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Division on Addiction

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A BENCHMARK STUDY FOR MONITORING EXPOSURE TO NEW GAMBLING OPPORTUNITIES: FINAL REPORT

Prepared for the National Center for Responsible Gaming by
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May 29, 2013

Updated June 4th w/ new title page and clearer appendix and abstract.
Updated June 7th with additional detail about human subjects approval and sample recruitment.

Notes. This report provides the scientific content of a final report to the National Center for Reponsible Gaming for a Seed Grant award. Please direct all correspondence about this report to Dr. Sarah Nelson, Associate Director of Research, Division on Addiction, or Dr. Debi LaPlante, Director of Research & Academic Affairs, Division on Addiction, Cambridge Health Alliance, a teaching affiliate of Harvard Medical School, 101 Station Landing, Medford, MA 02155. Email: sarah_nelson@hms.harvard.edu; debi_laplante@hms.harvard.edu.

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ABSTRACT

The Commonwealth of Massachusetts is nearing an historic change to its legal gambling landscape. The expansion of legal gambling opportunities to include large resort-style casinos presents a unique opportunity to learn about the short- and long-term ramifications of such expansion on public health. Because this period represents a natural experiment within Massachusetts, there is a limited window of opportunity to collect accurate baseline data. To determine how new gambling opportunities impact the public's gambling-related health, it is imperative to establish baseline estimates of gambling-related behaviors and health prior to the opening of new gambling venues. This project used a statewide online survey recruited via random household survey to establish a baseline estimate of gambling behaviors and health within Massachusetts' communities that can be used as the benchmark for a prospective long-term longitudinal investigation of the effect of gambling expansion on public health.

SPECIFIC AIMS

In our original application, we set forth two specific aims for this Seed Grant. The first was to establish baseline statewide estimates of the prevalence of gambling behaviors and gambling-related problems in MA. The second was to investigate intrastate variations in gambling behaviors and problems across zip codes in MA. Both of these aims serve as foundational steps for working toward two larger goals: measuring the effect of gambling expansion on public health over time, and establishing a social indicator approach to monitoring gambling-related health.

Our goals remained the same throughout the project; however, we slightly revised the Aims of the Seed Grant based on our investigation of our sample (i.e., the Massachusetts arm of the Knowledge Networks (now *The GfK Group*: GfK) nationally-representative Knowledge Panel). Evidence suggests that Knowledge Panels are among the best of the online survey panels because of rigorous sampling procedures. Their sampling frames (Random Digit Dial [RDD] prior to 2009 and Address-Based Sampling [ABS] after 2009) are comprehensive, they provide computers to those without computers or Internet access, and they do not supplement their samples with convenience samples, thereby risking the introduction of bias. When compared with US Census demographics, their panels are nationally-representative and well-matched in terms of demographics and regional distribution at the state level. Nevertheless, once this study began, we confirmed that the Panel recruitment rate is low. While survey completion rates among panelists are relatively high (e.g., 60-70% of panel members invited complete a given survey), recruitment rates into the panel are considerably lower (e.g., 4-14% of households from the sampling frame are recruited into the panel). Although analyses suggest that the Panel generally reflects the demographics of Massachusetts with a few exceptions (see Table 1), the low initial recruitment rate, and consequent increased chance of selection bias, limits our confidence that the rates we observed in our sample are state-representative. We had a large enough N to make comparisons at the regional, but not zip code level, using the specific regions that MA has designated for each resort-style casino (i.e., Western, Southeastern, and greater Boston). Therefore, our revised aims were as follows:

> **1) To investigate gambling behaviors, attitudes, and problems among MA residents prior to gambling expansion; and**
>
> **2) To investigate intrastate variations in gambling behaviors and gambling-related problems across the three regions in MA designated for gambling expansion (i.e., Western, Southeastern, and greater Boston).**

We concluded our Specific Aims section in our original proposal by noting that we hoped to survey the MA Knowledge Panel again prior to casino openings or selection, and that, if we were able to obtain future funding, we would follow up with the same Panel at later time points. We are happy to report that we were able to complete our survey during December 2012, well prior to casino selection and licensing. Now we are actively applying for funding to conduct a longitudinal study of this same Panel.

METHODS

Measures

The survey, attached as Appendix A, covers 12 domains:

- Leisure activities – for the purpose of comparing how other leisure activities correlate with gambling activity, and how these activities change in relation to each other across time during gambling expansion;

- Gambling media exposure (i.e., advertisements and news stories) – for the purpose of examining how much exposure already has occurred and how that changes during gambling expansion;

- Gambling-related beliefs and attitudes – for the purpose of assessing public opinion prior to gambling expansion, as well as gambling fallacies and how those might relate to the development of gambling problems during gambling expansion;

- Past 12 month game-specific gambling behaviors (frequency, time per day, total wagered, net loss on each game type) – for the purpose of assessing comprehensively both monetary and temporal involvement in different games before and during gambling expansion;

- Past 12 month gambling locations – for the purpose of establishing where MA residents are gambling prior to gambling expansion and how that changes during gambling expansion, as well as determining how often visits to specific gambling locations involve gambling vs. other leisure activities;

- Gambling problems – assessed via the AUDADIS and an additional chasing question, for the purpose of investigating gambling problems both prior to and during gambling expansion, as well as testing for differences between the AUDADIS operationalization of chasing and the DSM criterion;

- Responsible gambling behaviors – for the purpose of determining strategies that respondents use to control their gambling behaviors and how effective those strategies appear to be;

- Treatment-seeking – for the purpose of establishing whether respondents are seeking help for gambling problems, and if so, how often they have used these resources in the past 12 months;

- Awareness of gambling treatment and gambling problems in the community – for the purpose of determining levels of awareness of gambling-related resources and how that changes in response to gambling expansion and awareness-raising efforts;

- Alcohol / substance using behavior – for the purpose of measuring comorbid behaviors and problems;

- Anxiety / depression/mental & physical health – for the purpose of measuring comorbid mental health issues;

- Income / employment and monetary behaviors – for the purpose of testing whether respondents' gambling behaviors reflect their other monetary behavior.

Survey Implementation and Panel Composition

The Cambridge Health Alliance Institutional Review Board approved the survey and study design prior to survey implementation. At the end of November and beginning of December 2012, we worked with GfK to program our survey, with skip logic, into their online system. The survey included an informed consent screen prior to the survey questions. During late November, GfK pre-tested the survey with 50 MA Knowledge Panel members.

Knowledge Panels, which have been used for national epidemiological studies, as well as longitudinal investigations (e.g., Baker, Wagner, Singer, & Bundorf, 2003; Holman et al., 2008; Rothman, Edwards, Heeren, & Hingson, 2008), are recruited using comprehensive sampling frames (Random Digit Dial [RDD] prior to 2009 and Address-Based Sampling [ABS] after 2009) in an attempt to create a nationally representative sample. The current ABS sampling frame allows for recruitment of households without landlines, and GfK provides households that do not have Internet or computer access with Netbooks and Internet connections. This sampling strategy reduces potential sampling bias. Because of the continuous nature of Knowledge Panel recruitment, exact recruitment rates are unavailable. However, recruitment rates (i.e., the percentage of individuals randomly selected to participate who actually join a panel) tend to fall between 4% and 14%. For our particular sample, the household recruitment rate was 16.3%. More information about the composition and recruitment of Knowledge Panels is available at: www.knowledgenetworks.com/insights/docs/Knowledge-Networks-Response-to-ESOMAR-26-Questions.pdf. We provide information about how the demographics of the MA sample compare to those provided by the Census for MA in the Research Findings section, below, and discuss the limitations of the sample in the Significance of Findings section that follows.

On December 5th, GfK released the survey to the 725 members of the MA Knowledge Panel who had not been part of the pre-test. Panelists received an email inviting them to participate and offering them an $8 cash-equivalent incentive to complete the survey. Those who did not respond initially received a reminder email encouraging them to participate. The survey closed on December 26th after being active for three weeks. More than 70% of the Knowledge Panel completed the survey (n=511). During the survey period, no casinos or slot parlors were operational in MA. As of this report (May, 2013), the MA Gaming Commission is actively reviewing applications, but licenses for the potential three casinos and one slot parlor have not yet been awarded.

GfK provided us with the de-identified data from our survey, as well as other relevant data collected from these MA Knowledge Panel members (e.g., zip code and demographics). We have confirmed with GfK that they will maintain participant identification information, so we can follow them as part of a larger prospective longitudinal study.

RESEARCH FINDINGS

Participants

As mentioned above, 511 of the 725 invited MA Knowledge Panel members completed the survey, for a *Panel* response rate of 70.5% (see earlier subsection on Survey Implementation and the subsection on Limitations, below, for further discussion about sample composition).

As Figure 1 shows, KP members are distributed throughout MA, with concentrations reflecting population levels. For purposes of casino assignment, the MA expanded gaming legislation divides the state into three regions: Western, Southeastern, and greater Boston. Figure 1 denotes these regions by the bold black lines. In the sample of 511 respondents, 71.2% resided in the greater Boston region, 16.8% resided in Southeastern MA, and 11.9% resided in Western MA. This is comparable to the MA population distribution: 68.1% reside in the greater Boston region, 19.5% reside in Southeastern MA, and 12.4% reside in Western MA.

Figure 1. Distribution of Knowledge Panel throughout Massachusetts
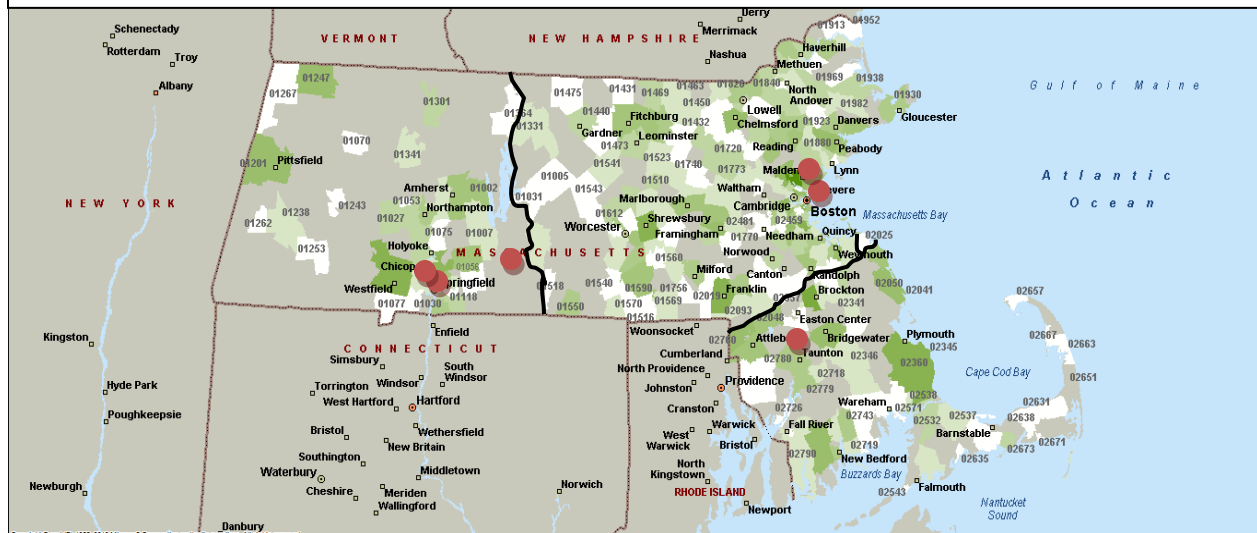
Note. Darker green = more panelists; white = fewer panelists; gray = no panelists; Thick black lines separate casino regions; Red dots indicate currently known potential resort casino locations.

The sample was 64.2% female, 86.9% non-Hispanic White, with an average age of 50.8. More than half of the sample was married, 52.0% had a four-year college degree or higher, 39.7% had full-time employment, and 28.6% had a household income of less than $40,000. Table 1 displays these and other demographics by region and provides a comparison to MA Census estimates from 2010. Compared to Census numbers, the members of the overall sample were slightly older than the MA general population, slightly more likely to be female, and slightly less likely to be Black or Hispanic. The education level of the sample was slightly higher than the general population, but their average household income was slightly lower. Household size and marital status did not differ in any meaningful way.

Table 1. Demographics by Region

	greater Boston (N=364)	Southeastern MA (N=86)	Western MA (N=61)	Overall Sample (N=511)	MA Census 2010 (N=5,128,706)[¥]
Gender - % Female	64.0%	57.0%	75.4%	64.2%	51.6%
Race/Ethnicity					
White, non-Hispanic	85.7%	98.8%	77.0%	86.9%	76.4%
Black, non-Hispanic	4.7%	0.0%	8.2%	4.3%	7.8%
Other, non-Hispanic	2.5%	0.0%	3.3%	2.2%	3.9%
2+ races, non-Hispanic	2.5%	1.2%	3.3%	2.3%	2.0%
Hispanic	4.7%	0.0%	8.2%	4.3%	9.9%
Age					
18-24	7.7%	7.0%	4.9%	7.2%	13.2%
25-44	27.2%	24.4%	23.0%	26.2%	33.8%
45-64	40.7%	50.0%	47.5%	43.1%	35.4%
65+	24.4%	18.6%	24.6%	23.5%	17.6%
Marital Status					(age 15+)
Married	50.5%	54.7%	57.4%	52.1%	47.9%
Widowed	6.3%	3.5%	4.9%	5.7%	6.1%
Divorced	9.9%	12.8%	14.8%	11.0%	9.2%
Separated	1.1%	0.0%	1.6%	1.0%	1.2%
Never married	25.3%	9.3%	14.8%	21.3%	34.9%[a]
Living w/ partner	6.9%	19.8%	6.6%	9.0%	--
Education					(age 25+)
Did not complete HS / no GED	3.0%	2.3%	0.0%	2.5%	11.1%
High school graduate/GED	11.5%	19.8%	23.0%	14.3%	26.3%
Some college	21.2%	25.6%	19.7%	21.7%	16.2%
Associate's degree	9.6%	4.7%	14.8%	9.4%	7.6%
Bachelor's degree	28.0%	27.9%	19.7%	27.0%	22.1%
Masters or higher	26.8%	19.8%	23.0%	25.0%	16.6%
Employment					
Full-time	35.2%	39.5%	42.6%	36.8%	62.3%[b]
Part-time	7.4%	8.1%	9.8%	7.8%	--
Temporary	0.5%	0.0%	1.6%	0.6%	--
Self-employed	8.2%	10.5%	4.9%	8.2%	6.4%
Unemployed – looking	6.0%	9.3%	3.3%	6.3%	5.5%
Retired	22.5%	17.4%	19.7%	21.3%	--
Homemaker	6.6%	7.0%	3.3%	6.3%	--
Student	5.8%	3.5%	4.9%	5.3%	--
Disabled	6.9%	3.5%	6.6%	6.3%	--
Other	0.9%	1.2%	3.3%	1.2%	--
Household Income					
<$10000	6.0%	4.7%	3.3%	5.5%	3.6%
$10000-$24999	9.1%	8.1%	14.8%	9.6%	8.3%
$25000-$49999	22.8%	17.4%	31.1%	22.9%	16.5%
$50000-$74999	16.5%	20.9%	23.0%	18.0%	16.3%
$75000-$99999	15.9%	16.3%	11.5%	15.5%	15.1%
$100000-$149999	18.7%	24.6%	13.1%	18.9%	20.6%
$150000+	11.0%	8.1%	3.3%	9.6%	19.6%
Household Size – M (SD)	2.4 (1.4)	2.6 (1.3)	2.6 (1.2)	2.5 (1.4)	2.49 (+/- .01)
Housing Status – Own home	66.8%	77.9%	70.5%	69.1%	--
Internet – Household access	94.2%	95.3%	93.4%	94.3%	--

[¥]Census numbers are based on total population – 78.3% of the population was age 18 or older.
[a]Census number for "never married" includes "living with a partner"
[b]Census number for "employed full time" encompasses full-time, part-time, temporary, and self-employment.

Leisure Activities

Survey respondents indicated the frequency with which they engaged in a variety of leisure activities. The purpose of these questions is to compare engagement in these activities to engagement in gambling activities, and measure how they change relative to each other across time as gambling expansion occurs. As Figure 2 illustrates, at baseline, watching TV, spending time on the computer, reading, exercising, going out to eat, playing computer games, and going to friends' houses were respondents' most frequent leisure activities. On average, respondents indicated gambling only a few times or less in the past 12 months, similar to their frequency of attending concerts, plays, and sporting events.

Figure 2. Frequency of Past 12-Month Leisure Activities by Region
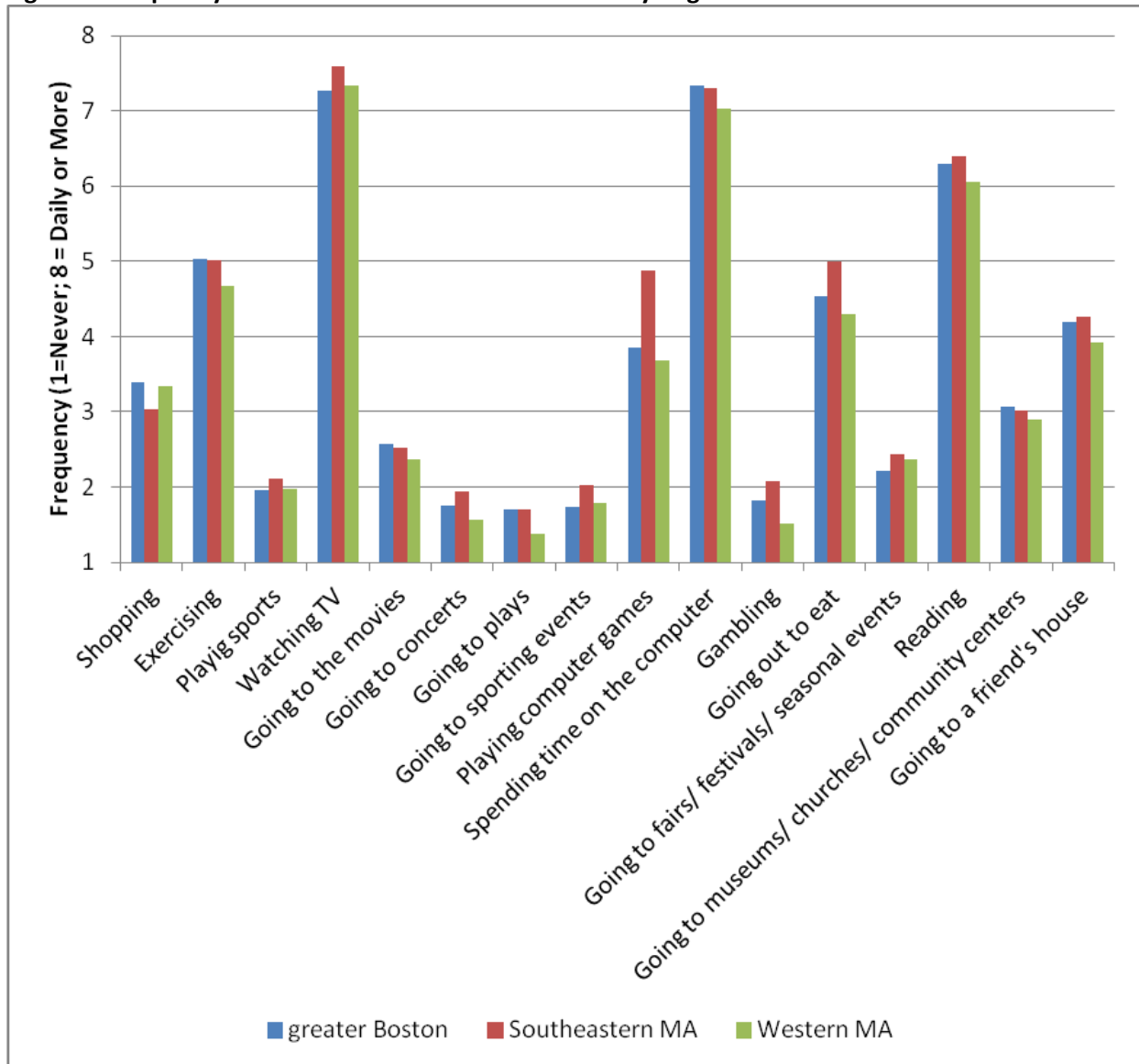
Gambling Media Exposure

To measure gambling media exposure, the survey included eight questions assessing past 12-month frequency of encountering advertisements and news stories about casinos, lottery, online gambling, and slots parlors.

Figure 3. Frequency of Exposure to News Stories about Gambling during the Past 12 Months
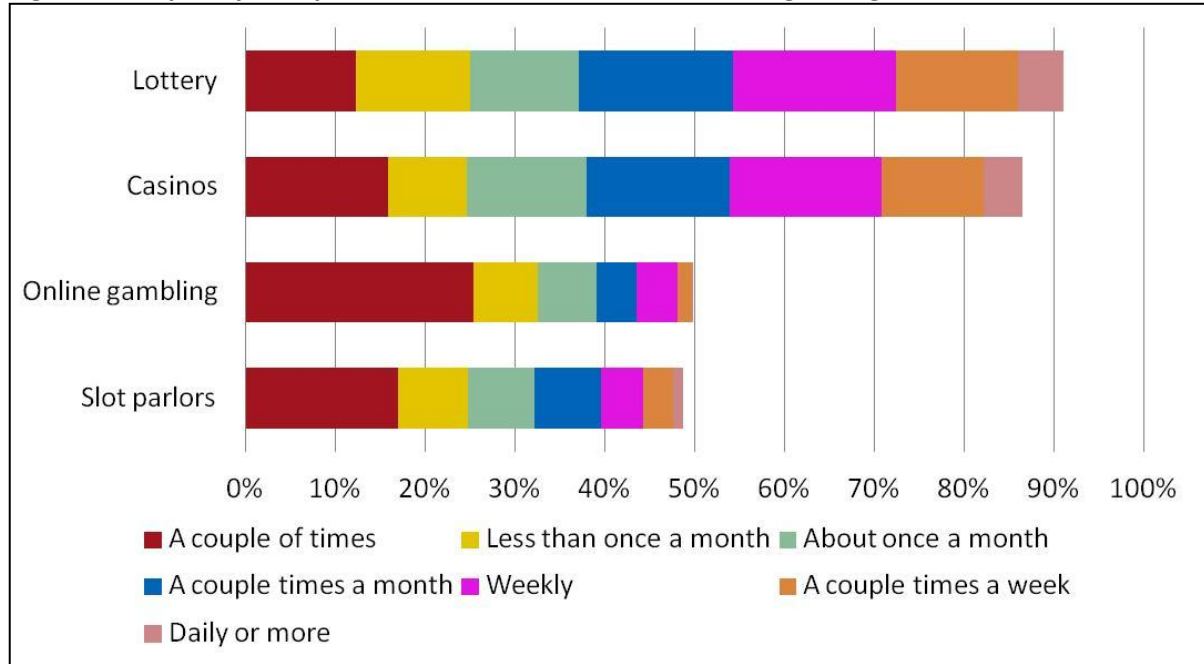
Figure 4. Frequency of Exposure to Gambling Advertisements in the Past 12 Months
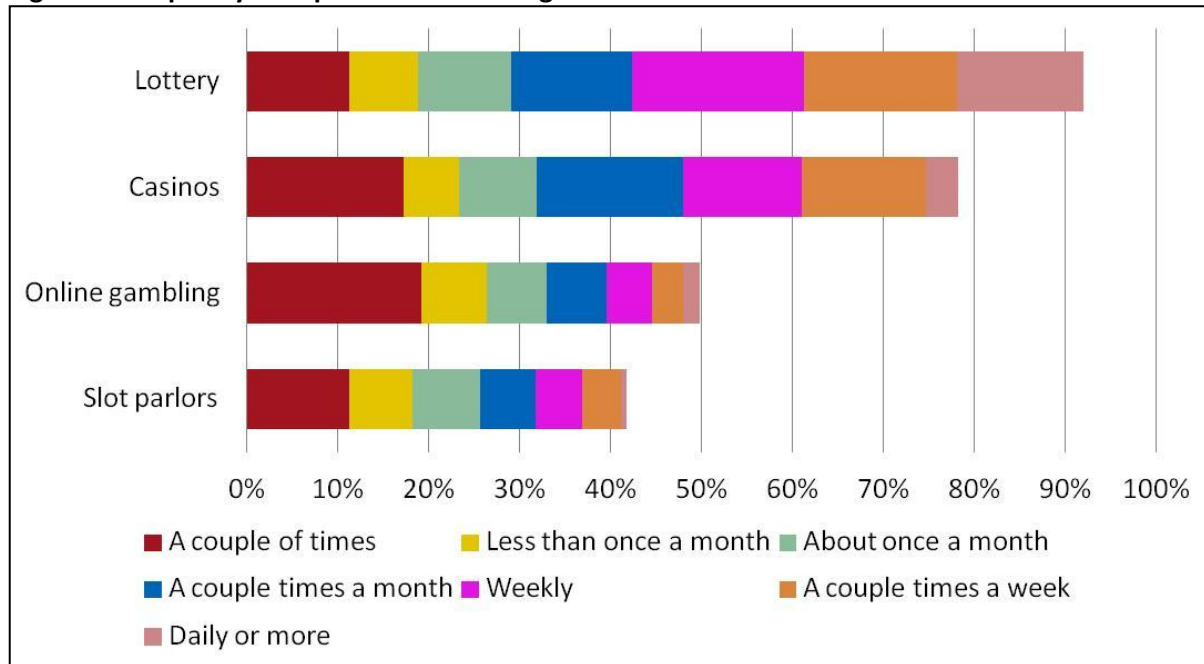
As Figures 3 and 4 show, respondents were most exposed to advertisements and news stories about the lottery and casino gambling, and both were viewed frequently. Figure 5 illustrates that exposure varied significantly across region. Western MA was more frequently exposed to casino news stories than either of the other regions ($\chi^2(14) = 36.2$, $p < .01$), and more exposed to ads for casinos than the greater Boston region ($\chi^2(14) = 29.9$, $p < .01$). Ads for the lottery were reported more frequently in Southeastern MA than in the greater Boston region ($\chi^2(14) = 25.3$, $p < .05$).

Figure 5. Weekly or More Frequent Exposure to Gambling Advertisements and News Stories in the Past 12 Months by Region
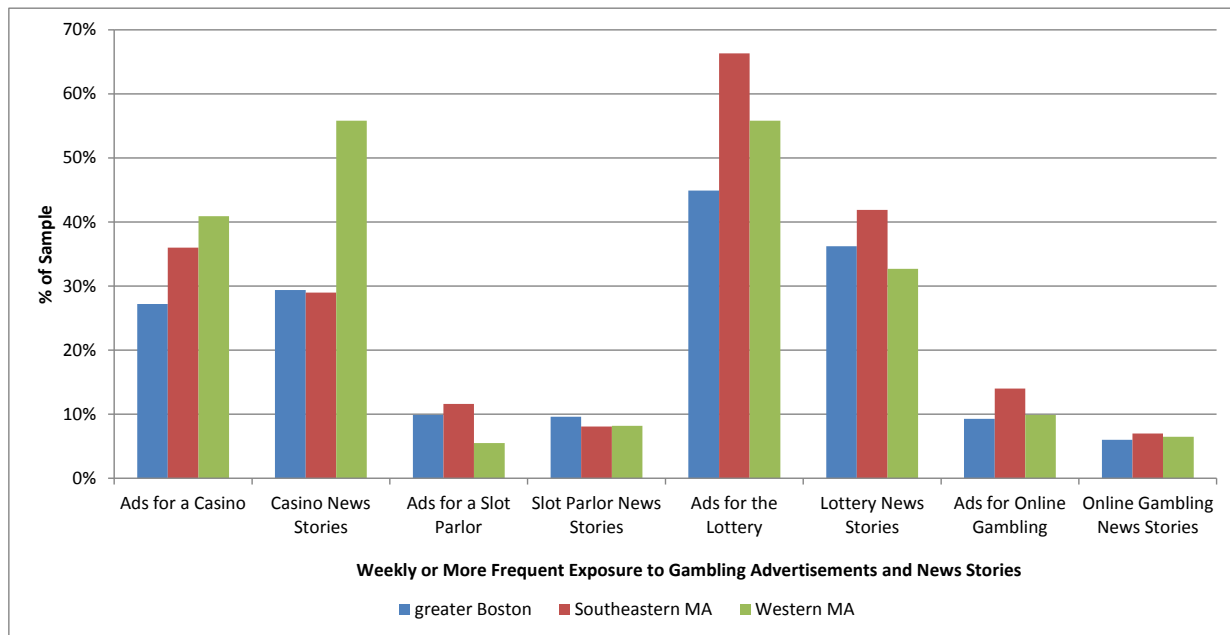
Gambling-Related Beliefs and Attitudes

To measure gambling attitudes, the survey included 15 statements adapted from previous work with casino employees (LaPlante, Gray, LaBrie, Kleschinsky, & Shaffer, 2012) and expanded this work to include questions about attitudes toward gambling expansion. Participants rated each statement on a 5-point Likert scale from "disagree strongly" to "agree strongly".

Figure 6 displays the average score for each item, by region. Overall, respondents tended to disagree with most of the erroneous statements about luck, probability, and gambling. They also tended to agree that gambling could be dangerous and could lead to crime. Opinions about the introduction of gambling venues into communities averaged around the center of the scale, neither agreeing nor disagreeing. There were a few regional differences: respondents living in the Southeastern region were more likely to agree with the statement that gambling is a fun activity, and were more receptive to the idea of introducing a slots parlor or casino into their community, $F(2,504)=4.0$, $p<.05$, $F(2,505)=4.5$, $p<.01$, and $F(2,506) = 4.5$, $p<.05$, respectively.

Figure 6. Gambling Attitudes and Beliefs by Region
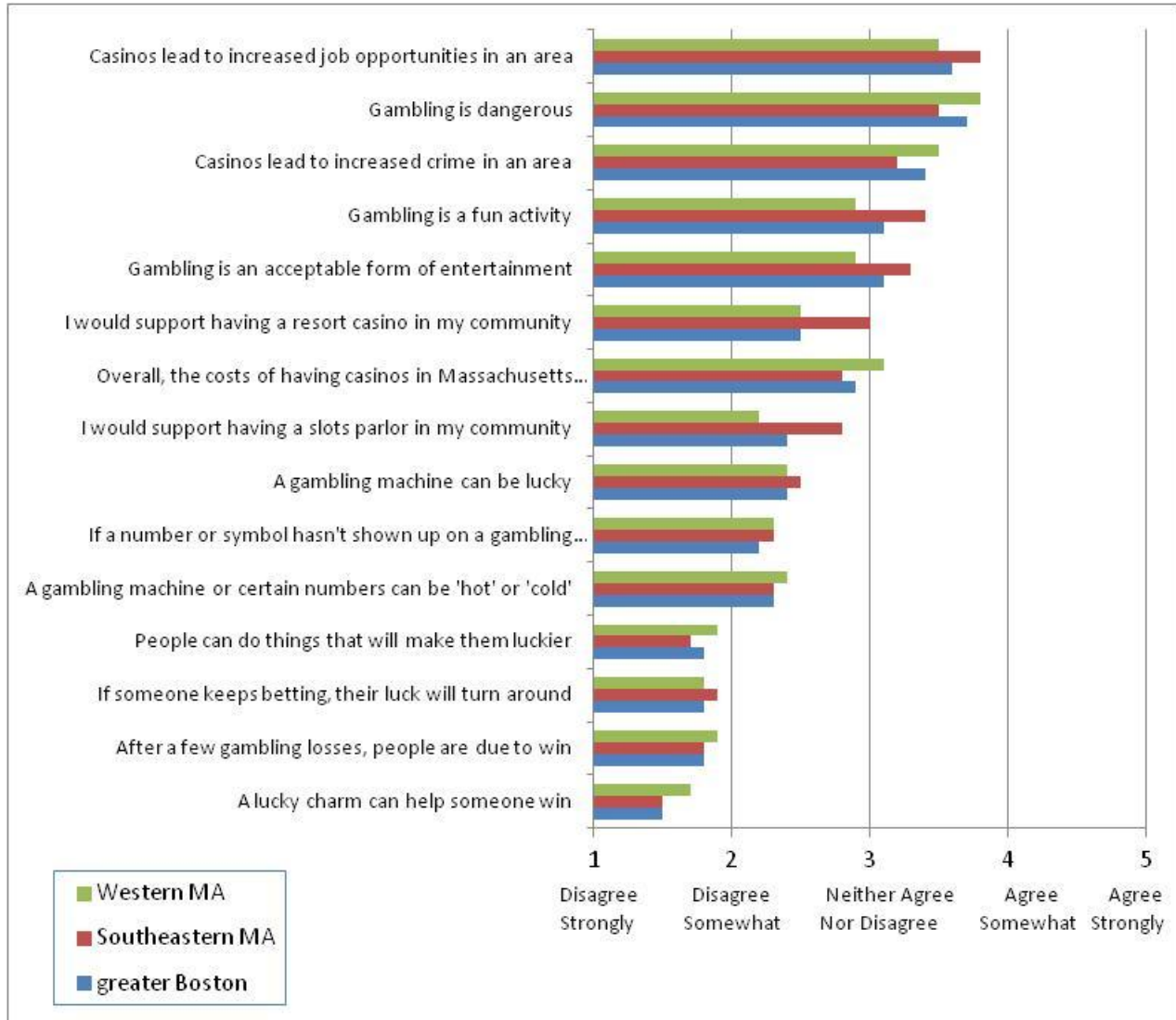
Gambling Behavior

To assess gambling behavior, the survey first asked respondents to indicate about how often they had gambled in their lifetime using a 7-point scale ranging from never to 1,000+ times, how old they were when they first began gambling, and whether they had gambled during the past 12 months. For those who had gambled during the past 12 months, we included questions about 19 game types (e.g., casino table games, casino slots, non-casino poker, lottery) assessing past 12-month frequency of gambling (from never to daily), past 12-month time spent gambling on a typical gambling day for that game (from less than one hour to 7+ hours), past 12-month amount wagered (regardless of win or loss), and past 12-month amount lost.

Overall, 92.4% of the sample had gambled during their lifetime. As Figure 7 shows, just over 20% had only gambled a handful of times, and fewer than 20% had gambled 500 or more times. These rates did not differ significantly by region.

Figure 7. Lifetime Gambling by Region
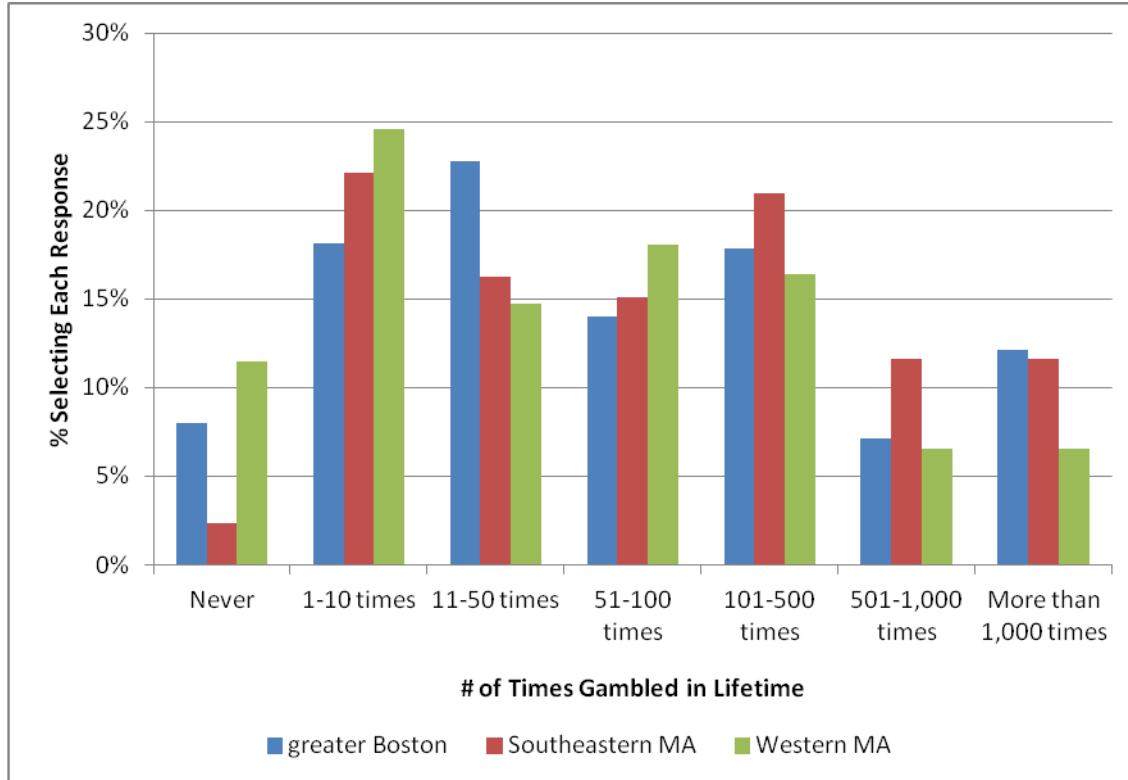
Among those who had gambled in their lifetime, the average age at which they reported placing their first bet was 22 (SD = 9.2, range = 5-63). Twenty-five percent reported placing their first bet before the age of 18, and 54% had placed their first bet before the age of 21. Age of first bet did not differ by region.

More than half of the sample reported gambling during the past 12 months. This did not differ significantly by region: 58.2% of those residing in greater Boston, 64.3% of those in Southeastern MA, and 47.2% of those in Western MA gambled during the past 12 months.

Figure 8 displays the percent of the total sample (N=511) and the percent of past-year gamblers (N = 274) who played each of the 19 game types in the past 12 months. Lottery was the most popular game, engaged in by 90.1% of those who had gambled in the past year, followed by slot machines at a casino, betting on sports with friends, table games at a casino, and gambling at a non-profit gathering or event.

Figure 8. Past 12 Month Gambling by Game Type, within Full Sample (N=511) and Subsample of Past 12 Month Gamblers (N=274)
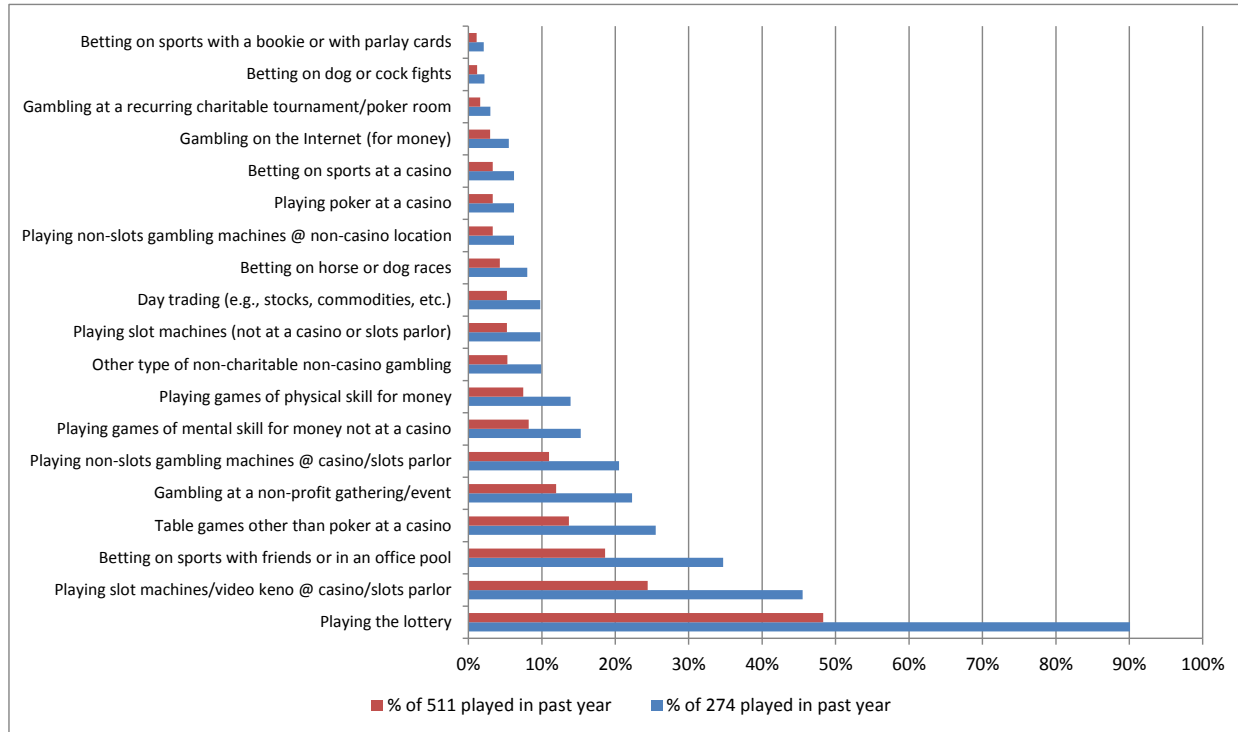
Table 2 summarizes the number of respondents who played each game during the past year, as well as, for each game, the percentage of players gambling weekly or more, the average time spent per gambling day, the average money wagered in the past 12 months, and the average money won/lost in the past 12 months.

Table 2 shows that the lottery, in addition to being the most commonly played game, also had the greatest percentage of players who played weekly or more. Playing slots, other electronic games, or table games at casinos, on the other hand, though relatively prevalent among the sample, were rarely played weekly or more. Only 1%, 2%, and 4%, respectively, of those who played these games engaged in weekly or more frequent play. Gambling on the Internet, day trading, and betting on sports with a bookie or parlay cards also had high proportions of players who gambled weekly or more (17-27%), despite only being played by 3%, 5%, and 1%, of the sample, respectively.

Average time spent gambling on each game on the days that respondents played that game did not vary greatly: On average, players spent from about an hour gambling per gambling day. For most games, the average amount wagered in the past year by those who played fell between $1 and $100; however, for day trading the $1000 average fell well outside that range. The reported average amount won or lost in a year ranged from losses of $51-$100 for players playing at recurring charity events to reported wins for those gambling on dog or cock fights. Most who gambled reported yearly losses of less than $50.

Table 2. Weekly Play, Time Spent, Amount Wagered, and Amount Won/Lost by Game Type among Respondents Who Play

	N Playing Game in Past 12 Months	% of Those Who Play Weekly or More	Among Those Who Play, Average Time Spent per Gambling Day[a]	Among Those Who Play, Average Amount Wagered in Past 12 Months[b]	Among Those Who Play, Average Net Amount Won/Lost in Past 12 Months[c]
Playing the lottery	247	27.9%	2.1 (0.5)	2.6 (1.0)	7.9 (1.4)
Playing slot machines/video keno @ casino/slots parlor	125	0.8%	3.3 (1.0)	3.1 (1.2)	7.7 (1.6)
Betting on sports with friends or in an office pool	95	13.7%	2.2 (0.6)	2.2 (0.5)	8.2 (1.1)
Gambling at a non-profit gathering/event	71	2.8%	2.6 (0.9)	2.2 (0.5)	8.2 (1.4)
Table games other than poker at a casino	70	4.3%	2.6 (0.8)	2.9 (1.3)	8.2 (1.6)
Playing non-slots gambling machines @ casino/slots parlor	56	1.8%	2.5 (0.7)	2.6 (1.0)	8.2 (1.0)
Playing games of mental skill for money not at a casino	42	9.5%	3.3 (1.0)	2.6 (1.1)	8.9 (1.2)
Playing games of physical skill for money	38	13.2%	2.9 (1.0)	2.3 (1.0)	9.1 (0.9)
Other type of non-charitable non-casino gambling	27	7.4%	2.4 (0.8)	2.1 (0.3)	8.2 (2.0)
Playing slot machines (not at a casino or slots parlor)	27	14.8%	2.8 (1.0)	2.4 (1.4)	8.4 (1.8)
Day trading (e.g., stocks, commodities, etc.)	27	25.9%	2.5 (1.0)	5.8 (2.3)	8.5 (2.5)
Betting on horse or dog races	22	4.5%	2.6 (1.2)	2.2 (0.4)	8.1 (1.8)
Playing non-slots gambling machines @ non-casino location	17	5.9%	2.5 (0.5)	2.7 (1.1)	8.4 (1.6)
Playing poker at a casino	17	5.9%	2.9 (1.0)	3.2 (1.2)	8.2 (1.5)
Betting on sports at a casino	17	11.8%	2.8 (1.3)	2.3 (0.8)	8.6 (1.1)
Gambling on the Internet (for money)	15	26.7%	3.1 (1.1)	3.3 (2.3)	7.8 (2.2)
Gambling at a recurring charitable tournament/poker room	8	0.0%	2.6 (0.9)	2.3 (0.5)	7.0 (3.1)
Betting on dog or cock fights	6	0.0%	2.5 (0.7)	2.0 (0.0)	10.0 (0.0)
Betting on sports with a bookie or with parlay cards	6	16.7%	3.3 (2.3)	2.7 (1.2)	8.0 (1.7)

[a] For time spent gambling per gambling day, 2=<1 hour, 3=1-2 hours, 4=3-4 hours, 5=5-6 hours, 7=7+ hours
[b] For amount wagered in past 12 months, 2=$1-$50, 3=$51-$100, 4=$101-$500, 5=$501-$1000, 6=$1001-$5000, 7=$5001-$10000, 8=$10001-$20000, 9=$20000+
[c] For net amount won/lost in past 12 months, 1=lost $20001+, 2=lost $10001-$20000, 3=lost $5001-$1000, 4=lost $1001-$5000, 5=lost $501-$1000, 6=lost $101-$500, 7=lost $51-$100, 8=lost $1-$50, 9=broke even, 10=won $1 or more

Respondents reported having played a number of different types of games during the past year; these play patterns ranged from 0 to 18 games. Respondents who had gambled on at least one game type during the past 12 months played an average of 3.4 different games (SD=2.7; Median=3.0). Of those who played in the past 12 months, 26% played only one type of game (for more than 88% that type was lottery), 21% played two types, 16% played three types, and 38% played more than three types. The most common game type combinations, as Figure 9 displays, were combinations of lottery with casino slot machines (and other casino electronic games), sports betting with friends and gambling at non-profit events.

Figure 9. Combinations of Game Types Played in the Past 12 Months (N=511)
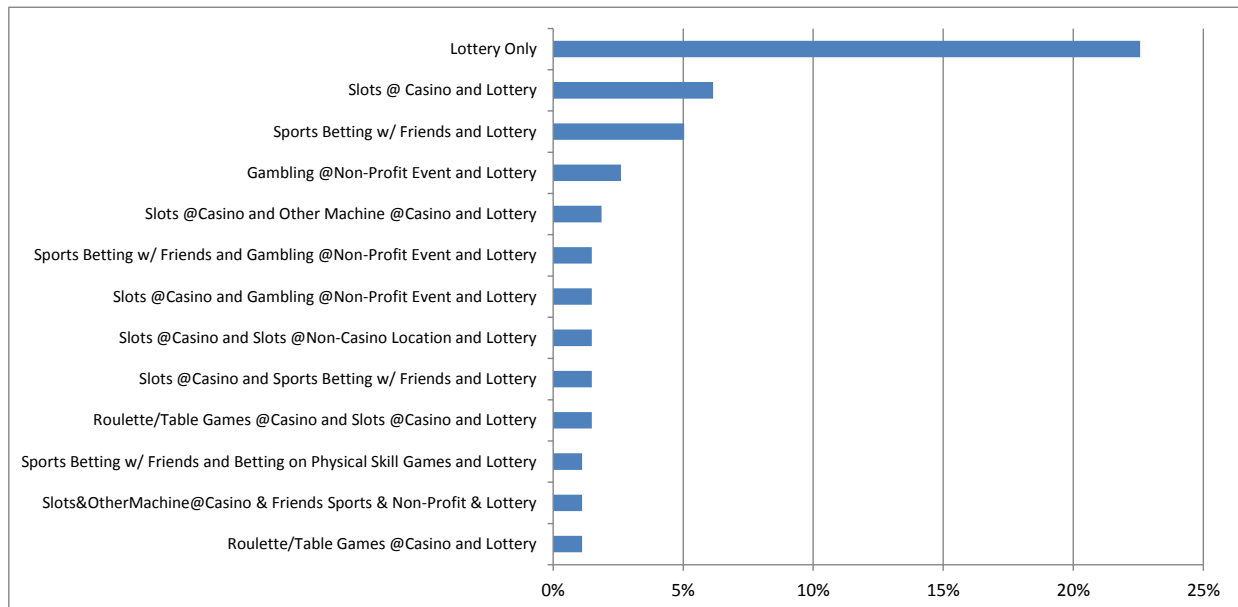
Gambling Locations

Survey respondents indicated how frequently they had been to neighboring and non-neighboring gambling venues during the past 12 months. They also reported how often they had gambled at those locations during the past 12 months. Figure 10 shows the percent of respondents who visited each gambling venue in the past 12 months, and the percent who gambled at that venue in the past 12 months. As the Figure reveals, respondents were most likely to have visited Foxwoods, Mohegan Sun, Twin Rivers, and non-neighboring gambling venues. For Foxwoods, approximately 5% of those who visited did not gamble; for Mohegan Sun, approximately 3% of those who visited did not gamble.

Figure 11 displays the frequency of visiting different venues by region. Overall, residents of all regions visited most of the available gambling venues infrequently. The only significant differences between regions were for frequency of visiting Twin Rivers, Newport, and International casinos ($F_{(2,505)}=5.5$, $p<.01$; $F_{(2,503)}=3.2$, $p<.05$; $F_{(2,504)}=3.3$, $p<.05$, respectively). Respondents from the Southeastern region of the state visited all three of these gambling venues more frequently than other respondents.

Figure 10. Past 12-Month Visits and Gambling at Gambling Venues

Legend: ■ % gambling in past 12 months   ■ % visiting in past 12 months

Venues (top to bottom):
- Foxwoods (CT)
- Mohegan (CT)
- Twin River (RI)
- Non-neighboring state
- International
- Other neighboring state casino, slot parlor, poker room
- Newport Grand Slots (RI)
- Saratoga Casino (NY)
- Hampton Falls Poker Room (NH)
- Oxford Casino (ME)
- Rockingham Poker Room (NH)
- Seabrook Poker Room (NH)
- Empire City Casino (NY)
- Monticello Casino (NY)
- Hollywood Casino (ME)

Figure 11. Past 12 Month Gambling Venue Visits by Region

Legend: ■ Western MA   ■ Southeastern MA   ■ greater Boston

X-axis from 1 (Not at all) to 2 (Once or Twice)

Venues (top to bottom):
- Foxwoods
- Mohegan
- Twin River
- Non-neighboring state
- International
- Other neighboring state casino, slot parlor, poker room
- Newport Grand Slots
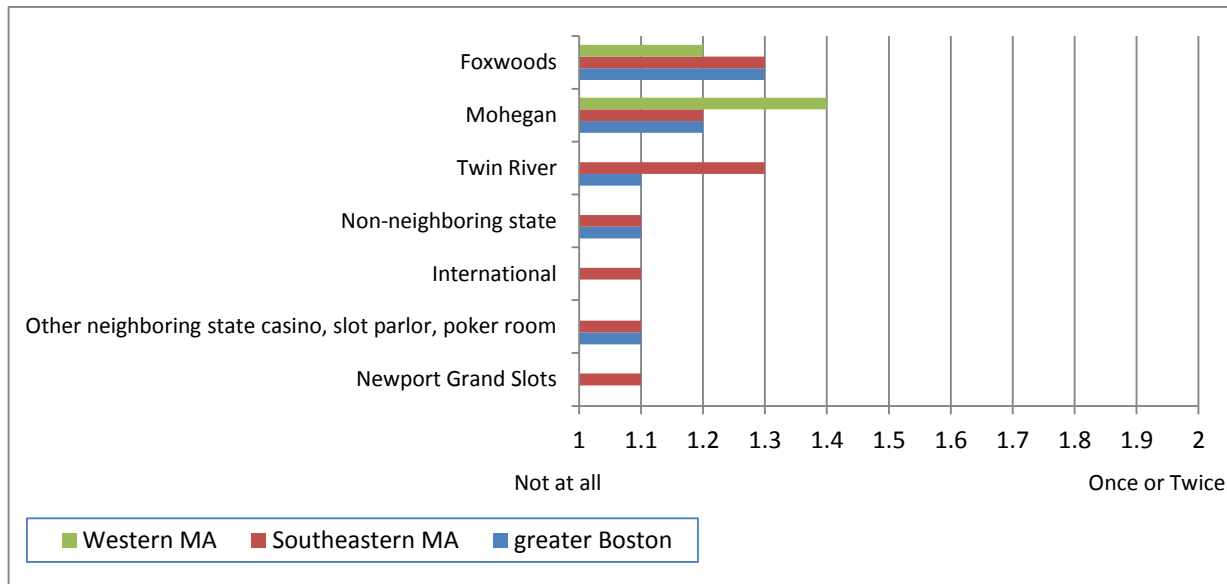
Gambling Problems

To assess gambling-related problems, this survey incorporated a past 12-month adaptation of the gambling section of the Alcohol Use Disorder and Associated Disabilities Interview Schedule IV (AUDADIS-IV: Grant et al., 2003). The AUDADIS-IV Gambling Section assesses signs and symptoms of disordered gambling. Each of the 16 items pertains to one of the 10 Diagnostic and Statistical Manual of Mental Disorders (DSM-IV: American Psychiatric Association, 2000) criteria for pathological gambling. Examples include, "Ever find that you became restless, irritable, or anxious when trying to quit or cut down on your gambling" and "Ever more than once try to quit or cut down on your gambling, but found you could not do it". When scoring the AUDADIS-IV, endorsement of any item pertaining to a DSM criterion results in a score of 1 (i.e., yes) for that criterion; endorsing more than one item pertaining to a single criterion does not increase a respondent's score. In addition to reframing the AUDADIS-IV questions to ask only about the past 12 months, we altered one question, originally "Did you ever spend a lot of time gambling, planning your bets, or studying the odds?" to read "Did you ever spend a lot of time thinking about gambling, planning your bets, or studying the odds?" This question, a measure of preoccupation, would have been confounded with gambling frequency had we not altered it.

Only respondents who had gambled during the past 12 months answered these questions about gambling problems. Among these 274, 36 (13% of the 274, 7% of the entire sample) qualified for meeting one or more DSM-IV criteria related to disordered gambling. To qualify for disordered gambling, individuals must endorse five or more DSM-IV criteria; individuals endorsing more than zero, but fewer than five criteria might have a subclinical gambling problem or be recovering from more serious gambling problems. In our sample, only one person (0.4% of the 274; 0.2% of the entire sample) met more than 4 DSM-IV criteria. Six individuals (2.2% of the 274; 1.2% of the entire sample) met 3-4 DSM-IV criteria, and 29 (10.6% of the 274; 5.7% of the entire sample) met 1-2 criteria. Figure 12 displays these results by region. Gambling problems did not vary significantly by region.

Figure 12. # of DSM-IV Criteria for Disordered Gambling Past 12 Month by Region
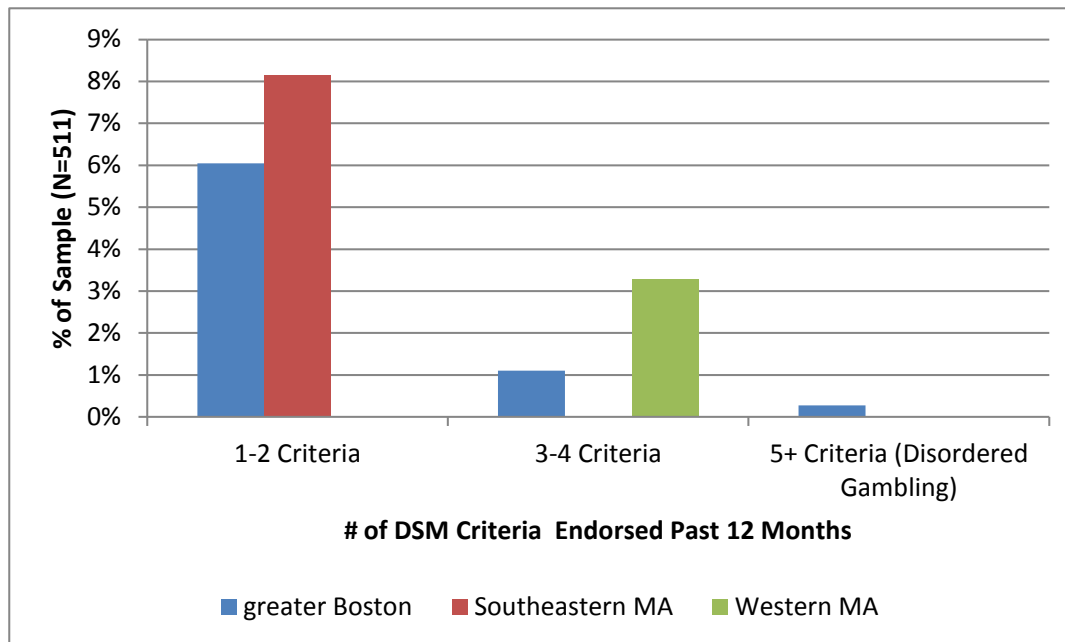
Figure 13 displays criterion-level results. This sample most commonly met the disordered criteria for preoccupation and gambling to escape. Because the number of respondents in our sample meeting any criteria was low, none of the observed differences between regions were statistically significant. Among the 36 respondents who reported experiencing any problems, the average age that they reported problems beginning (i.e., age of onset) was 31.7 years old. For 13% of these respondents, problems began before the age of 18; for 41%, problems began before the age of 21. Among these respondents, 16.7% reported having close relatives who had experienced gambling problems. Age of problem onset and family history did not differ by region.

Figure 13. Past 12 Month DSM-IV Criteria for Disordered Gambling by Region
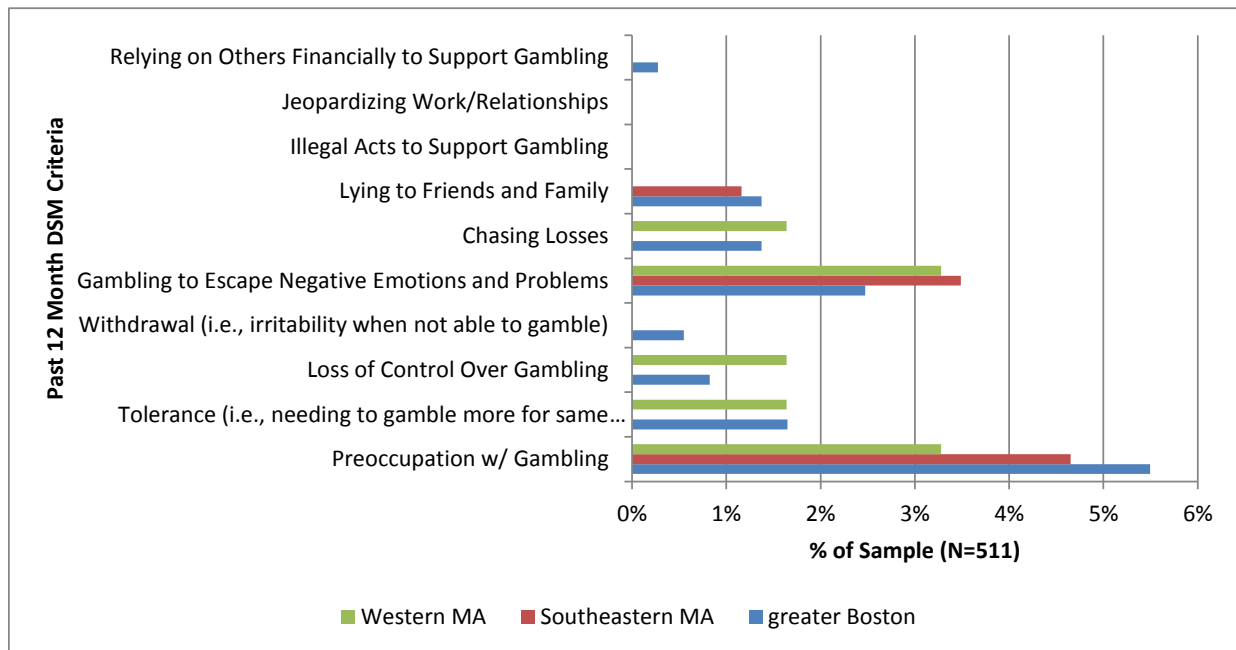
Responsible Gambling Strategies

To measure responsible gambling strategies, the survey included four items about limit-setting, and one about how often respondents needed to withdraw additional money in the middle of a gambling outing. As Table 3 shows, a large majority of the respondents who gambled during the past year reported setting loss limits for themselves when they gambled. Overall, most of these respondents adhered to these limits most of the time. Far fewer set win limits for themselves (i.e., ~25%), and those who did adhered to them less often. Finally, 7.0% (6.8% in greater Boston, 1.9% in Southeastern MA, and 15.4% in Western MA) of those who had gambled in the past year reported having had to withdraw more money in the middle of at least one of their gambling sessions. There were no statistically significant differences between regions on these variables.

Table 3. Past 12 Month Responsible Gambling Strategies by Region (N=274)

	greater Boston	Southeastern MA	Western MA	Overall Sample
% Usually Setting a Loss Limit	84.1%	83.3%	76.0%	83.2%
Frequency of Continued Gambling after Reaching Loss Limit (among those setting a limit)	(N=164)	(N=45)	(N=19)	(N=228)
All of the Time	2.4%	2.2%	0.0%	2.2%
Most of the Time	3.7%	0.0%	0.0%	2.6%
Some of the Time	15.2%	15.6%	10.5%	14.9%
Never	62.8%	75.6%	78.9%	66.7%
Never Reached Limit	15.9%	6.7%	10.5%	13.6%
% Usually Setting a Win Limit	21.0%	31.5%	36.0%	24.5%
Frequency of Continued Gambling after Reaching Win Limit (among those setting a limit)	(N=41)	(N=17)	(N=9)	(N=67)
All of the Time	2.4%	0.0%	0.0%	1.5%
Most of the Time	0.0%	5.9%	11.1%	3.0%
Some of the Time	34.1%	52.9%	11.1%	35.8%
Never	39.0%	35.3%	55.6%	40.3%
Never Reached Limit	22.0%	5.9%	22.2%	17.9%

Treatment-Seeking

Respondents who reported experiencing any of the gambling problems listed in the survey were asked to report any treatment-seeking behavior. None of the 36 respondents who reported having gambling problems reported having ever spoken to a medical doctor or other professional about their problems. One respondent from the greater Boston region had been to a self-help group (e.g., Gamblers' Anonymous) for his/her problems, but that respondent did not attend a self-help group during the past 12 months. None of the 36 respondents had ever called a gambling hotline.

Awareness of Gambling Problems and Treatment Resources

Respondents indicated whether they knew anyone with gambling problems. As Figure 14 shows, respondents were most likely to indicate that they knew a co-worker or other acquaintance who might be experiencing gambling problems. Respondents in Western MA were more likely to report knowing a co-worker with problems than respondents in other regions ($\chi^2(2) = 6.4$, $p < .05$). There were no other regional differences.

Respondents also indicated how familiar they were with various gambling problem resources. Overall, respondents were not familiar with resources in their communities. Only 31% had heard of the Massachusetts Council on Compulsive Gambling and only 37% had heard of their associated helpline. Less than 3% of respondents were somewhat familiar with these resources. One third of respondents had heard of gambling treatment programs in MA, and slightly more than half were aware of Gamblers' Anonymous meetings in MA. Again, less than 3% of respondents were somewhat or more familiar with the gambling treatment programs, and less than 6% were somewhat or more familiar with the Gamblers' Anonymous meetings. The entity of which respondents were most aware was the MA Gaming Commission. Slightly less than 70% of respondents had heard of the Commission, and less than 15% considered themselves somewhat or more familiar with it. Figure 15 presents these results by region.

In addition, respondents indicated whether gambling treatment resources or Gamblers' Anonymous meetings were available in their own communities. Ninety percent of the sample reported that they did not know whether gambling treatment resources were available in their community, and 93% reported that they did not know whether Gamblers' Anonymous meetings were available. These rates did not differ by region.

Figure 14. Acquaintances w/ Gambling Problems by Region
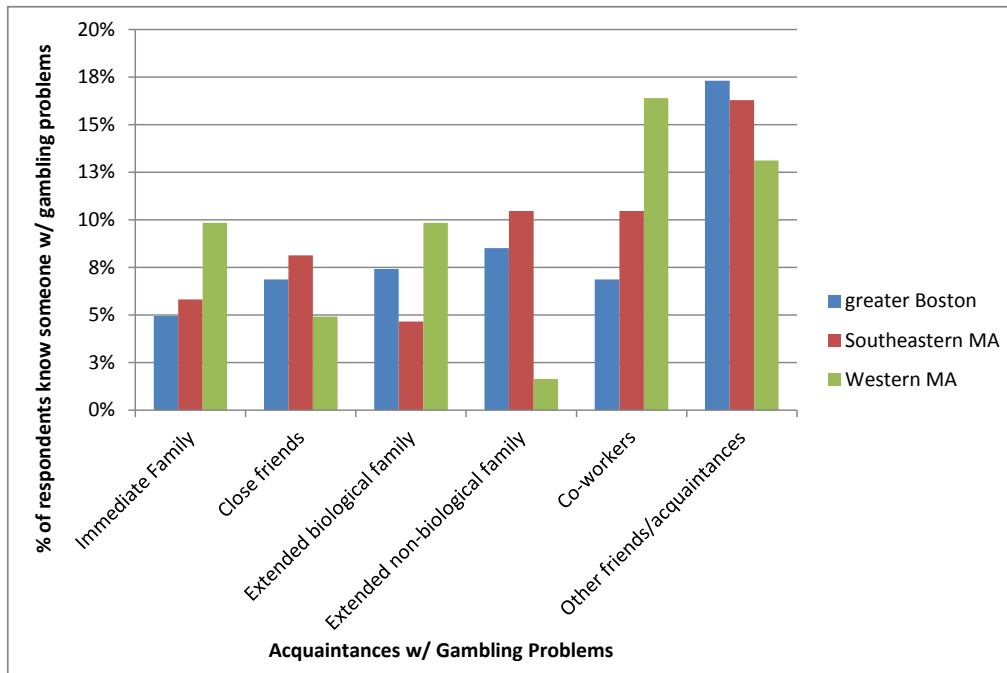
Figure 15. Awareness of Gambling Problem Resources
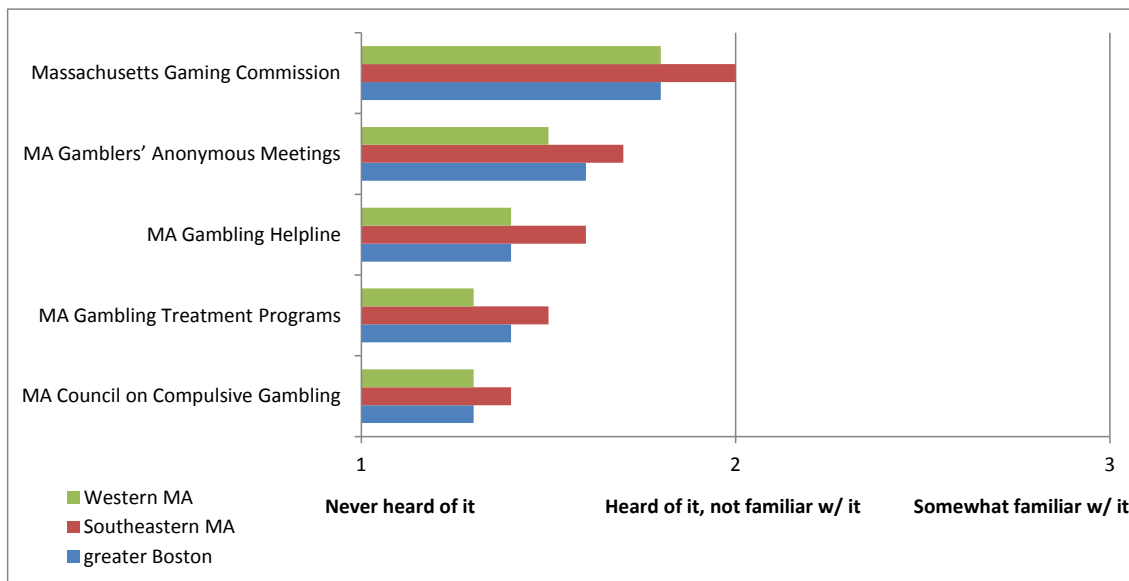
Alcohol and Substance Use

To screen for alcohol-related problems, we used the Alcohol Use Disorders Identification Test-C (AUDIT-C), a three-question screen derived from the first 3 items of the full AUDIT (Saunders, Aasland, Barbot, de la Fuente, & Grant, 1993). The AUDIT-C is scored using a 12 point scale; men with a score of 4 or higher and women with a score of 3 or higher, provided that score does not come solely from the first frequency item, are considered positive for an alcohol use disorder. A single item assessed whether participants had used illicit drugs during the past 12 months.

Seventy-nine percent of the sample reported drinking alcohol: 30% drank monthly or less; 21% drank about once a week; 19% drank 2-4 times a week; and 9% drank 5 or more times a week. Those who drank reported drinking an average of 1.8 drinks on drinking days – 19% of those who drank reported drinking 3 or more drinks on drinking days. Fewer than 30% of those who drank reported drinking 6 or more drinks on some occasions. Frequency of drinking did not vary by region, but consumption amounts did. As Table 4 shows, Western MA respondents were more likely to drink one drink per drinking day than the rest of the respondents, but also more likely than greater Boston residents to report drinking five or more drinks per drinking day ($\chi^2(8)=20.3$, p<.01) and more likely to include respondents who reported drinking six or more drinks on one occasion almost daily ($\chi^2(8)=18.0$, p<.05).

Table 4. Substance Use Behaviors by Region

	greater Boston	Southeastern MA	Western MA	Overall Sample
% Reporting Any Drinking	78.3%	84.9%	72.1%	78.7%
# of Standard Drinks per Drinking Day	(N=284)	(N=72)	(N=44)	(N=400)
1	42.6%	26.4%	52.3%	40.8%
2	40.1%	51.4%	22.7%	40.3%
3-4	14.4%	16.7%	15.9%	15.0%
5-6	2.1%	2.8%	9.1%	3.0%
7+	0.7%	2.8%	0.0%	1.0%
Frequency of Drinking 6+ Drinks/Occasion	(N=284)	(N=73)	(N=44)	(N=401)
Never	71.5%	68.5%	70.5%	70.8%
<Monthly	20.4%	27.4%	20.5%	21.7%
Monthly	6.0%	0.0%	4.5%	4.7%
Weekly	1.8%	4.1%	0.0%	2.0%
Almost Daily	0.4%	0.0%	4.5%	0.7%
% Qualifying as Hazardous Alcohol Users	33.5%	47.7%	27.9%	35.2%
% Reporting Past Year Illegal Drug Use	9.4%	18.6%	4.9%	10.4%

Hazardous drinking according to the AUDIT-C differed significantly by region ($\chi^2(2)=7.8$, p<.05). Almost half of the respondents from Southeastern MA (47.7%) qualified as hazardous drinkers, compared to 33.5% from greater Boston and 27.9% from Western MA. Similarly, Southeastern MA respondents were more likely to report using illegal drugs than other respondents ($\chi^2(2)=8.6$, p<.05) – 18.6% compared to 9.4% of greater Boston respondents and 4.9% of Western MA respondents.

Mental and Physical Health

To assess for mental health problems that commonly co-occur with gambling problems, the survey included a short screen. A modified version of the Patient Health Questionnaire-4 assessed for anxiety and depression (PHQ-4: Kroenke, Spitzer, Williams, & Lowe, 2009). Individual items assessed how respondents rated their physical and mental health during the past year, and whether their health was the same or different than in previous years. Participants responded to both the depression and anxiety items with average scores ranging from 1.1 to 1.3 on a 4-point scale where 1 indicates "not at all", 2 indicates "several days", and 4 indicates "nearly every day". Figure 16 shows the percent of respondents who indicated they had experienced each item several days or more in the past two weeks.

Figure 16. Depression and Anxiety Symptoms by Region
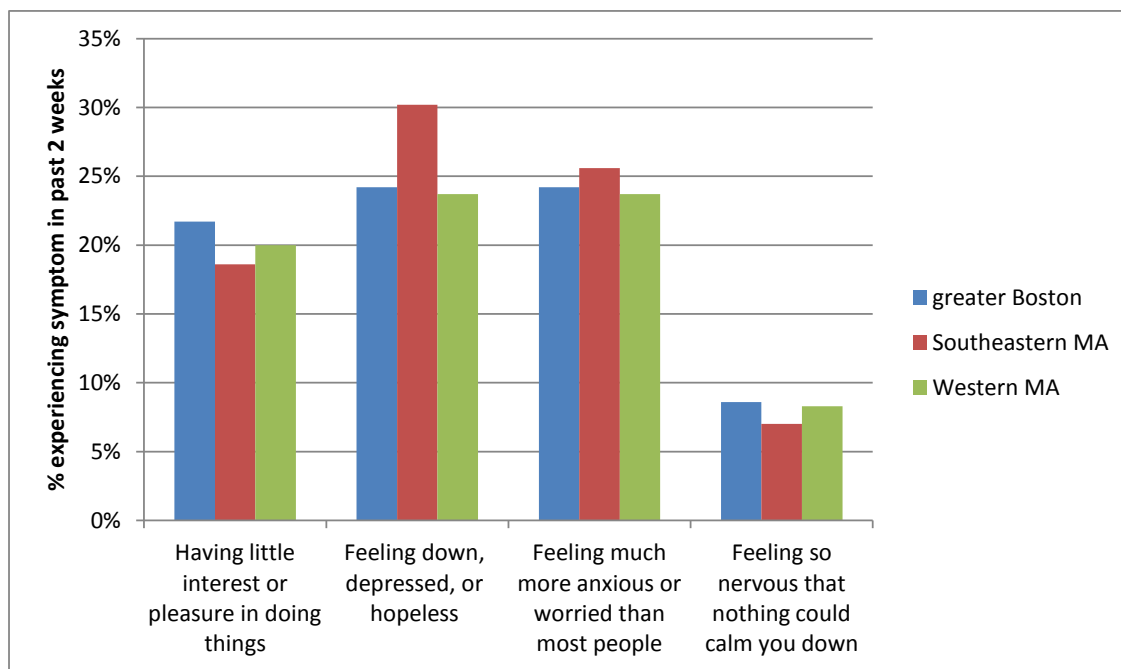
Eight percent of the sample screened positive for depression, and 4% screened positive for anxiety according to the PHQ-4. These rates did not vary by region.

Overall, respondents rated both their mental and physical health as, on average, between "good" (3) and "very good" (4) (M=3.5 for mental health, M=3.7 for physical health). Sixty-nine percent rated their current mental health as the same as a year ago, 19% rated it as better, and 12% rated it as worse. In terms of physical health, 76% rated it as the same as a year ago, 16% rated it as better, and 8 percent rated it as worse. These rates did not vary by region.

Monetary Habits

To provide a context for respondents' gambling habits, the survey included items addressing whether respondents set money aside for retirement or savings, and how often they purchased large-ticket items. Forty percent of the sample reported that, during the past year, they had not set any money aside for retirement; similarly, 29% had not placed any money into savings during the past year. However, 32% had made a single large purchase (e.g., car, computer, boat, flat screen TV) during the past year and 17% had made more than one large purchase. These results did not vary by region.

SIGNIFICANCE OF FINDINGS

This project is the cornerstone baseline survey of what we envision as a long-term prospective longitudinal research endeavor to study the effects of gambling expansion in MA and create a low-cost social indicator monitoring system for detecting changes in gambling behavior and related problems across time and space (e.g., LaBrie et al., 2007). Given that purpose, much of the significance of the findings themselves will lie in how the numbers change as expansion occurs in MA (see Brief Statement of Plans for the Future section). However, there are a few aspects of the presented findings that are worth highlighting.

Level of Gambling and Gambling Problems in the Sample

In our sample, 92.4% reported having gambled during their lifetime, and 53.6% having gambled during the past year. This is comparable to national general population estimates of gambling participation, though our lifetime rate is higher and our past year rate is lower. The National Comorbidity Survey Replication (NCS-R: Kessler et al., 2004; Kessler et al., 2008) reported that 78.4% of their sample had gambled during their lifetime; another national survey found that 82% reported having gambled in the past year (Welte, Barnes, Wieczorek, Tidwell, & Parker, 2002). NCS-R also reported that 54.5% of their sample had gambled more than 10 times, 27.1% had gambled more than 100 times, and 10.1% of their sample had gambled more than 1000 times during their lifetime. Gambling involvement (i.e., number of lifetime gambling events) appears to be elevated in our sample: 72.8% had gambled more than 10 times; 37.4% had gambled more than 100 times; and 11.1% had gambled more than 1000 times. Consistent with this data, the national study by Welte and colleagues indicated that New England had among the highest rates of gambling involvement compared to other regions of the US. Therefore, our findings fall within the range of involvement identified by nationally representative studies.

In our sample, 0.2% qualified for disordered gambling within the past year; 7.0% indicated they had experienced one or more of the DSM-IV criteria. The assessment we used to measure disordered gambling, the AUDADIS-IV, was the same assessment used in the National Epidemiological Survey of Alcohol and Related Conditions (NESARC: Grant, et al., 2003). In that nationally representative study, 0.4% qualified for lifetime disordered gambling (Petry, Stinson, & Grant, 2005) and 0.2% qualified for disordered gambling in the past year (Nelson, Gebauer, Labrie, & Shaffer, 2009). Therefore, the rates of clinically disordered gambling we found are in line with national estimates.

It also is important to consider the patterns of play in our sample. Though more than half report past year gambling, the majority of those play only the lottery, with about a quarter or more of lottery players playing weekly or more frequently. The other games that are most prevalent in our sample tend to be played once or twice a year, not on a frequent basis. However, a small minority of the sample engages in less common games, and play some of these games (e.g., Internet gambling) on a frequent basis.

Following this sample longitudinally across time will be crucial to determine how these patterns of play, as well as overall levels of play and problems, change across time as gambling expands in MA.

Exposure and Awareness

Even before the selection and opening of casinos in MA, residents have experienced meaningful exposure to gambling-related media stories, indicating that on some level, exposure processes already are in motion. The extent of this exposure varies by region. In particular, the Western region reports much more exposure to casino media. This makes sense, given the

fierce competition for casino licenses within the Springfield and Palmer area that has been present since before the legislation passed to expand gambling.

It is somewhat surprising and concerning that a majority of survey respondents were unaware of gambling treatment and intervention resources in their communities. Respondents were more familiar with the MA Gaming Commission, which does not directly provide resources, than with statewide programs such as the MA Council on Compulsive Gambling (the Council) and the helpline it provides. Given the services the Council provides, it will be important to increase awareness of those resources as gambling expansion goes forward in MA.

Region

Overall, the survey findings did not differ meaningful by region. In particular, general gambling behavior and problem levels did not vary by region. Media exposure, attitudes, gambling venue destinations, and substance use, however, did show regional differences. As reported above, the Western region experienced more casino-specific media exposure. However, the Southeastern region respondents were more likely to have visited certain gambling venues (i.e., Twin Rivers and Newport), and were more receptive to the idea of a casino or slots parlor in their community. These respondents were also more likely to engage in heavy or illegal substance use. These results suggest that the southeast region might be at increased risk for developing problems as a result of gambling expansion.

Limitations

As stated before, the conclusions we can draw from our sample are limited by its size and representativeness. The size of the sample limits the statistical power that is available for comparisons that are any more detailed than the broad regional level. The method of obtaining the sample is a strength of the study: unlike most online panels that combine multiple convenience samples, this sample was derived using rigorous random household-based sampling. However, the initial recruitment rate for the sample was low, so there is the possibility for selection bias within the sample. The same bias might also influence the responses the sample provided. This limitation, which is a problem for almost all household surveys of any kind today, makes longitudinal investigation crucial to determining how rates change across time as gambling expands. By following the same individuals across time and seeing how their responses change, we will be able to reduce much of the error introduced by selection biases. Without such a longitudinal design, estimates of change and impact would be indistinguishable from error introduced by sampling different individuals with high selection bias at two time points.

BRIEF STATEMENT OF PLANS FOR THE FUTURE

We see this project as the cornerstone baseline survey of what we envision as a long-term longitudinal research endeavor to study the effects of gambling expansion in Massachusetts and create a low-cost social indicator monitoring system for detecting changes in gambling behavior and related problems across time and space in the state and beyond (e.g., LaBrie, et al., 2007).

We plan to seek support for additional pre-expansion surveys, as well as continued surveys and monitoring once expansion occurs. Pre-expansion follow-up of our sample is particularly important, though often overlooked, even in longitudinal designs. Figure 17, below, demonstrates this point.

Figure 17: Measuring Potential Gambling Expansion Impact
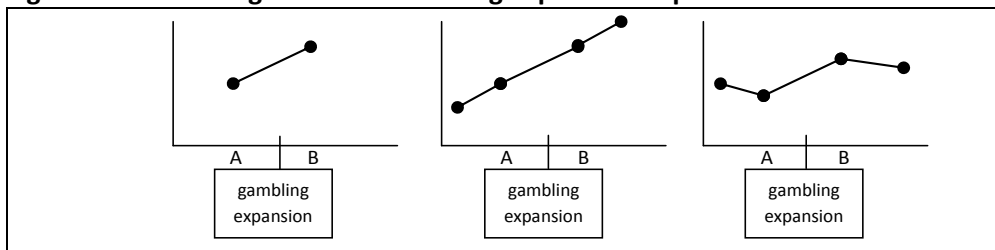
The graph on the left shows an increase in a hypothetical index of gambling-related harm before and after gambling expansion. With only two data points A and B, the data suggest that scores on the variable being measured increase after gambling expansion. The graph in the middle and the graph on the right show two of many possible contexts for these data, which become evident when more data are collected. In the middle graph, the increase in the measured variable no longer appears to be a direct result of gambling expansion, but instead part of a longer-term trend. In the graph on the right, we can be more confident that the score increase on the measured variable are associated with gambling expansion. However, the last data point suggests that the trend is not linear, perhaps evidencing adaptation as described earlier. As Figure 17 demonstrates, our understanding of the real impact of gambling expansion improves by collecting more data points.

Likewise, we plan to advance our ideas related to social indicator modeling. The typical approach to measuring the prevalence of gambling-related behaviors and problems is to conduct a telephone- or in-person survey representative of the general adult household population in the region of interest. To complete such a study at one time point is extremely expensive if done in-person, and unlikely to be representative if done by telephone, due to caller ID systems and the replacement of landlines with cell phones (Chang & Krosnick, 2009). To conduct a successful longitudinal follow-up of such a sample can be prohibitively expensive. These limitations make using these traditional prevalence study methods to monitor public health generally, and gambling more specifically, with the regularity needed to detect the effects of environmental changes, a near-impossible task. To address this, we intend to use the baseline survey completed through this Seed Grant and longitudinal follow-ups of the panel to develop an innovative social indicator monitoring system (Bauer, 1966; McAuliffe, LaBrie, & Woodworth, 2003). This low-cost and continuous approach to measuring gambling-related problems will be able to gather and integrate a variety of social indicators of gambling-related harm (e.g., helpline calls, website activity, Twitter feeds, bankruptcies, dropout rates, drug arrest rates). Once built and validated, the social indicator model can serve as a measure of variation

across MA regions and across time in the number of people who are experiencing gambling-related problems. A comparison of scores across geographic areas and time provides an accurate basis for public health planning and resource allocation. We are actively pursuing additional funding sources to support this social indicator modeling and follow-up studies of our sample.

APPENDIX A – KNOWLEDGE PANEL SURVEY

[See next page]

Knowledge Panels MA Gambling Survey Mockup

1. Approximately how often in the past 12 months (in other words, from about November 1, 2011 until now) have you engaged in the following leisure activities, either alone or with others?

	Never	A couple of times	Less than once a month	About once a month	A couple times a month	Weekly	A couple times a week	Daily or more
a. Shopping (for recreation, not necessity)	◯	◯	◯	◯	◯	◯	◯	◯
b. Exercising (e.g., at the gym, jogging, swimming, walking, biking – not playing sports)	◯	◯	◯	◯	◯	◯	◯	◯
c. Playing sports	◯	◯	◯	◯	◯	◯	◯	◯
d. Watching tv	◯	◯	◯	◯	◯	◯	◯	◯
e. Going to the movies	◯	◯	◯	◯	◯	◯	◯	◯
f. Going to concerts	◯	◯	◯	◯	◯	◯	◯	◯
g. Going to plays/musicals	◯	◯	◯	◯	◯	◯	◯	◯
h. Going to sporting events	◯	◯	◯	◯	◯	◯	◯	◯
i. Playing computer games	◯	◯	◯	◯	◯	◯	◯	◯
j. Spending time on the computer (other than playing games or online gambling)	◯	◯	◯	◯	◯	◯	◯	◯
k. Gambling	◯	◯	◯	◯	◯	◯	◯	◯
l. Going out to eat	◯	◯	◯	◯	◯	◯	◯	◯
m. Going to fairs/festivals/seasonal events	◯	◯	◯	◯	◯	◯	◯	◯
n. Reading	◯	◯	◯	◯	◯	◯	◯	◯
o. Going to museums/churches /community centers	◯	◯	◯	◯	◯	◯	◯	◯
p. Going to a friend's house	◯	◯	◯	◯	◯	◯	◯	◯

2. How often in the past 12 months have you encountered the following kinds of advertisements (e.g., billboard, television, radio, print, or online ad) or news stories (e.g., television, radio, print, or online) about Massachusetts gambling?

	Never	A couple of times	Less than once a month	About once a month	A couple times a month	Weekly	A couple times a week	Daily or more
a. Advertisements for a casino?	○	○	○	○	○	○	○	○
b. News stories about a casino?	○	○	○	○	○	○	○	○
c. Advertisements for a slots parlor?	○	○	○	○	○	○	○	○
d. News stories about a slots parlor?	○	○	○	○	○	○	○	○
e. Advertisements for the lottery?	○	○	○	○	○	○	○	○
f. News stories about the lottery?	○	○	○	○	○	○	○	○
g. Advertisements about online gambling?	○	○	○	○	○	○	○	○
h. News stories about online gambling?	○	○	○	○	○	○	○	○

3. For the next questions, please indicate the extent to which you agree or disagree with each statement.

	Disagree strongly	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree strongly
a. A gambling machine can be lucky	○	○	○	○	○
b. Gambling is an acceptable form of entertainment	○	○	○	○	○
c. If someone keeps betting, their luck will turn around	○	○	○	○	○
d. I would support having a resort casino in my community	○	○	○	○	○
e. Gambling is dangerous	○	○	○	○	○
f. After a few losses, people are due to win	○	○	○	○	○
g. Casinos lead to increased job opportunities in an area	○	○	○	○	○
h. A gambling machine or certain numbers can be "hot" or "cold"	○	○	○	○	○
i. If a number or symbol hasn't shown up for a while, it is due to show up	○	○	○	○	○
j. Gambling is a fun activity	○	○	○	○	○
k. Overall, the costs of having casinos in Massachusetts outweigh the benefits	○	○	○	○	○
l. People can do things that will make them luckier	○	○	○	○	○
m. I would support having a slots parlor in my community	○	○	○	○	○
n. A lucky charm can help someone win	○	○	○	○	○
o. Casinos lead to increased crime in an area	○	○	○	○	○

4. Think about all the times you ever placed a bet for money in your lifetime—from betting on sports in an office pool to playing cards with friends, buying lottery tickets, playing bingo, buying high risk stocks, playing pool or golf for money, playing slot machines, betting on horse races, and any other kind of betting or gambling. Taking all these things together, what's your best estimate of how many times you ever made a bet of any kind for money in your entire life?

      ○   Never   **[GO TO Q11]**
      ○   1-10 times
      ○   11-50 times
      ○   51-100 times
      ○   101-500 times
      ○   501-1,000 times
      ○ More than 1,000 times

5. To the best of your knowledge, about how old were you when you placed your first bet for money?

      [_____] years old

6. Have you bet or gambled for money in the past 12 months?

      ○   Yes
      ○   No   **[GO TO Q11]**

7. Approximately how often in the past 12 months have you bet or spent money on each of the following activities?

	Never	A couple of times	Less than once a month	About once a month	A couple times a month	Weekly	A couple times a week	Daily or more
Casino / Slot Parlor Gambling								
a. Playing roulette, dice, keno, or table games (other than poker) at a casino?	○	○	○	○	○	○	○	○
b. Playing poker at a casino?	○	○	○	○	○	○	○	○
c. Betting on sports at a casino?	○	○	○	○	○	○	○	○
d. Playing slot machines or video keno at a casino or slots parlor?	○	○	○	○	○	○	○	○
e. Playing video poker machines or other gambling machines (other than slots and keno) at a casino or slots parlor?	○	○	○	○	○	○	○	○
Non-Casino Gambling (non-charitable)								
f. Betting on sports with friends or in an office pool?	○	○	○	○	○	○	○	○
g. Betting on sports with a bookie or with parlay cards?	○	○	○	○	○	○	○	○
h. Betting on horse or dog races?	○	○	○	○	○	○	○	○
i. Betting on dog or cock fights?	○	○	○	○	○	○	○	○
j. Playing games of physical skill for money, such as pool, golf, or bowling?	○	○	○	○	○	○	○	○
k. Day trading (e.g., stocks, commodities, etc.)	○	○	○	○	○	○	○	○
l. Playing poker, chess, or other game of mental skill for money (not at a casino)?	○	○	○	○	○	○	○	○
m. Playing slot machines (not at a casino or slots parlor)?	○	○	○	○	○	○	○	○
n. Playing video poker machines or other gambling machines (other than slots) (not at a casino or slots parlor)?	○	○	○	○	○	○	○	○
o. Playing the lottery, keno, instant Lotto games, or instant scratch-off tickets (not at a casino or slots parlor)?	○	○	○	○	○	○	○	○
p. Gambling on the Internet (for money)	○	○	○	○	○	○	○	○
q. Other type of non-charitable non-casino gambling	○	○	○	○	○	○	○	○
Charitable Gambling (not for profit)								
r. Gambling at a non-profit gathering/event (e.g., church bingo game, fundraiser, etc.)	○	○	○	○	○	○	○	○
s. Gambling at a recurring charitable tournament or charitable poker room (e.g., Rockingham Park)	○	○	○	○	○	○	○	○

[IF POSSIBLE, QS 8,9, AND 10 SHOULD ONLY INCLUDE ROWS FOR OPTIONS ENDORSED AS 1+ TIMES (i.e., GREATER THAN "NEVER") IN Q7]

8. On a typical day that you gamble on each of the following activities, approximately how much time do you spend gambling on that activity?

	None/ Did not play	<1 hour	1-2 hours	3-4 hours	5-6 hours	7+ hours
Casino / Slot Parlor Gambling						
a. Playing roulette, dice, keno, or table games (other than poker) at a casino?	O	O	O	O	O	O
b. Playing poker at a casino?	O	O	O	O	O	O
c. Betting on sports at a casino?	O	O	O	O	O	O
d. Playing slot machines or video keno at a casino or slots parlor?	O	O	O	O	O	O
e. Playing video poker machines or other gambling machines (other than slots and keno) at a casino or slots parlor?	O	O	O	O	O	O
Non-Casino Gambling (non-charitable)						
f. Betting on sports with friends or in an office pool?	O	O	O	O	O	O
g. Betting on sports with a bookie or with parlay cards?	O	O	O	O	O	O
h. Betting on horse or dog races?	O	O	O	O	O	O
i. Betting on dog or cock fights?	O	O	O	O	O	O
j. Playing games of physical skill for money, such as pool, golf, or bowling?	O	O	O	O	O	O
k. Day trading (e.g., stocks, commodities, etc.)	O	O	O	O	O	O
l. Playing poker, chess, or other game of mental skill for money (not at a casino)?	O	O	O	O	O	O
m. Playing slot machines (not at a casino or slots parlor)?	O	O	O	O	O	O
n. Playing video poker machines or other gambling machines (other than slots) (not at a casino or slots parlor)?	O	O	O	O	O	O
o. Playing the lottery, keno, instant Lotto games, or instant scratch-off tickets (not at a casino or slots parlor)?	O	O	O	O	O	O
p. Gambling on the Internet (for money)	O	O	O	O	O	O
q. Other type of non-charitable non-casino gambling	O	O	O	O	O	O
Charitable Gambling (not for profit)						
r. Gambling at a non-profit gathering/event (e.g., church bingo game, fundraiser, etc.)	O	O	O	O	O	O
s. Gambling at a recurring charitable tournament or charitable poker room (e.g., Rockingham Park)	O	O	O	O	O	O

9. Approximately how much money did you _wager_ in total (regardless of win or loss) in the past 12 months on each of the following activities?

	$0/Did not play	$1-$50	$51-$100	$101-$500	$501-$1,000	$1,000-$5,000	$5,001-$10,000	$10,001-$20,000	$20,001+
Casino / Slot Parlor Gambling									
a. Playing roulette, dice, keno, or table games (other than poker) at a casino?	○	○	○	○	○	○	○	○	○
b. Playing poker at a casino?	○	○	○	○	○	○	○	○	○
c. Betting on sports at a casino?	○	○	○	○	○	○	○	○	○
d. Playing slot machines or video keno at a casino or slots parlor?	○	○	○	○	○	○	○	○	○
e. Playing video poker machines or other gambling machines (other than slots and keno) at a casino or slots parlor?	○	○	○	○	○	○	○	○	○
Non-Casino Gambling (non-charitable)									
f. Betting on sports with friends or in an office pool?	○	○	○	○	○	○	○	○	○
g. Betting on sports with a bookie or with parlay cards?	○	○	○	○	○	○	○	○	○
h. Betting on horse or dog races?	○	○	○	○	○	○	○	○	○
i. Betting on dog or cock fights?	○	○	○	○	○	○	○	○	○
j. Playing games of physical skill for money, such as pool, golf, or bowling?	○	○	○	○	○	○	○	○	○
k. Day trading (e.g., stocks, commodities, etc.)	○	○	○	○	○	○	○	○	○
l. Playing poker, chess, or other game of mental skill for money (not at a casino)?	○	○	○	○	○	○	○	○	○
m. Playing slot machines (not at a casino or slots parlor)?	○	○	○	○	○	○	○	○	○
n. Playing video poker machines or other gambling machines (other than slots) (not at a casino or slots parlor)?	○	○	○	○	○	○	○	○	○
o. Playing the lottery, keno, instant Lotto games, or instant scratch-off tickets (not at a casino or slots parlor)?	○	○	○	○	○	○	○	○	○
p. Gambling on the Internet (for money)	○	○	○	○	○	○	○	○	○
q. Other type of non-charitable non-casino gambling	○	○	○	○	○	○	○	○	○
Charitable Gambling (not for profit)									
r. Gambling at a non-profit gathering/event (e.g., church bingo game, fundraiser, etc.)	○	○	○	○	○	○	○	○	○
s. Gambling at a recurring charitable tournament or charitable poker room (e.g., Rockingham Park)	○	○	○	○	○	○	○	○	○

10. Considering all your wins and losses over the past 12 months together, approximately how much money total did you win or lose on each of the following activities? This should be "net" wins or losses. For example, if you wagered a total of $1,000 on blackjack and walked away with $100, your net loss would be $900.

	Lost $20,001+	Lost $10,001-$20,000	Lost $5,001-$10,000	Lost $1,001-$5,000	Lost $501-$1,000	Lost $101-$500	Lost $51-$100	Lost $1-$50	Broke even	Won $1 or more	Did not play
Casino / Slot Parlor Gambling											
a. Playing roulette, dice, keno, or table games (other than poker) at a casino?	○	○	○	○	○	○	○	○	○	○	○
b. Playing poker at a casino?	○	○	○	○	○	○	○	○	○	○	○
c. Betting on sports at a casino?	○	○	○	○	○	○	○	○	○	○	○
d. Playing slot machines or video keno at a casino or slots parlor?	○	○	○	○	○	○	○	○	○	○	○
e. Playing video poker machines or other gambling machines (other than slots and keno) at a casino or slots parlor?	○	○	○	○	○	○	○	○	○	○	○
Non-Casino Gambling (non-charitable)											
f. Betting on sports with friends or in an office pool?	○	○	○	○	○	○	○	○	○	○	○
g. Betting on sports with a bookie or with parlay cards?	○	○	○	○	○	○	○	○	○	○	○
h. Betting on horse or dog races?	○	○	○	○	○	○	○	○	○	○	○
i. Betting on dog or cock fights?	○	○	○	○	○	○	○	○	○	○	○
j. Playing games of physical skill for money, such as pool, golf, or bowling?	○	○	○	○	○	○	○	○	○	○	○
k. Day trading (e.g., stocks, commodities, etc.)	○	○	○	○	○	○	○	○	○	○	○
l. Playing poker, chess, or other game of mental skill for money (not at a casino)?	○	○	○	○	○	○	○	○	○	○	○
m. Playing slot machines (not at a casino or slots parlor)?	○	○	○	○	○	○	○	○	○	○	○
n. Playing video poker machines or other gambling machines (other than slots) (not at a casino or slots parlor)?	○	○	○	○	○	○	○	○	○	○	○
o. Playing the lottery, keno, instant Lotto games, or instant scratch-off tickets (not at a casino or slots parlor)?	○	○	○	○	○	○	○	○	○	○	○
p. Gambling on the Internet (for money)	○	○	○	○	○	○	○	○	○	○	○
q. Other type of non-charitable non-casino gambling	○	○	○	○	○	○	○	○	○	○	○
Charitable Gambling (not for profit)											
r. Gambling at a non-profit gathering/event (e.g., church bingo game, fundraiser, etc.)	○	○	○	○	○	○	○	○	○	○	○
s. Gambling at a recurring charitable tournament or charitable poker room (e.g., Rockingham Park)	○	○	○	○	○	○	○	○	○	○	○

11. Approximately how often in the past 12 months have you _been to_ the following locations (whether you gambled or not)?

	Never	A couple of times	Less than once a month	About once a month	A couple times a month	Weekly	A couple times a week	Daily or more
a. Foxwoods Resort Casino (Mashantucket, CT)	○	○	○	○	○	○	○	○
b. Mohegan Sun (Uncasville, CT)	○	○	○	○	○	○	○	○
c. Twin River Casino (Lincoln, RI)	○	○	○	○	○	○	○	○
d. Newport Grand Slots (Newport, RI)	○	○	○	○	○	○	○	○
e. Oxford Casino (Oxford, ME)	○	○	○	○	○	○	○	○
f. Hollywood Casino Hotel & Raceway (Bangor, ME)	○	○	○	○	○	○	○	○
g. Saratoga Casino & Raceway (Saratoga Springs, NY)	○	○	○	○	○	○	○	○
h. Monticello Casino & Raceway (Monticello, NY)	○	○	○	○	○	○	○	○
i. Empire City Casino at Yonkers Raceway (Yonkers, NY)	○	○	○	○	○	○	○	○
j. Hampton Falls Poker Room (Hampton Falls, NH)	○	○	○	○	○	○	○	○
k. Seabrook Poker Room (Seabrook, NH)	○	○	○	○	○	○	○	○
l. Rockingham Park Poker Room (Salem, NH)	○	○	○	○	○	○	○	○
m. Other neighboring state (CT,NH,RI or NY) casino, slots parlor, or poker room	○	○	○	○	○	○	○	○
n. Other non-neighboring state US casino, slots parlor, or poker room	○	○	○	○	○	○	○	○
o. Other international casino, slots parlor, or poker room	○	○	○	○	○	○	○	○

[IF POSSIBLE, Q 12 SHOULD ONLY INCLUDE ROWS FOR OPTIONS ENDORSED AS 1+ TIMES (i.e., GREATER THAN "NEVER") IN Q11]

[RESPONDENTS WHO ANSWERED "NEVER" TO Q4 SHOULD GO TO Q31]
[RESPONDENTS WHO ANSWERED "NO" TO Q6 SHOULD GO TO Q20]
[ALL OTHERS ADVANCE TO Q12]

12. Approximately how often in the past 12 months have you *gambled at* the following locations?

	Never	A couple of times	Less than once a month	About once a month	A couple times a month	Weekly	A couple times a week	Daily or more
a. Foxwoods Resort Casino (Mashantucket, CT)	○	○	○	○	○	○	○	○
b. Mohegan Sun (Uncasville, CT)	○	○	○	○	○	○	○	○
c. Twin River Casino (Lincoln, RI)	○	○	○	○	○	○	○	○
d. Newport Grand Slots (Newport, RI)	○	○	○	○	○	○	○	○
e. Oxford Casino (Oxford, ME)	○	○	○	○	○	○	○	○
f. Hollywood Casino Hotel & Raceway (Bangor, ME)	○	○	○	○	○	○	○	○
g. Saratoga Casino & Raceway (Saratoga Springs, NY)	○	○	○	○	○	○	○	○
h. Monticello Casino & Raceway (Monticello, NY)	○	○	○	○	○	○	○	○
i. Empire City Casino at Yonkers Raceway (Yonkers, NY)	○	○	○	○	○	○	○	○
j. Hampton Falls Poker Room (Hampton Falls, NH)	○	○	○	○	○	○	○	○
k. Seabrook Poker Room (Seabrook, NH)	○	○	○	○	○	○	○	○
l. Rockingham Park Poker Room (Salem, NH)	○	○	○	○	○	○	○	○
m. Other neighboring state (CT,NH,RI or NY) casino, slots parlor, or poker room	○	○	○	○	○	○	○	○
n. Other non-neighboring state US casino, slots parlor, or poker room	○	○	○	○	○	○	○	○
o. Other international casino, slots parlor, or poker room	○	○	○	○	○	○	○	○

13. Thinking about your gambling in the past 12 months: when you gambled, did you usually set a loss limit for yourself (in other words, a limit of how much you were willing to lose during a gambling session before you would stop gambling)?
    ○ Yes
    ○ No   [**GO TO Q15**]

14. In the past 12 months, how often did you continue to gamble after reaching your loss limit?
    ○ All of the time
    ○ Most of the time
    ○ Some of the time
    ○ Never
    ○ Never reached loss limit

15. Thinking about your gambling in the past 12 months: when you gambled, did you usually set a win limit for yourself (in other words, an amount which, after you won that much, you would stop gambling)?
    ○ Yes
    ○ No   [**GO TO Q17**]

16. In the past 12 months, how often have you continued to gamble after reaching your win limit?
    ○ All of the time
    ○ Most of the time
    ○ Some of the time
    ○ Never
    ○ Never reached win limit

17. In the past 12 months, have you ever needed to get more money in the middle of a gambling outing? (For example, after beginning gambling, have you used an ATM or gotten a cash advance on a credit card while at a casino?)
    ○ Yes
    ○ No

18. In the past 12 months, have you had any of the following experiences associated with your gambling? Please answer 'yes" or "no" for each one:

	Yes	No
a. In the past 12 months, did you ever gamble to get out of a bad mood – like feeling nervous, sad, or down?	○	○
b. In the past 12 months, did you ever gamble to forget your problems?	○	○
c. In the past 12 months, did you try to quit or cut down on your gambling, but found you couldn't do it?	○	○
d. In the past 12 months, did you ever find that you had to increase the amount of money you would gamble to keep it exciting?	○	○
e. In the past 12 months, did you ever spend a lot of time thinking about gambling, planning your bets, or studying the odds?	○	○
f. In the past 12 months, did you ever spend a lot of time thinking about ways to get money together so you could gamble?	○	○
g. In the past 12 months, did you ever spend a lot of time thinking about the times when you won or lost?	○	○
h. In the past 12 months, did you ever have job or school trouble because of your gambling – like missing too much work, being demoted at work, losing your job, or dropping out of school?	○	○
i. In the past 12 months, did you ever break up or come close to breaking up with anyone who was important to you because of your gambling?	○	○
j. In the past 12 months, did you ever try to keep you family or friends from knowing how much you gambled?	○	○
k. In the past 12 months, did you ever have such financial trouble as a result of your gambling that you had to get help with living expenses from family, friends, or welfare?	○	○
l. In the past 12 months, did you ever find that you became restless, irritable, or anxious when trying to quit or cut down on your gambling?	○	○
m. In the past 12 months, did you ever raise gambling money by writing a bad check, signing someone else's name to a check, stealing, cashing someone else's check, or in some other illegal way?	○	○
n. In the past 12 months, did you ever find you had to gamble again as soon as possible after losing in order to win back your losses?	○	○
o. In the past 12 months, did you ever find you had to gamble again as soon as possible after winning in order to win more?	○	○
p. In the past 12 months, after losing money gambling, did you ever return another day soon after to try to win back your losses?	○	○

[IF NO ANSWERED TO ALL OF Q18a-p, GO TO Q20; IF YES TO ANY OF Q18a-p, GO TO Q19]

19.   About how old were you the first time you began having some of these experiences associated with your gambling?

[   ] years old **[GO TO Q22]**

20.   Have you _ever_ had any problems with your gambling?
○ Yes **[GO TO Q21]**
○ No   **[GO TO Q31]**

21.   About how old were you the first time you began having problems with your gambling?

[   ] years old **[GO TO Q22]**

22. In your life, did you ever talk to a medical doctor or other professional about your problems with gambling? By other professional we mean psychologists, counselors, spiritual advisors, and other healing professionals.

○ Yes
○ No **[GO TO Q25]**

23. How old were you the first time you talked to a professional about your gambling problems?

[   ] years old

24. Did you receive professional treatment for your gambling problems at any time in the past 12 months?
○ Yes
○ No

25. In your life, did you ever go to a self help group like Gamblers Anonymous for help with your gambling problems?
○ Yes
○ No **[GO TO Q28]**

26. How old were you the first time you went to a self help group for people with gambling problems?

[   ] years old

27. How many meetings of such a group did you attend in the past 12 months?

[   ] meetings

28. In your life, did you ever call a gambling helpline for help with your gambling problems?
○ Yes
○ No **[GO TO Q31]**

29. How old were you the first time you called a gambling helpline for people with gambling problems?

[   ] years old

30. How many times did you call a gambling helpline in the past 12 months?

[   ] times

31. How many of your close relatives -- including your biological parents, brothers and sisters, and children – have ever had problems with gambling?

| |

32. Please indicate whether you know someone in each of the following groups who has a problem with gambling

	Yes	No
a. Self	○	○
b. Immediate family	○	○
c. Extended biological family	○	○
d. Extended non-biological family (e.g., in-laws)	○	○
e. Close friends	○	○
f. Co-workers	○	○
g. Other friends and acquaintances	○	○

33. Please indicate how familiar you are with the following:

	Never heard of it	Have heard of it, but not familiar with it	Somewhat familiar with it	Have used /interacted with it
a. Massachusetts Council on Compulsive Gambling	○	○	○	○
b. Massachusetts Gambling Helpline	○	○	○	○
c. Gambling treatment programs in Massachusetts	○	○	○	○
d. Massachusetts Gaming Commission	○	○	○	○
e. Gamblers' Anonymous meetings in Massachusetts	○	○	○	○

34. Is there gambling treatment available in your community?
   - ○ Yes
   - ○ No
   - ○ Don't know

35. Are there Gamblers' Anonymous meetings available in your community?
   - ○ Yes
   - ○ No
   - ○ Don't know

36. How often do you have a drink containing alcohol?

- ○ Never **[GO TO Q39]**
- ○ Monthly or less
- ○ Once a week or less
- ○ 2 to 4 times a week
- ○ 5 or more times a week

37. How many standard drinks do you have on a typical day when you are drinking?

- ○ 1
- ○ 2
- ○ 3 or 4
- ○ 5 or 6
- ○ 7 or more

38. How often do you have 6 or more standard drinks on one occasion?

- ○ Never
- ○ Less than monthly
- ○ Monthly
- ○ Weekly
- ○ Daily or almost daily

39. Have you used drugs (other than alcohol or tobacco) recreationally or for non-medical purposes in the past 12 months?

- ○ Yes
- ○ No

40. Over the past two weeks, how often have you been bothered by any of the following problems?

	Not at all	Several days	More than half the days	Nearly every day
a. Having little interest or pleasure in doing things	○	○	○	○
b. Feeling down, depressed, or hopeless	○	○	○	○
c. Feeling much more anxious or worried than most people	○	○	○	○
d. Feeling so nervous that nothing could calm you down	○	○	○	○

41. Please rate your current physical and mental health

	Poor	Fair	Good	Very good	Excellent
a. How would you rate your overall physical health?	○	○	○	○	○
b. How would you rate your overall mental health?	○	○	○	○	○

42. Please rate your current physical and mental health compared to one year ago

	Worse	Same	Better
a. Is your overall physical health now worse than, about the same as, or better than it was a year ago?	○	○	○
b. Is your overall mental health now worse than, about the same as, or better than it was a year ago?	○	○	○

43. What is your annual household income from all sources, before taxes?

- ○ Less than $20,000
- ○ $20,000 but less than $30,000
- ○ $30,000 but less than $40,000
- ○ $40,000 but less than $50,000
- ○ $50,000 but less than $60,000
- ○ $60,000 but less than $75,000
- ○ $75,000 but less than $100,000
- ○ $100,000 but less than $125,000
- ○ $125,000 but less than $150,000
- ○ $150,000 or more

44. In the past 12 months, what percent of your total household income did your total household put into a retirement account or set aside for retirement?

[_____] %

45. In the past 12 months, how much money did your household set aside for savings (other than retirement)?

- ○ $0
- ○ $1-$100
- ○ $101-$1,000
- ○ $1,001-$5,000
- ○ $5,001-$10,000
- ○ $10,001-$20,000
- ○ $20,0001 or more

46. In the past 12 months, how many large purchases have you made (e.g., car, big screen tv, house, computer, boat)?

- ○ 0
- ○ 1
- ○ 2-3
- ○ 4-5
- ○ More than 5

47. What is your current employment status? (Choose all that apply)

☐ Employed full-time (non-temporary)

☐ Employed part-time (non-temporary)

☐ Employed temporarily

☐ Self-employed

☐ Looking for work; Unemployed

☐ Temporarily laid off

☐ Retired

☐ Homemaker

☐ Student

☐ Maternity Leave

☐ Illness / Sick Leave

☐ Disabled

☐ Other

48. Have you or any member of your immediate family ever worked in the gambling industry?

○ No

○ Yes, I have worked in the gambling industry but am not currently working in the industry

○ Yes, I am currently working in the gambling industry

○ I have NOT worked in the gambling industry, but a member of my immediate family HAS

APPENDIX B – REFERENCES

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