harm is suffered by the low-risk gambling population even though people in the high-risk population (e.g., heavy gamblers and problem gamblers) suffer the greatest amount of harm per individual. While the prevention paradox in relation to gambling does not fully reflect the original concept, it can be a useful lens with which to explore the distribution of the impacts of gambling in the population and the degree to which various forms of harm are concentrated in high-risk groups.

Harmful gambling can be challenging to define and there is, as yet, no broad consensus on the best way of measuring it. The typical approach has been to identify harms experienced by people with subclinical levels of problem gambling symptomatology (Canale et al., 2016; Currie et al., 2009; Raisamo et al., 2015). However, this approach does not adequately assess the harm caused to other people since questions in assessment instruments usually refer only to harms experienced and reported by individuals. Additionally, as Delfabbro and King (2017) pointed out, endorsement of some questions in these problem gambling assessment instruments may portend future harm but do not represent unambiguous current harm in and of themselves (e.g., feeling guilty about gambling; gambling with larger amounts of money to get the same feeling of excitement, etc.).

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.

Following the development of a taxonomy of gambling-related harms, a 72-item instrument assessing gambling harms was created for use in population surveys (Browne et al., 2017, 2018). 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 et al., 2020).

The purpose of this paper is to replicate the analytic approach developed in the Finnish study and examine whether the prevention paradox in relation to gambling harms holds up in the Massachusetts context. In addition to extending our understanding of gambling harms in different cultural and regulatory contexts, this analysis builds on prior work by using Massachusetts survey data and by employing an instrument that comprehensively and unambiguously assesses harm to self and others. The aim is to determine whether the prevention paradox applies to Massachusetts, to examine the distribution of different harms in the population, and to assess the extent to which different types of harm are concentrated in higher-risk groups.

Methods

The present analysis is drawn 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 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 groups.

Data Sources

In carrying out the BGPS, an address-based sampling 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 survey. Households where no response was received after 4 weeks were mailed paper versions of the questionnaire and invited to complete the survey via this modality and return it by mail. Households where no response was received after another 4 weeks were called on their landline (this number was available in 78% of cases) and invited to answer the questions over the telephone. 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 is available (Author et al., 2017a). A final sample of 9578 respondents was obtained with a 36.6% American Association for Public Opinion Research RR3 response rate (2016).

Ipsos Public Affairs (Ipsos) conducted the BOPS. Ipsos maintains an online panel of individuals across the country who have agreed to participate in research studies. The Massachusetts panel includes approximately 17,000 individuals. When respondents joined the Ipsos panel, they provided demographic information about themselves and their household (e.g., age, gender, state of residence, and county of residence). Ipsos used this information to email a stratified sample of respondents by age, gender, and region (Western vs. Eastern Massachusetts) that was proportional to the number of people in these groups as reported by the US 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 5000 complete surveys were obtained. The 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 is available (Author et al., 2017b). Of the 26,913 people who began the BOPS, 18,580 were deemed to be not eligible (primarily out-of-state panelists), 2946 quit before finishing, 293 were excluded because of a full age \times gender quota, and 48 were removed because of data quality issues. In the end, a total of 5046 completed surveys were obtained.

Since the same questionnaire was used for both the BGPS and BOPS, identical questions about gambling participation were utilized to define “regular gamblers.” We chose to focus on regular gamblers because only these individuals were routed through the problem gambling section of the questionnaire. From the total of 9578 BGPS and 5046 BOPS respondents, individuals were considered to be regular gamblers if they gambled at least once a month

or more in the past 12 months on one or more of the following activities: traditional lottery, instant games, raffle tickets, daily lottery games, sports betting, bingo, casino, horse racing, and private betting. This resulted in a data set of 5852 respondents with 57.3% from the BGPS and 42.7% from the BOPS. Table 1 provides details of select demographic characteristics of regular gamblers in the BGPS and BOPS samples.

Baseline Online Panel Survey regular gamblers were significantly more likely than BGPS regular gamblers to be male and under the age of 65, and to have annual household incomes between \$50,000 and \$100,000. Baseline Online Panel Survey regular gamblers were significantly less likely than BGPS regular gamblers to be aged 65 and older, to have attended college or graduate school or attained a graduate degree, and to have annual household incomes over \$150,000.

Assessing Gambling Harms and Gambling Severity

The approach to assessing gambling-related harm used the items that make up the “Problems” section of the 14-item Problem and Pathological Gambling Measure (PPGM) (Author & Author, 2010, 2014). These items comprehensively assess the range of unambiguous harms associated with excessive gambling (i.e., financial, relationship, psychological, physical health, work/school, and illegal

activity) and only ask about clear and “significant” harm in each of these categories. The PPGM also asks about problems/harms caused to the person or someone close to them.

Table 2 presents the PPGM main and branching questions that were used to assess gambling harms in the BGPS and the BOPS. Endorsements of gambling harms based on responses to these questions were collapsed into six domains: financial, health, emotional/psychological, family/relationships, work/school, and illegal acts.

The approach to assessing gambling severity was modeled on the approach taken in the Finnish Gambling Harms Survey which utilized the PPGM to assess problem gambling and the Gambling Harms Checklist to assess gambling harms (Browne et al., 2020). The Finnish study tested whether the prevention paradox applied to gambling in Finland among regular gamblers and built on previous work by restricting the measure of severity to PPGM items that captured only impaired control and behavioral dependence and not harms more generally.

As in the Finnish study, past-year gambling severity was assessed in the present study using a subset of the 14-item PPGM that

Table 1.
Select Demographics of Regular Gamblers in the BGPS and BOPS (Unweighted)

Variable	Category	Baseline General Population Survey (N = 3355)		Baseline Online Panel Survey (N = 2497)	
Gender	Male	50.5	(48.8, 52.2)	56.4	(54.5, 58.4)
	Female	48.5	(46.8, 50.2)	43.6	(41.6, 45.5)
	Missing	1.0	(.7, 1.4)	.0	NA
Age	18 – 34	10.4	(9.4, 11.5)	26.2	(24.5, 28.0)
	35 – 64	53.1	(51.5, 54.8)	57.1	(55.2, 59.1)
	65+	32.6	(31.1, 34.2)	16.6	(15.2, 18.1)
	Missing	3.8	(3.2, 4.6)	0.0	NA
Ethnicity	Hispanic	4.9	(4.3, 5.7)	6.4	(5.5, 7.4)
	Black	4.3	(3.7, 5.1)	4.4	(3.7, 5.3)
	White	84.4	(83.1, 85.5)	85.3	(83.9, 86.6)
	Asian	2.3	(1.9, 2.9)	2.6	(2.0, 3.3)
	Other or missing	4.1	(3.4, 4.8)	1.3	(0.9, 1.8)
Education	High school or less	24.9	(23.5, 26.4)	26.0	(24.3, 27.8)
	Some college or BA	54.8	(53.1, 56.5)	61.2	(59.2, 63.0)
	Graduate degree	18.5	(17.2, 19.8)	12.3	(11.0, 13.6)
	Missing	1.8	(1.4, 2.3)	0.6	(0.3, 0.9)
Annual household income	Less than \$15,000	9.8	(8.9, 10.9)	8.2	(7.2, 9.4)
	\$15,000 – <\$30,000	11.9	(10.8, 13.0)	13.9	(12.6, 15.4)
	\$30,000 – <\$50,000	15.6	(14.4, 16.9)	18.4	(16.9, 20.0)
	\$50,000 – <\$100,000	27.2	(25.8, 28.8)	32.8	(31.0, 34.7)
	\$100,000 – <\$150,000	13.9	(12.8, 15.2)	13.3	(12.1, 14.7)
	\$150,000 or more	9.4	(8.5, 10.5)	4.8	(4.1, 5.8)
Missing	12.0	(11.0, 13.2)	8.4	(7.4, 9.6)	

BGPS = Baseline General Population Survey; BOPS = Baseline Online Panel Survey; BA = Bachelor of Arts.

Table 2.
Gambling Harms in the Past 12 Months

Category	Question No.	Description of Question
Financial	GP6a	Financial problems because of gambling
	GP6b	Filed for bankruptcy because of gambling
Health	GP7a	Health or stress problems because of gambling
	GP7b	Gambling-related health problems resulted in seeking medical or psychological help
Emotion/psychological	GP10a	Significant guilt, anxiety, or depression because of gambling
	GP10b	Suicidal thoughts because of gambling
	GP10c	Attempted suicide because of gambling
Family/relationships	GP11a	Relationship problems because of gambling
	GP11b	Domestic violence because of gambling
	GP11c	Separation or divorce because of gambling
	GP12a	Neglect of children or family because of gambling
	GP12b	Child welfare services involved because of gambling
Work/school	GP13a	Work or school problems because of gambling
	GP13c	Lost job or quit school due to gambling
	GP13d	Received public assistance or welfare payments because of gambling
Illegal	GP14a	Commission of illegal acts because of gambling
	GP14b	Average amount of money illegally obtained to gamble
	GP14c	Arrested because of gambling
	GP14d	Convicted of offense because of gambling
	GP14g	Incarcerated because of gambling

measure impaired control (4 items) and behavioral dependence (3 items) to create a gambling severity typology. Examination of endorsement patterns for these items showed that 455 individuals were missing responses to one or more of these items. Rather than code these responses as “no” (as was done in the Finnish study), we chose to exclude some of these respondents from the analysis. Missing responses were set to zero for those respondents whose total score was zero; respondents with missing responses whose total score was more than zero were excluded because of uncertainty about why they chose not to answer specific questions. This resulted in the exclusion of 148 respondents from the analysis. Scores for the impaired control and behavioral dependence items were added together and categorized into four gambling severity groups: none, 1 – 2, 3 – 4, and 5 or more. In the present study, the 5+ threshold defines the high-risk group for the purposes of evaluating the prevention paradox among the Massachusetts survey respondents. Again, this threshold was adopted to replicate the Finnish analysis as closely as possible.

Statistical Analysis

Descriptive analyses were conducted to summarize the prevalence of harms reported by different severity groups. Summaries were calculated for each specific item of harm although not all of these are reported due to small cell sizes. The prevalence of harms was summarized within each domain and across all domains. For graphical visualization of the results, we relied primarily on mosaic plots. Mosaic plots provide a way to visualize relative

frequencies, conditional on two factors (categories), in which the area of each rectangle is proportional to the probability that it will be observed. Mosaic plots can also be thought of as a stacked bar chart, in which the width of each bar is determined by the relative prevalence of that group. All analyses were conducted in SAS (SAS 9.4 TS Level 1M2).

Results

Figure 1 illustrates the inverse relationship between gambling severity and gambling harms and how these combine to contribute to the aggregate impact of each group. The first panel presents the proportion of individuals in each of the PPGM severity categories among regular gamblers in the combined sample and demonstrates that prevalence decreases markedly in relation to increasing severity. The second panel shows the average count of harms across all domains conditional on membership in each severity group and demonstrates that the number of harms increases markedly in relation to increasing severity. Across all individuals, the Pearson’s correlation coefficient between the PPGM severity score and the count of harms was .51 which is quite similar to the same correlation in the Finnish study (.49).

Taken together, Figure 1 and Table 3 illustrate that because of the larger size of the three lower severity groups, even the much smaller average number of harms endorsed by members of these groups accounts for nearly three-quarters (72.9%) of the aggregate number of harms across all of the groups.

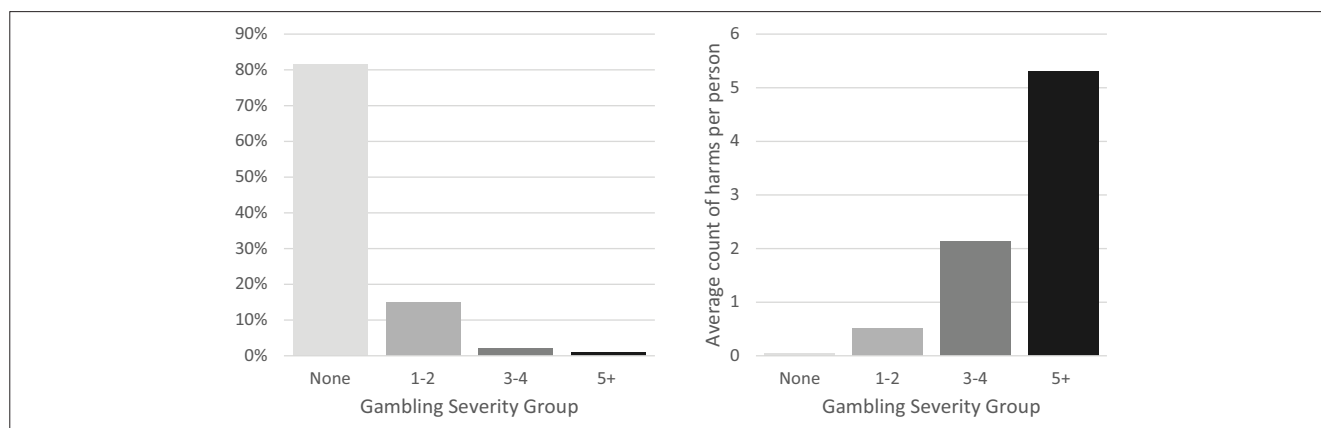


Figure 1. Prevalence of Gambling Severity and Gambling Harms.

Figure 2 presents a mosaic plot of the number of individuals experiencing at least one harm across the gambling severity categories. The relative area of each dark-shaded rectangle describes the probability that a member of the sample will report one or more harms and be a member of a given severity group. This figure illustrates that while almost all of the individuals in the highest severity group report one or more harms, any particular individual reporting one or more harms is far more likely to be in a lower severity group. An important limitation of this figure is that it ignores differing degrees of harm.

A more nuanced view of the distribution of gambling harms across severity groups is provided in Figure 3. This figure shows the proportional distribution of severity by the number of harms. The shading of each bar illustrates the proportion of regular gamblers in each gambling severity group reporting an increasing number of harms which range from 1 to 11+ harms (out of a total of 20 harms measured). Keeping in mind the differing scales on the y-axis for the two panels, the figure demonstrates that the most severe group (5+) makes up less than a third of gamblers reporting one, two, or three harms but more than 70% of gamblers reporting six or seven harms and 90% or more of gamblers reporting nine or more harms.

A limitation of examining the aggregate count of harms is that this approach ignores differences in type and severity of harms. Figure 4 illustrates the relative proportion of harms reported, separated by harm domain and severity group. This figure shows that financial, health, and emotional/psychological harms are

more common and more broadly distributed across the gambling severity groups. The prevention paradox is supported for these harm domains. In contrast, illegal harms are not commonly reported and are much more likely to be reported by the highest-risk severity group. However, even in the case of this less common harm, it is broadly distributed across the different severity groups with the 5+ gambling severity group accounting for 37.2% of illegal harms. While cell sizes for the lowest gambling severity group are too small to report (≤ 5), the highest severity group accounts for 36.6% of work/school harms and 32.0% of relationship harms. This finding contrasts with the Finnish study (Browne et al., 2020) which found that the most severe group accounted for over 50% of the harms in the health, relationships, and illegal harms domains. This led the researchers to conclude that the prevention paradox was not supported for these domains in Finland.

Discussion

The original prevention paradox focused attention on the importance of populations, as opposed to individuals, when developing prevention strategies intended to modify or mitigate determinants of disease. In cases where a large proportion of the population with a limited risk actually represents the greater burden of disease, the focus should be on shifting the distribution curve lower to reduce the risk for the entire population. This notion is variously referred to as the “total consumption model” or the “single distribution theory” and has been used internationally to justify measures to restrict alcohol consumption in order to reduce total consumption and thereby reduce the proportion of heavy drinkers in the population. The paradox in the original prevention paradox is that measures to restrict alcohol consumption, for example, may bring large benefits to the community but can be onerous for individual consumers.

In the gambling field, more attention has been garnered by the broader, population-focused approach to understanding the impacts of gambling. From this perspective, the prevention paradox refers to the notion that more aggregate harm is suffered by gamblers who do not meet the diagnostic criteria for problem or disordered gambling because there are so many more of these gamblers compared with heavy gamblers who suffer much greater individual harm.

Table 3. Proportion of Harms by Gambling Severity Group

Gambling Severity Group	Group Size	Average No. of Harms	Total Harms by Group	Proportion of Harms by Group
None	4476	.0436	195	16.4%
1 – 2	829	.5138	426	35.8%
3 – 4	115	2.1391	246	20.7%
5+	61	5.3114	324	27.2%
	5481	.2172	1191	100.0%

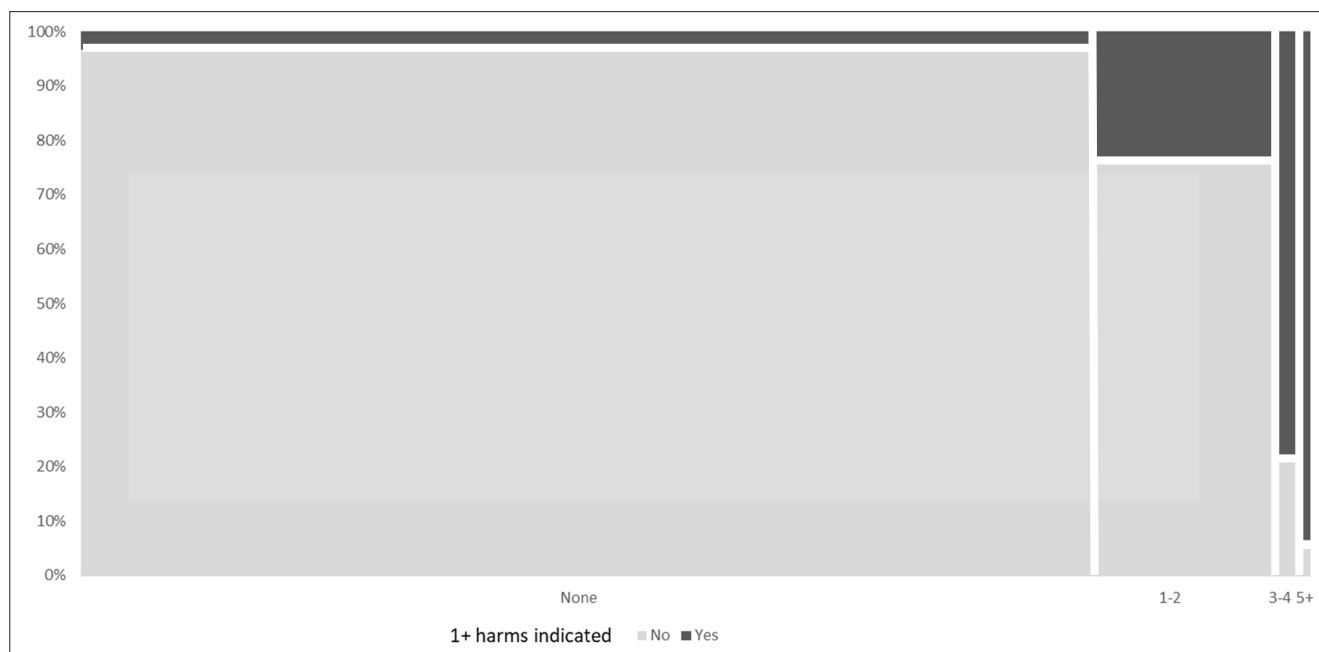


Figure 2. Proportion of Severity Groups Reporting One or More Harms.

This study examined the prevalence of gambling-related harms among regular gamblers in Massachusetts and specifically the number of harms attributable to different levels of gambling severity as assessed by the PPGM. Using the lens of the prevention paradox, we investigated whether the majority of harms arose from the highest severity category: those displaying control issues and behavioral dependence at the highest 5+ level. Overall, we found that the prevention paradox was supported in Massachusetts with over 70% of all harms arising from the lower severity groups. The large majority of respondents reporting gambling harms reported less than 0.17 harms and these individuals were unlikely to be in the highest-severity group. Respondents reporting the most harms (10 or more out of 20) were very likely to be in the highest-severity group. Among regular gamblers in Massachusetts, while almost all of the individuals in the 5+ severity group report one or more harms, any particular individual reporting one or more harms is far more likely to be in a lower severity group. Finally, we found that some harms are more common and more broadly distributed across the gambling severity groups while other harms are less common. However, in contrast to the Finnish study, the 5+ group in Massachusetts does not account for over 50% of harms in any domain. Our conclusion is that the prevention paradox is supported across all harm domains in Massachusetts.

The question posed by the present analysis is whether there are distinct public health, prevention, and treatment implications of such a finding. The classic formulation of the prevention paradox would suggest that if the aggregate number of harms is higher among individuals with less severe problems, then primary prevention efforts aimed at altering unhealthy or unsafe behaviors across the entire population should be emphasized, rather than or in addition to secondary prevention efforts aimed at halting or slowing the progress of the disorder among individuals at risk for gambling problems and tertiary prevention efforts aimed at helping people manage long-term or chronic issues among those already

experiencing gambling problems. The challenge is not to eliminate these latter programs in favor of primary programs but, rather, to balance the effort and resources going to each type of prevention.

In considering the implications of our analysis of the prevention paradox in relation to gambling in Massachusetts, it is probably too simplistic to look at a single point in time in considering the distribution of gambling harms in the population. Such an approach does not take into account the recurring nature of harms among individuals experiencing gambling problems although there have been calls for explicit attention to be paid to the temporal and “legacy” harms of gambling problems as these manifest generationally in families (Langham et al., 2016). It is quite possible that the majority of gamblers in Massachusetts who experienced harms only experienced one or two harms or only experienced them briefly and having “burnt their fingers,” then modified their gambling behavior. Once an individual develops a gambling problem, the harms tend to recur such that the total number of harms experienced by individuals with problems may in fact outweigh the total number of harms experienced by individuals with less severe experiences.

Higher rates of financial and health harms among regular gamblers in Massachusetts suggest the importance of raising awareness about gambling-related harm and educating community-based organizations about the extent of gambling harms among regular gamblers. Beyond community organizations, health professionals, financial counselors, and even financial institutions such as banks and credit unions 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 where to direct them for help if they express concerns.

Limitations and Directions for Future Research

Both the BGPS and the BOPS have some limitations. With regard to the BGPS, one potential limitation is the 36.6% response rate

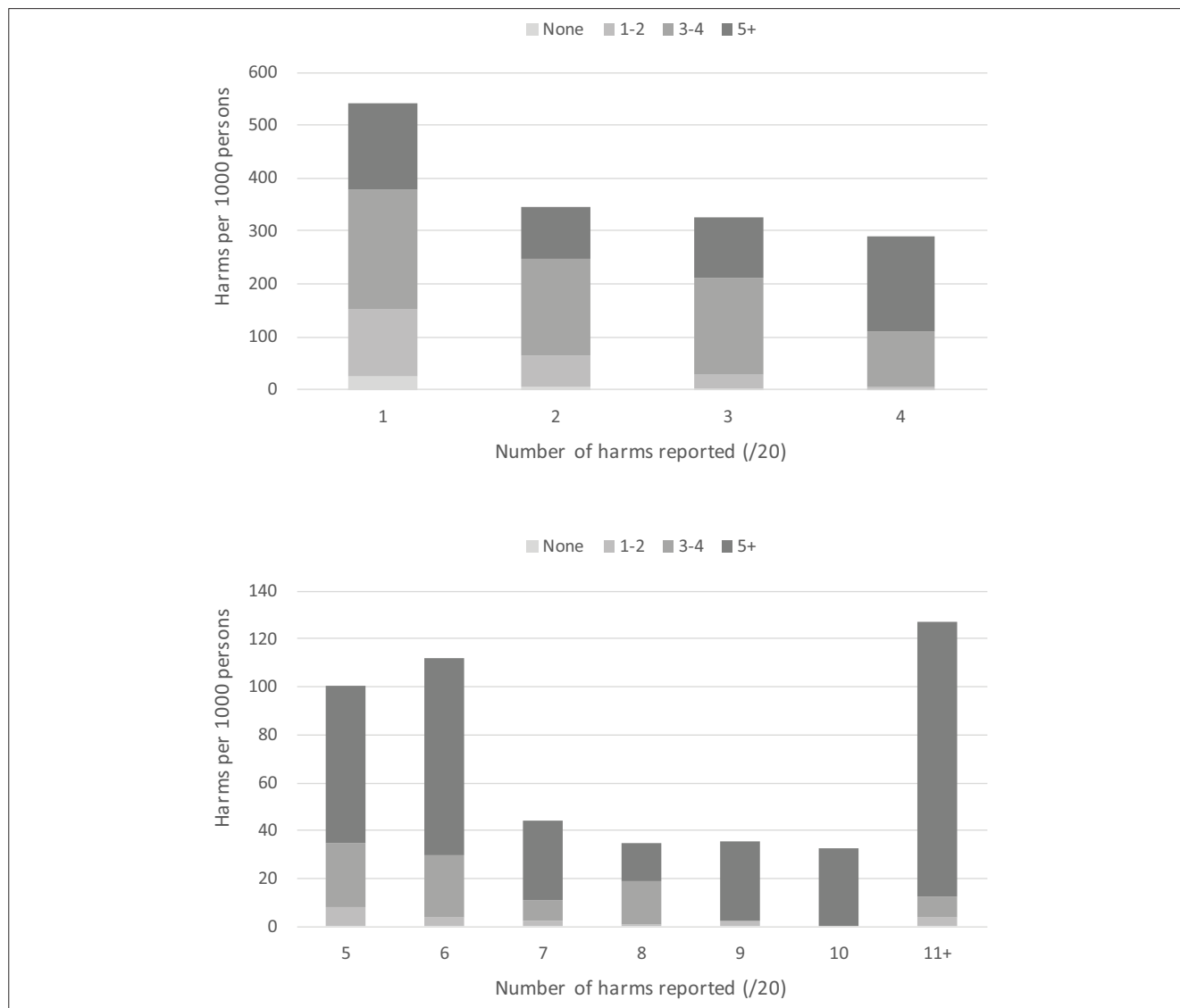


Figure 3. Gambling Severity Groups and the Number of Harms.

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. Finally, 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. 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 assumption that the respondents in the combined sample are a simple random sample. While endorsement rates of specific

harms are three to four times lower among regular gamblers in the BGPS compared to the BOPS, the rank order of endorsements is similar, with financial problems and health problems ranking first or second and relationship problems, work/school problems, and illegal acts ranking third, fourth and fifth. We believe the similar patterns of endorsement of harms in the two samples support our decision but recognize this feature of the study as a limitation and urge caution in generalizing the results to Massachusetts as a whole.

Another 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.

A further limitation relates to the restriction of our analysis to those respondents who gambled at least once a month or more

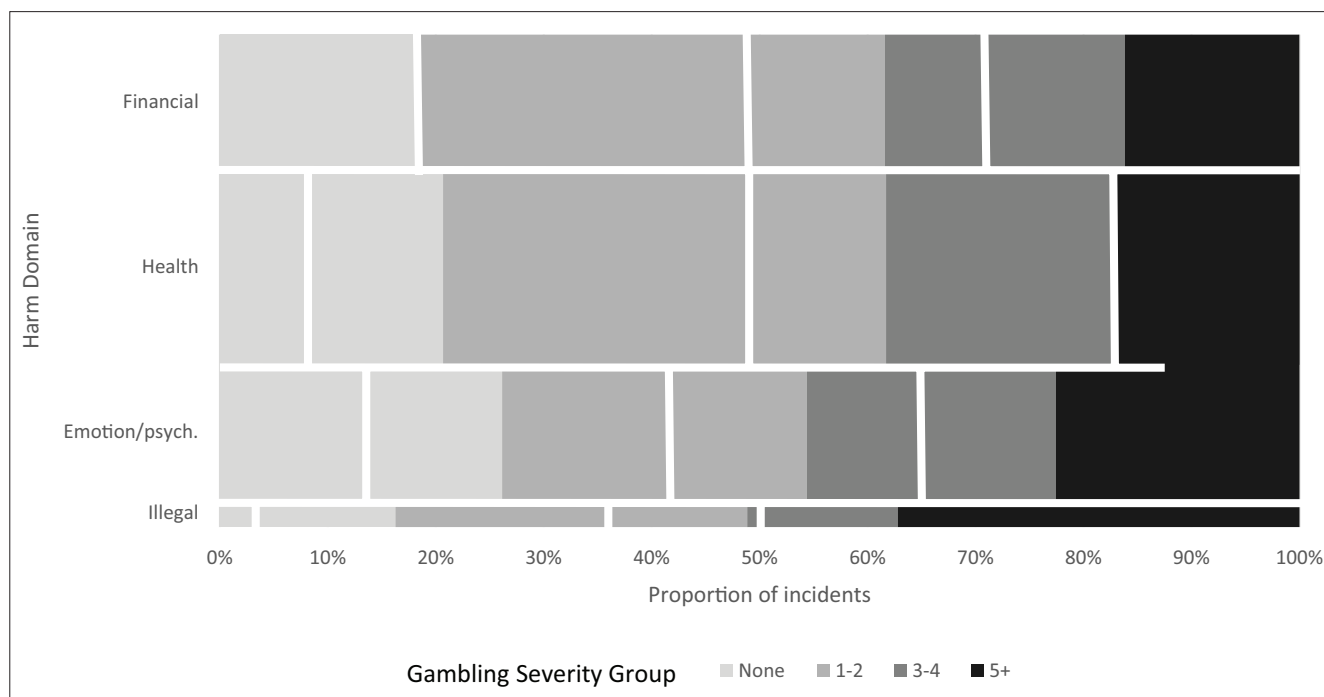


Figure 4. Proportion of Harms as a Function of Harm Domains and Gambling Severity Group.

often. Any harms experienced by affected others as well as those who gambled only occasionally—including those attempting to practice abstinence with infrequent relapses—were excluded from the analysis.

A final limitation of the study is that the data were collected in 2013 and 2014, prior to the opening of any casinos in Massachusetts. It is possible that the distribution of gambling harms in Massachusetts has changed since the casinos opened and we plan to analyze data from two follow-up surveys (general population and online panel) that were planned or fielded in 2021 to determine whether in fact this has happened.

Ethics Committee Approval: Ethics committee approval was received for this study from the University of Massachusetts Institutional Review Board. Reference numbers: 2013-1695 (BGPS) and 2013-1709 (BOPS).

Informed Consent: Participants provided consent by voluntarily participating in the survey after being provided the following information: “The University of Massachusetts is conducting a study about health and recreational behavior in Massachusetts. This survey is private and confidential. We have a Federal Certificate of Confidentiality that is designed to protect the confidentiality of your research data from court order subpoena. We can provide you with more information if you would like. Taking part is up to you. You don’t have to answer any question you don’t want to, and you can stop at any time. Almost everyone will be able to finish the survey within 10 – 15 min. If you have questions about the Federal Certificate of Confidentiality, please visit: <http://grants.nih.gov/grants/policy/cocs/faqs.htm#187>.”

Peer Review: Externally peer-reviewed.

Author Contributions: RAV led the creation of the manuscript and is the lead author. MZ was responsible for data management, data cleaning, and data analysis. RJW contributed to all sections of the manuscript. VE drafted several sections of the manuscript.

Conflict of Interest: The authors have no conflicts of interest to declare.

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