Gambling and Problem Gambling in Massachusetts: Results of a Baseline Population Survey

September 15, 2017

This report summarizes findings from a large baseline general population survey of Massachusetts to assess gambling behavior and problem gambling before any of the state's new casinos became operational. The survey was mandated by the Expanded Gaming Act and funded by the Massachusetts Gaming Commission. This report is revised from the original report, published in May 2015, to reflect changes to the data weighting procedure.

SEIGMA

SOCIAL AND ECONOMIC IMPACTS OF GAMBLING IN MASSACHUSETTS

UNIVERSITY OF MASSACHUSETTS SCHOOL OF PUBLIC HEALTH AND HEALTH SCIENCES

Authorship and Acknowledgements

Authorship

Rachel A. Volberg, Associate Professor at the University of Massachusetts Amherst School of Public Health and Health Sciences, is the study Principal Investigator and responsible for the overall leadership of the project as well as oversight of the population survey design, implementation, and analysis. Dr. Volberg is the lead author of the current report.

Robert J. Williams, Professor at the University of Lethbridge, Faculty of Health Sciences, is a Co-Principal Investigator on the project and provided oversight of the survey design, implementation and analysis. Dr. Williams is the main co-author of the current report.

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Amanda Houpt, SEIGMA Project Manager, provided oversight of the reporting process. Ms. Houpt contributed to all sections of the report and also had primary responsibility for graphic design and editing.

Martha Zorn, SEIGMA Data Manager, was responsible for data management, data cleaning, and data analysis and contributed to all sections of the report.

Rosa Rodriguez-Monguio, Associate Professor at the University of Massachusetts Amherst School of Public Health and Health Sciences, leads the social and health impacts team. Dr. Rodriguez-Monguio contributed the section of the report comparing results of the Baseline Population Survey with other surveys of gambling and problem gambling carried out in Massachusetts in 2012 and 2013.

Acknowledgements

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Above all, this survey could not have been completed without the cooperation and good will of the thousands of Massachusetts residents who agreed to participate.

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Other NORC staff contributed in important ways to the project. Kari Carris was our first Project Director, followed by Michael Johnson. Ashley Amaya was our first Project Manager, followed by Stephanie Poland. They each took on the tasks of setting weekly meeting agendas and taking and distributing meeting notes. Katie Dekker, Ying Li, and Whitney Murphy all worked on drawing the sample, managing sample release, and reporting weekly on data collection progress. Erin Fordyce assisted with managing contacts with respondents to assure that their concerns were addressed in a timely fashion. Edward Sipulski and his production team assured data were collected efficiently across the different modes of the survey.

A splendid team of Research Assistants at the School of Public Health and Health Sciences helped with data cleaning and data analysis. We would like to thank Daniel Flynn, Alison Hope, Niharika Kareddy, Nozipho Maziya, Meegan Remillard, Yifeng Wu, Bin Tu, and Yiding Zhang for their enthusiasm and energy as well as dedication and hard work over the many months that we spent cleaning the data and conducting our analyses. We would also like to thank Penny Pekow, Assistant Professor in the Department of Biostatistics at the School of Public Health and Health Sciences. Penny read several sections of the draft report and provided valuable feedback on our reporting of the statistical results. Finally, we would like to thank several new members of the SEIGMA research team, including Alissa Mazar, Valerie Evans, Joshua Freeman, and Mahim Naveed who assisted with the many revisions of the original BGPS report.

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Bruce Cohen **Thomas Land**	Massachusetts Department of Public Health
Marlene Warner **Philip Kopel**	Massachusetts Council on Compulsive Gambling
Alan Feldman **Christine Reilly** **Nathan Smith**	National Center for Responsible Gaming
Paul Watanabe	Institute for Asian American Studies University of Massachusetts Boston
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Andrea Tull	Massachusetts General Hospital Partners Healthcare System
Bradley Curtis	Massachusetts Department of Transportation

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In July 2014, the Massachusetts Gaming Commission and the Executive Office of Health and Human Services signed a historic Memorandum of Understanding (MOU) that established joint oversight of the Public Health Trust Fund required under the Expanded Gaming Act. Since the signing of that MOU, the Commission's annual research agenda—including SEIGMA—has been overseen by the Executive Committee of the Public Health Trust Fund. We are grateful to the members of this committee for their continued support of this research effort and look forward to sharing much more information with them in the coming months and years.

Finally, we would like to thank Mark Vander Linden, Director of Research and Responsible Gaming, Chairman Stephen P. Crosby and Commissioner Enrique Zuniga of the Massachusetts Gaming Commission, for their thoughtful input and clear guidance over the entire course of the project. The Commission's broad vision for the expansion of gambling in Massachusetts and commitment to the research needed to maximize the benefits and minimize harms related to gambling in the Commonwealth made this project possible.

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A PDF OF THIS REPORT CAN BE DOWNLOADED AT: www.umass.edu/seigma

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Acronyms and Abbreviations

AAPOR – American Association of Public Opinion Research
ABS – Address Based Sampling
ADW – Advance Deposit Wagering
AUDADIS-IV – Alcohol Use Disorder and Associated Disabilities Interview Schedule DSM-IV Version
BBGS – Brief Biosocial Gambling Screen
BGPS – Baseline General Population Survey
BRFSS – Behavioral Risk Factor Surveillance Survey
CASRO – Council of American Survey Research Organizations
CATI – Computer Assisted Telephone Interview
CAWI – Computer Assisted Web Interview
CDC – Centers for Disease Control and Prevention
CHA-DOA – Cambridge Health Alliance Division on Addiction
CI – Confidence Interval
CPGI – Canadian Problem Gambling Index
DSM – Diagnostic and Statistical Manual of Mental Disorders
EGM – Electronic Gaming Machine
IRB – Institutional Review Board
MA DPH – Massachusetts Department of Public Health
MAGIC – Massachusetts Gambling Impact Cohort Study
MCCG – Massachusetts Council on Compulsive Gambling
MGC – Massachusetts Gaming Commission
MOU – Memorandum of Understanding
NSF – Insufficient Information (refers to cells in tables with estimates that are considered unreliable due to large relative standard errors)
PPGM – Problem and Pathological Gambling Measure
PUMS – Public Use Microdata Sample
RFR – Request for Response
RSE – Relative Standard Error
SAQ – Self Administered Questionnaire
SE – Standard Error
SEIGMA – Social and Economic Impacts of Gambling in Massachusetts
SFTP - Secure File Transfer Protocol
SOGS – South Oaks Gambling Screen
UMass – University of Massachusetts

Executive Summary

Background

In November 2011, an Act Establishing Expanded Gaming in the Commonwealth was passed by the Massachusetts Legislature. This legislation permits casinos and slot parlors to be introduced in Massachusetts for the first time. Section 71 of the Expanded Gaming Act requires the Massachusetts Gaming Commission (MGC) to establish an annual research agenda to understand the impacts of these new venues. This includes a comprehensive, first-of-its-kind baseline study of problem gambling prevalence and available treatment services before any of the new gaming facilities become operational. Data will be collected and analyzed each year to identify the true social and economic impacts of gambling expansion. Data and findings will be made public to regulators, policymakers, public health practitioners, researchers, and the general population in order to inform policymaking and planning across the state. In 2012, the MGC selected a team from the University of Massachusetts Amherst School of Public Health and Health Sciences to carry out the Social and Economic Impacts of Gambling in Massachusetts (SEIGMA) study. Internationally, this study is unique in obtaining information about gambling involvement and problem gambling prevalence prior to the introduction of casino gambling. While the SEIGMA study will establish baselines for virtually all social and economic variables that may be affected by expanded gaming, this report summarizes findings from the large baseline general population survey mandated by the Expanded Gaming Act and completed by the SEIGMA research team and its partners in 2013 and 2014.

Methods

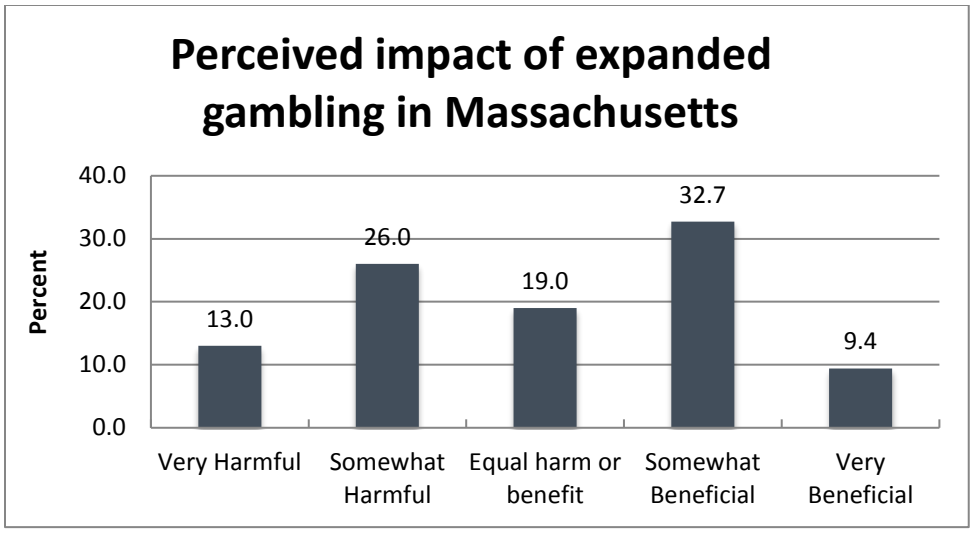
The SEIGMA team obtained a probability sample of all Massachusetts adults and allowed survey respondents to complete the survey online, on paper, or by telephone. The Baseline General Population Survey took place between September 11, 2013 and May 31, 2014, had a response rate of 36.6%, and achieved a final sample size of 9,578 respondents. This report presents a comprehensive compilation of descriptive statistical results from the baseline survey. Comparisons described as “higher” or “lower” are based on statistical tests of significance. This first report does not include deeper exploration of the data; the SEIGMA research team will conduct in-depth analyses over the course of the next year, releasing findings as they become available.

Key Findings

Attitudes about Gambling in Massachusetts

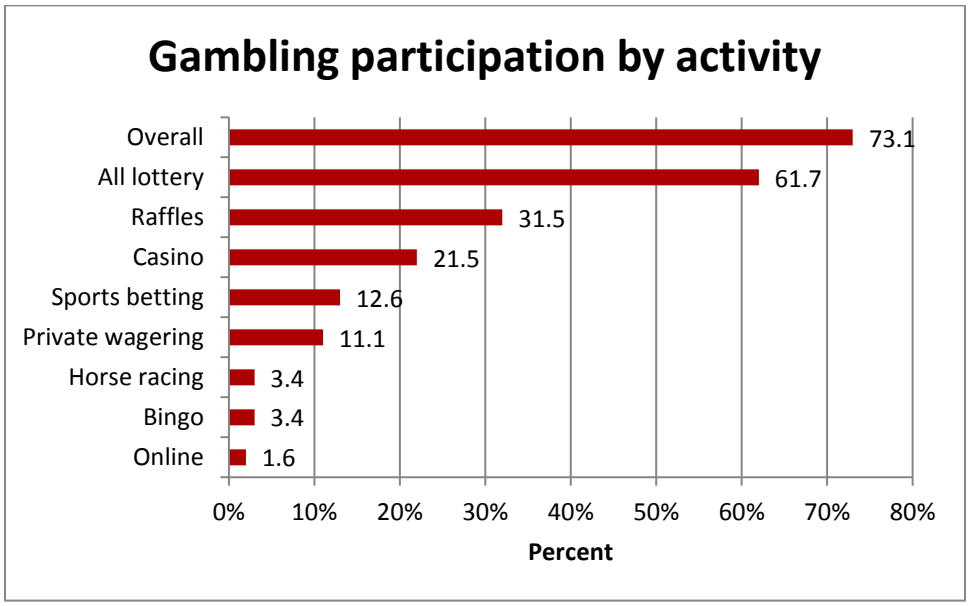
There is a range of opinion among Massachusetts residents concerning the legalization, availability, and impact of gambling.

- Over half of the population (55.2%) believe that some forms of gambling should be legal and some should be illegal, with only a third (32.0%) reporting that all forms should be legal, and a tenth (12.8%) reporting that all forms should be illegal
- Nearly two thirds (61.3%) believe that the current availability of gambling in the Commonwealth is acceptable
- Over half (61.1%) perceive the impact of gambling expansion on the state to be neutral, beneficial, or very beneficial while 39.0% perceive the impact to be somewhat or very harmful



Gambling in Massachusetts

We define gambling as betting money or material goods on an event with an uncertain outcome in the hopes of winning additional money or material goods. This includes things such as lottery games, bingo, betting against a friend on a game of skill or chance, and betting on horse racing or sports. Overall, nearly three quarters of Massachusetts residents report participating in one of these gambling activities in the past year.

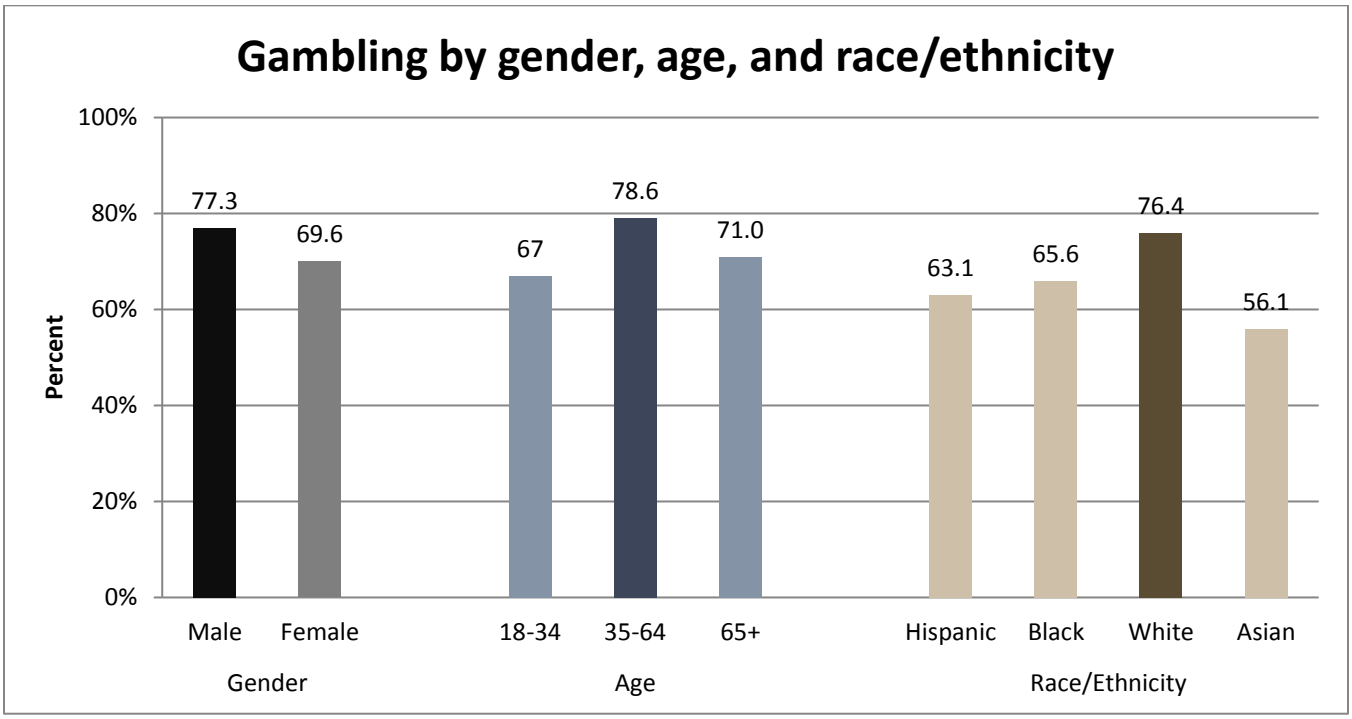


- While a quarter of the population do not gamble, 34.6% gamble yearly, 20.4% gamble monthly, and 18.1% gamble weekly
- Approximately 6 in 10 people report playing the lottery
- Just under a quarter (21.5%) of Massachusetts adults report visiting casinos to gamble. Over half of people who do so (66.3%) visit casinos in Connecticut

- Past-year gamblers in Massachusetts are most likely to say that winning money is the main reason they gamble, followed by excitement/entertainment, socializing with family/friends, and supporting worthy causes

There are significant differences in overall gambling participation associated with gender, age, race/ethnicity, education, employment, income level, and geographic region:

- Men are more likely to gamble than women
- Middle-aged adults (25-64) are more likely to gamble than younger adults (18-24) or older adults (65+)
- Whites are more likely to gamble than Hispanics, Blacks, or Asians

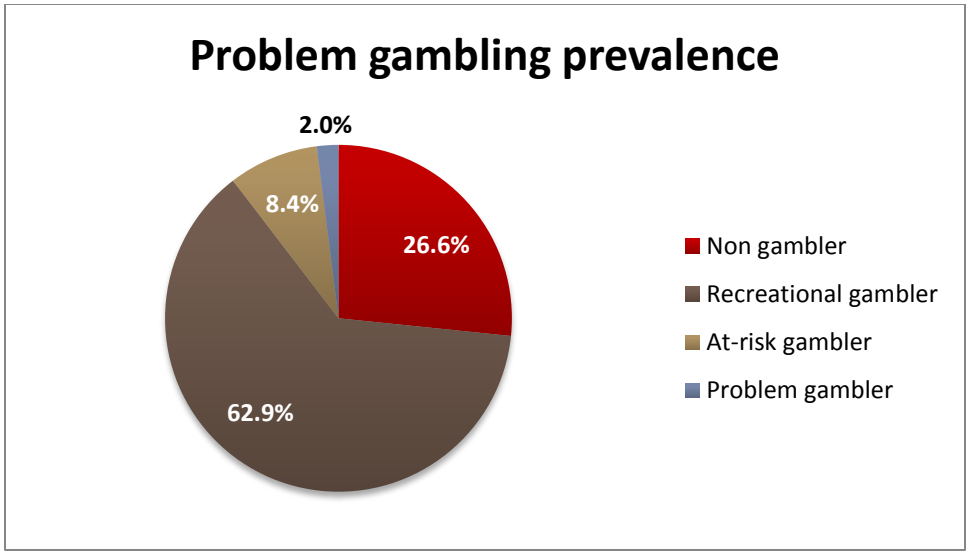


Problem Gambling in Massachusetts

Based on their answers to a standard set of questions, we classified people who gambled in the past year as recreational gamblers, at-risk gamblers, and problem gamblers. Recreational gamblers gamble because they enjoy these activities. At-risk gamblers engage in a range of behaviors, such as persistently betting more than planned, spending more time gambling than intended, chasing losses, and borrowing money to gamble, that place them at greater risk of experiencing a gambling problem. Problem gamblers are individuals who experience significant impaired control over their gambling and negative consequences as a result of their impaired control.

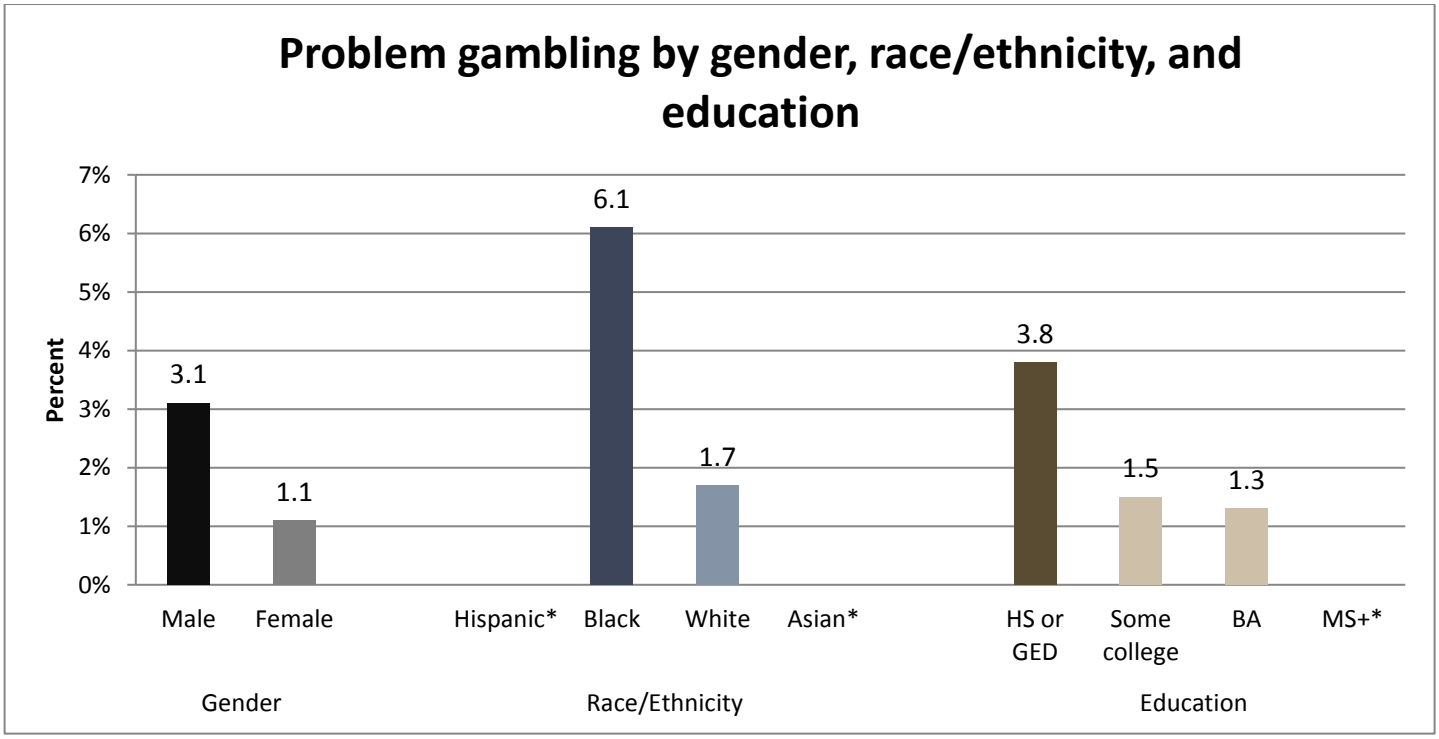
- The current prevalence of problem gambling in Massachusetts is 2.0% of the adult population
- An additional 8.4% of the population are at-risk gamblers
- Based on the percentages above, we estimate that between 83,152 and 135,122 adult residents are problem gamblers and between 389,776 and 488,519 adult residents are at-risk gamblers
- Additionally, nearly 2 in 10 Massachusetts adults (18.5%) reported knowing someone who they considered gambled too much

- The prevalence of problem gambling in Massachusetts is very similar to prevalence rates identified in other U.S. states



There were significant differences in problem gambling associated with gender, race/ethnicity, and education. The graph below illustrates that:

- Men are 3 times more likely to have a gambling problem than women
- Blacks are 4 times more likely to have a gambling problem than Whites
- Individuals with only a high school diploma are 3 times more likely to have a gambling problem than individuals with a college degree

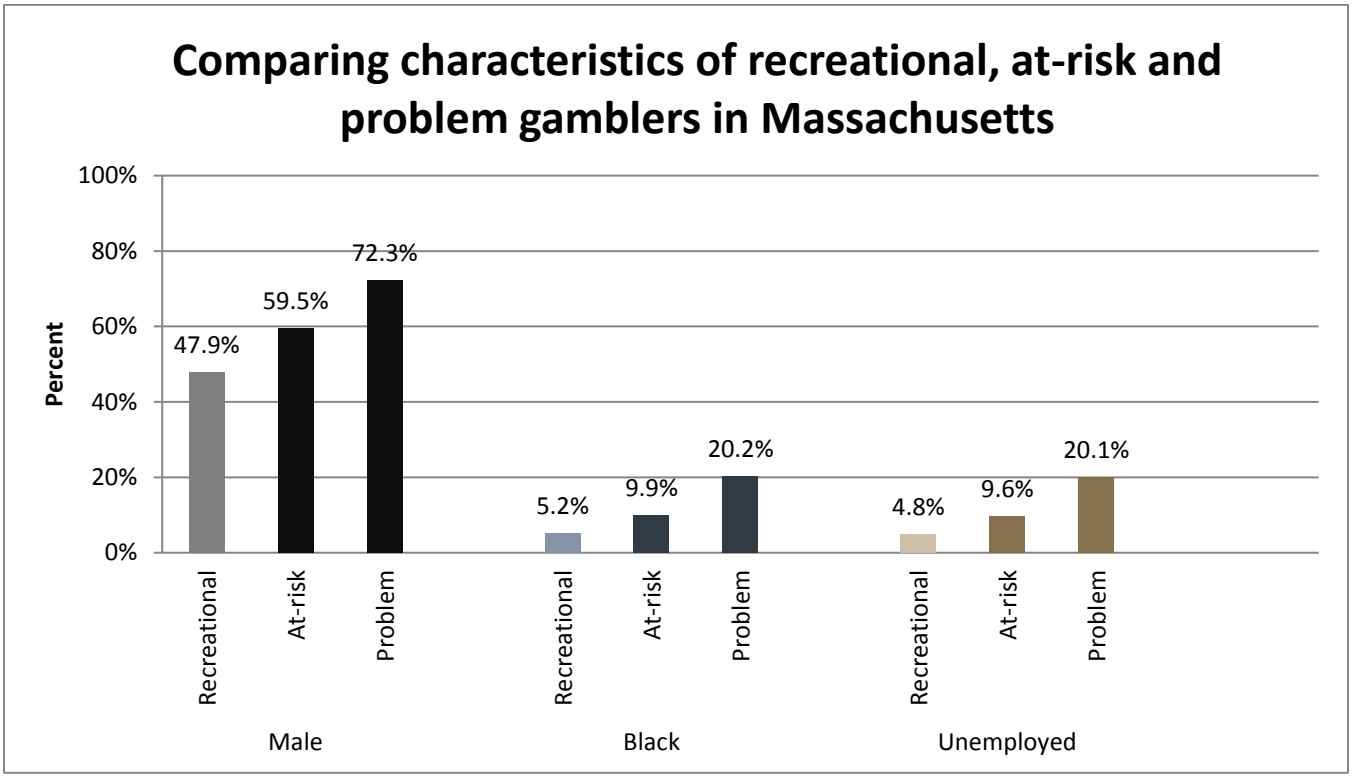


Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Comparing Recreational, At-Risk, and Problem Gamblers in Massachusetts

There are notable distinctions between recreational, at-risk, and problem gamblers. At-risk and problem gamblers in Massachusetts are significantly more likely than recreational gamblers to be:

- Male
- Black
- Unemployed

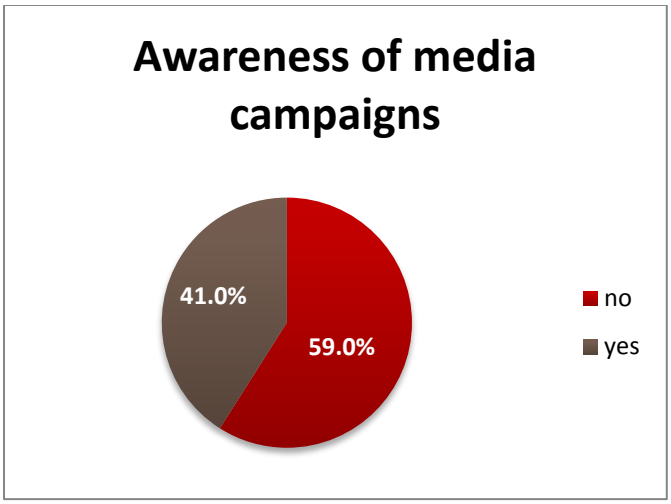


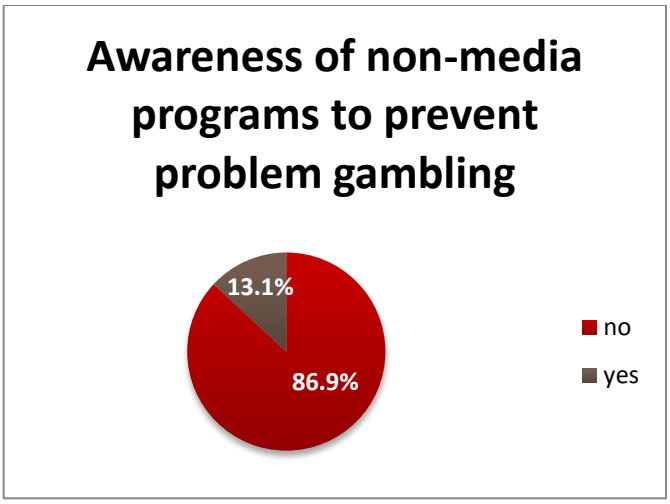
Initial survey results show that, compared to recreational gamblers, at-risk and problem gamblers are more likely to report:

- Serious problems with depression, anxiety, and other mental health problems
- Using tobacco
- Consuming large amounts of alcohol at one time

Problem Gambling Services in Massachusetts

Awareness of existing problem gambling prevention initiatives in Massachusetts is quite variable. About 4 in 10 Massachusetts residents are aware of media campaigns to prevent problem gambling. However, just over 1 in 10 of adults is aware of non-media prevention programs in schools and communities around the state. Of these, only a very small number had participated in such programs.





Among problem gamblers in the survey, only a very small number indicated that they would like help for a gambling problem or had sought help for such a problem. This contrasts with our earlier estimate that between 83,152 and 135,122 Massachusetts adults currently have a gambling problem. The gap between this estimate and the small number of individuals who reported desiring or seeking treatment highlights a potentially underserved population that may be in need of treatment.

Future Directions

While the statistics presented in this report tell us a lot about gambling attitudes, behavior, problems, and prevention awareness, additional analysis of the Baseline General Population Survey data will enrich our understanding of gambling and problem gambling in Massachusetts. Deeper analyses will allow us to examine factors that may contribute to or cause problem gambling, relationships between gambling attitudes and gambling participation, and factors associated with particular types of gambling. We also plan deeper analyses of data that were not highlighted in this report because of the small numbers of respondents who reported certain behaviors. For example, survey respondents in military service since September 11, 2001 reported a particularly high rate of problem gambling. We plan to look at this group more closely in the future to clarify this preliminary finding. Additionally, although estimates of suicidal ideation and attempted suicide obtained in the Baseline General Population Survey were too small to be reliable, the data do indicate that suicidality is somewhat higher among problem gamblers in Massachusetts compared with others in the population. We plan to investigate this further to clarify the relationship between problem gambling status and suicidality.

Since the Baseline General Population Survey is just one component of the broader SEIGMA study, we will analyze other sources of data to verify and enhance the findings presented in this report. Additionally, all of the data collected by the SEIGMA team will be made public over time. This will enable other researchers and stakeholders to interact with the data and conduct their own analyses, adding to the body of knowledge about gambling in Massachusetts. Moreover, because the SEIGMA research plan calls for the same survey to be repeated one year after all of the new gaming facilities have become operational in Massachusetts, future data will allow us to measure the impacts of gambling expansion in Massachusetts more directly. Measuring the same behaviors and using the same methods at subsequent points in time will be useful in monitoring changes over time in attitudes, gambling participation, and problem gambling prevalence in Massachusetts. Results of the Baseline General Population Survey and subsequent surveys will be useful in developing data-driven strategies to promote responsible gambling, raise awareness about problem gambling, and design general and targeted prevention and treatment programs for problem gamblers and their families in Massachusetts.

CHAPTER 1:

Introduction

Background to the 2014 Baseline General Population Survey

In November, 2011, an Act Establishing Expanded Gaming in the Commonwealth was passed by the Legislature and signed by Governor Deval Patrick (Chapter 194 of the Acts of 2011). This legislation permits casinos and slot parlors to be introduced in Massachusetts under the regulatory auspices of the Massachusetts Gaming Commission (MGC). Three casino licenses are available, with one allocated for the Greater Boston area, one for Western Massachusetts, and one for Southeastern Massachusetts. A single license for a slot parlor is also available, with no geographic restriction as to its location. The three regions defined in the legislation each include several counties:

- Region A (Greater Boston): Suffolk, Middlesex, Essex, Norfolk, and Worcester
- Region B (Western MA): Hampshire, Hampden, Franklin, and Berkshire
- Region C (Southeastern MA): Bristol, Plymouth, Nantucket, Dukes, and Barnstable

These regions are shown below in Figure 1.

Figure 1 Regions established under the Expanded Gaming Act

Section 71 of the Expanded Gaming Act requires the MGC to establish "an annual research agenda" and identifies three essential elements of this research agenda:

- Understanding the social and economic effects of expanded gambling;
- Implementing a baseline study of problem gambling and the existing prevention and treatment programs that address its harmful consequences; and

- Obtaining scientific information relative to the neuroscience, psychology, sociology, epidemiology, and etiology of gambling.

Section 58 of the Expanded Gaming Act further requires the MGC to establish a Public Health Trust Fund which will be used to support social service and public health programs dedicated to addressing problem gambling, including prevention, treatment, and research. This includes the annual research agenda. However, the Public Health Trust Fund cannot be fully established and endowed until fees are assessed from gaming licensees and funds are collected from taxes on casino gross gaming revenues.

Although the Public Health Trust Fund was not in place when the Expanded Gaming Act was enacted, Section 71 required the MGC to conduct a baseline study of problem gambling prevalence and available treatment services before any of the new gaming facilities became operational. Since the baseline study necessitated collecting data ahead of the granting of licenses, the MGC elected to spend significant resources of its own to fulfill this statutory requirement ahead of the establishment of the Public Health Trust Fund. To this end, the MGC issued a Request for Response (RFR) for Research Services in November, 2012. In March of 2013, the MGC selected a research team from the University of Massachusetts Amherst (UMass) School of Public Health and Health Sciences to carry out a comprehensive research agenda. The project, titled the Social and Economic Impacts of Gambling in Massachusetts, will be referred to as SEIGMA throughout the rest of this report.

The SEIGMA study addresses all three of the essential elements contained in the MGC research agenda using a collaborative orientation, a state of the art analytical framework, a mixed methods research strategy, and a comprehensive approach that establishes the impacts of casino gambling at state, regional, and local levels. Internationally, this study is unique in obtaining information about gambling involvement and problem gambling prevalence prior to the introduction of casino gambling. The SEIGMA study includes many research activities that have been described in previous reports (for more information, visit: www.umass.edu/seigma).

While the SEIGMA study will establish baselines for virtually all social and economic variables that may be affected by expanded gaming, this report focuses on one aspect of the broader SEIGMA study and summarizes findings from the large baseline general population survey mandated by the Expanded Gaming Act and recently completed by the SEIGMA research team and its partners. Findings from this survey—completed well before any casino or slot machine gambling was available in Massachusetts—will be essential in developing strategies to minimize gambling-related harm and bring the greatest possible benefit of expanded gaming to the people of the Commonwealth.

Definitions of Terms Used in this Report

Gambling is a broad concept that includes diverse activities, undertaken in a wide variety of settings, appealing to different types of people, and perceived in various ways. For this report, we define gambling as "betting money or material goods on an event with an uncertain outcome in the hope of winning additional money and/or material goods" (Williams et al., 2017). This definition includes activities that are typically identified as gambling (i.e., electronic gaming machines, casino table games, sports betting, private wagering, bingo, horse race betting) as well as activities about which there is sometimes less public consensus (i.e., raffles, lottery tickets).

The concepts of gambling and gambling participation exist on a continuum, which is represented in the figure below. Individuals who do not gamble (non-gamblers) are located at one end of this continuum and individuals who experience problems with their gambling (problem and severe problem gamblers) are located at the opposite end of this continuum. This figure underscores our view of gambling problems as highly dynamic;

individuals can move in and out of points along this continuum at different times in their lives. For example, a non-gambler could begin gambling or an at-risk gambler could develop into a problem gambler. The concept of a gambling continuum is supported by mounting evidence that gambling problems may not necessarily be chronic and progressive. Indeed, a substantial proportion of the difficulties linked to gambling occur in persons who engage in risky gambling behavior but who do not meet the criteria for the recognized psychiatric diagnosis of Gambling Disorder (Korn & Shaffer, 1999; Toce-Gerstein, Gerstein, & Volberg, 2003).

Figure 2 The gambling continuum

As mentioned above, some people, who we refer to as ***Non-Gamblers*****,** do not gamble for various reasons. Others gamble because they enjoy and obtain benefits from gambling activities. Throughout this report, we refer to this group of people as ***Recreational Gamblers***. For most recreational gamblers, gambling is generally a positive experience; however, for some people, gambling is associated with difficulties of varying severity and duration. Some regular, recreational gamblers develop significant, debilitating problems that result in harm to themselves, people close to them, and to the wider community, while others do not (Abbott, Volberg, Bellringer, & Reith, 2004).

At-Risk Gambling includes a broad range of gambling behaviors (e.g., persistently betting more than planned or spending more time gambling than intended, chasing losses, and borrowing money to gamble) as well as biased cognitions (e.g., superstitions, illusions of control, and misunderstandings about the nature of probability and randomness). Although at-risk gambling is not a clinically defined condition, it is generally viewed as gambling in ways that may pose a risk of physical or emotional harm to the gambler or others but has not produced effects that would result in a clinical diagnosis.

At-risk gamblers are of interest because they represent a much larger proportion of the population than problem and severe problem gamblers. This group is also of interest because of the possibility that their gambling-related difficulties may become more severe over time. Additionally, public awareness and education campaigns may be more effective at changing at-risk gambling behavior than more entrenched and severe gambling problems (Hodgins & el-Guebaly, 2000; Shaffer & Korn, 2002).

Problem Gambling typically refers to individuals who experience impaired control over their gambling behavior and negative consequences arising from this impaired control. The definition of problem gambling used in this report is "difficulties in limiting money and/or time spent on gambling which leads to adverse consequences for the gambler, others, or for the community." This definition incorporates both the notion of an underlying condition as well as its consequences (Neal, Delfabbro, & O'Neil, 2005: 125).

Severe Problem Gambling sits at the most severe end of the continuum of problematic gambling involvement. Similar to problem gambling, it is characterized by impaired control over gambling and significant negative consequences deriving from this impaired control. However, in contrast to problem gambling, both the loss of control and the negative consequences are more extensive and severe. This, in turn, creates a more chronic and debilitating condition for the person experiencing it.[1] Chronic disorders are likely to recur once fully developed, giving those who experience them a lifelong vulnerability. This vulnerability to relapse may be effectively treated and kept in check; however, a period in which an individual is relatively free of symptoms does not mean that the person is free of the disorder.

In epidemiological research, individuals are generally categorized as at-risk, problem, or severe problem gamblers on the basis of their endorsement of items included in one of the many instruments developed to identify individuals with gambling-related difficulties (Abbott & Volberg, 2006; Stinchfield, Govoni, & Frisch, 2007; Williams & Volberg, 2014). Because these instruments were developed at different points in time and used different clinically diagnostic criteria, they use different terms to classify gamblers, including problem gamblers, pathological gamblers, and disordered gamblers. To limit confusion about these terms, we use problem gambling throughout this report as an umbrella term that encompasses the full range of loss of control as well as gambling harms and consequences that an individual may experience. A more thorough explanation of the evolution of this term and the scale we used to measure problem gambling in Massachusetts can be found in Chapter 5 of this report (see *Problem Gambling in Massachusetts*).

Legal Forms of Gambling in Massachusetts

Legal gambling in Massachusetts includes a state lottery, charitable gambling, casino gambling, and pari-mutuel wagering on horse and dog races. Other types of gambling available to Massachusetts residents include casino gambling in Connecticut and other out-of-state locations, and remote gambling by telephone, on mobile devices, and online. In this section, we provide background on legal forms of gambling in Massachusetts.

Massachusetts Lottery

The Massachusetts Lottery was created in 1971 to generate local aid for the 351 cities and towns in the Commonwealth. Using a formula established by the Legislature, the 351 cities and towns of the Commonwealth receive approximately 20% of total lottery sales on an annual basis. These funds are not earmarked for any specific programs; this allows the cities and towns to decide how they wish to spend the funds.

[1] This greater chronicity has recently been confirmed in longitudinal cohort research (el-Guebaly et al., 2015a; Williams et al., 2015).

Starting with a weekly draw game in 1972, the Lottery has added numerous other products to its mix including instant tickets in 1974 (the first state to do so), a daily numbers game in 1976, and a variety of traditional, large jackpot games in the 1980s and 1990s. In 1993, the Lottery introduced Keno, a casino-style game offered every few minutes on monitors in approximately 1,200 bars, restaurants, and similar establishments around the state. In 1996, the Lottery joined five other states to create an early multi-state lottery game that allowed for much larger maximum prizes. The Massachusetts Lottery maintains a statewide network of approximately 7,500 retail sales agents, including chain stores, supermarkets, gas stations, convenience stores, and corner stores. These retailers earn commissions on lottery sales and bonuses on prizes claimed. The average retailer earns around $37,000 annually from lottery products.

In FY2014, Massachusetts Lottery revenues totaled $4.9 billion with 70% of these revenues accounted for by instant games (Massachusetts State Lottery Commission, 2014). In the same fiscal year, the Lottery paid out a total of $3.5 billion in prizes; this 72% return to players is the highest in the country (Shelton, 2012). Direct local aid in FY2014 was $920.2 million. The legal age to purchase lottery products in Massachusetts is 18 (www.masslottery.com).

Charitable Gambling

Charitable gambling in Massachusetts in the form of bingo (sometimes called "Beano") was legalized in 1971 with oversight transferred in 1973 from the Department of Public Safety to the Massachusetts State Lottery Commission. Other forms of charitable gambling, including raffles and "casino nights" held as fundraisers by charitable organizations, churches, and schools, have been legal since 1969. The Massachusetts Lottery is responsible for collecting taxes on gross receipts from all bingo games, raffles, and "casino nights." There are approximately 150 licensed charitable bingo operators in Massachusetts and several poker rooms operate under the casino night law with daily games benefitting a rotating set of charities. In 2013, gross revenues from charitable gambling included $33 million from bingo games and another $33 million from other charitable gambling activities. The legal age to participate in charitable gambling in Massachusetts is 18 (www.masslottery.com/games/charitable-games/bingo.html).

Casino Gambling

As noted above, the Expanded Gaming Act, passed in 2011, permits up to three casino resorts and one slot parlor in the state. Two casino resorts have been licensed—MGM Springfield and Wynn Boston Harbor in Everett—along with one slot parlor at Plainridge Racecourse. These venues are all under development, with the Plainridge Park Casino scheduled to open in June, 2015. The legal age to gamble at a casino in Massachusetts is 21.

Horse and Dog Racing

Pari-mutuel wagering involves betting among a pool of players rather than betting against the house, as happens at a casino (Tidwell, Welte, Barnes, & Dayanim, 2015). Pari-mutuel wagering on horse and dog races was legalized in Massachusetts in 1934 and live racing was held at four race tracks as well as at agricultural fairs around the state until well into the present century. Wagering on horse and dog races declined steadily over the 20th century and many tracks have struggled to survive as purses, attendance, and the number of races have fallen and competition from other forms of gambling has grown (Tidwell et al., 2015). One innovation adopted in Massachusetts in 2009 is Advance Deposit Wagering (ADW) which allows bettors to deposit funds into an account and place bets on races taking place in other jurisdictions using a mobile device, with winnings deposited back into the account.

Live dog racing was banned in Massachusetts in 2009 and the state's two greyhound tracks closed at the end of that year (Moskowitz, 2009). Simulcast wagering on greyhound, harness, and thoroughbred racing, which involves satellite broadcasts of races from other tracks so that wagers from multiple tracks can be combined, is

still offered at Raynham Greyhound Park, Suffolk Downs in East Boston, and Plainridge Racecourse. Harness racing, which began in Massachusetts in 1947, continues today at Plainridge Racecourse (Temple, 2010). In 2013, the handle (or total amount of money wagered) at Suffolk Downs, Plainridge Racecourse, and the two dog tracks where simulcast wagering is still offered totaled $277 million (Massachusetts Gaming Commission, 2014). The legal age to participate in pari-mutuel wagering on horse and dog races in Massachusetts is 18.

Rationale for Conducting a Baseline General Population Survey of Gambling

The gambling studies field has changed considerably over the last 30 years. In the 1980s and early 1990s, when the first surveys of gambling and problem gambling were carried out, policy makers were simply interested in finding out how many problem gamblers there were in the population in order to fund and design treatment services for individuals with gambling-related difficulties. Since that time, the goals for gambling prevalence research have become more complex.

The growth of legal, commercial gambling has been accompanied by an increase in stakeholders with interests in and concerns about the gaming industry and how it affects individuals, families, and communities. Policy makers, planners, and government agencies are concerned with a broad range of gambling behaviors in the population, as well as with the balance of positive and negative impacts that may accompany the increased availability of gambling. Gaming regulators and operators are interested in how to manage funds appropriately to address the issue of problem gambling while still maintaining a viable commercial industry. Public health professionals, social scientists, and healthcare providers are interested in identifying ways to minimize risks to specific subgroups in the population. Other professionals, such as economists, law enforcement professionals and the banking, insurance, and credit card industries, are interested in the relationship between gambling, indebtedness, bankruptcy, and crime. There is also interest in the extent of the profits flowing to the gaming industry from gambling by problem gamblers. Treatment professionals and non-profit organizations are focused on developing appropriate treatment services and in judiciously allocating the resources that flow to the mental health and addictions field. Finally, there is growing interest in prevention strategies and interventions for minimizing gambling-related harms.

Population surveys of gambling have become an essential component in establishing and monitoring legal gambling (Volberg, 2004; Volberg & Wray, 2013; Young, 2013). Results of these surveys can be used to shape public awareness campaigns using targeted messages to prompt changes in attitudes and behavior in vulnerable subgroups in the population. Population surveys can also inform the development of treatment services for individuals with gambling problems, through identification of the number and characteristics of individuals likely to seek help. Population surveys have the potential to improve how gambling problems are identified and how communities respond. Finally, population surveys have value in advancing understanding of the risk factors associated with gambling problems—information needed in the development of evidence-based gambling interventions, regulations, and policies.

While some forms of gambling (e.g., horse racing, lottery) are well-established in Massachusetts, very little is known about Bay Staters who experience problems related to their gambling or what measures would most effectively minimize or mitigate their problems. An important early step in developing a statewide strategy to prevent and minimize problem gambling in Massachusetts is to determine the number and characteristics of specific subgroups in the population who are at risk of experiencing difficulties related to their gambling. Knowing who may be at risk will allow the state to efficiently allocate resources and design effective prevention campaigns. In order to provide effective and efficient problem gambling services, the state also needs information about the number and characteristics of individuals in need of clinical services, their awareness of treatment services, and the barriers they face in accessing treatment.

The main purpose of the SEIGMA Baseline General Population Survey was to provide much of this information by assessing the extent of gambling and problem gambling in the adult population of Massachusetts prior to the introduction of casino gambling and providing information about the public's knowledge of available resources for addressing gambling problems. The results of the study contained in this report are intended for use by the Commonwealth in its efforts to design general and targeted awareness and prevention programs for problem gamblers and their families in Massachusetts and to develop strategies to provide help to the groups most affected by this disorder.

The SEIGMA research plan calls for the Baseline General Population Survey to be repeated one year after all of the new gaming facilities have become operational in Massachusetts. This and future replication surveys—measuring the same behaviors and using the same methods at subsequent points in time—will be useful in monitoring changes over time in gambling participation and problem gambling prevalence in Massachusetts. These replication surveys will permit more precise assessments of the impacts of specific types of gambling in Massachusetts and provide important information for the refinement of services for Bay Staters with gambling problems.

Principal Study Questions

The theories and key findings of previous studies informed the development of research questions for the Baseline General Population Survey. In our original research plan, the primary goal of the survey was to establish a baseline level of gambling participation and problem gambling prevalence prior to the opening of any new gaming facilities in Massachusetts. A secondary goal was to assess awareness and utilization of problem gambling services in the Commonwealth. We identified the following research questions as fundamentally important both to understand the nature and magnitude of problem gambling in Massachusetts prior to the introduction of casino gambling and to develop approaches to enhance existing problem gambling prevention and treatment services in the Commonwealth.

- What are current attitudes toward gambling in Massachusetts?
- What is the current prevalence of gambling in Massachusetts?
- What is the demographic, game type, and geographic pattern of gambling in Massachusetts?
- What is the current prevalence of problem gambling in Massachusetts (as well as the actual number of problem gamblers)?
- What is the geographic and demographic pattern of problem gambling in Massachusetts?
- Which particular forms of gambling are most strongly related to problem gambling in Massachusetts?
- What are the social, health, and economic consequences of problem gambling to individuals in Massachusetts with this condition?
- How aware is the general public of existing problem gambling prevention initiatives?
- How many problem gamblers in Massachusetts desire treatment and how many seek treatment?
- Where do problem gamblers go to receive treatment in Massachusetts?
- What barriers exist to treatment seeking?

Recognizing that even with a very large sample, the Baseline General Population Survey was unlikely to include a substantial number of individuals who have utilized problem gambling services in Massachusetts, we carried out a separate Baseline Online Panel Survey using an identical questionnaire. Online panels, in which people are recruited and then asked to respond to a number of survey requests, are gaining prominence and are now commonly used in market research, and increasingly in academic studies (Göritz, 2007; Göritz, Reinhold, & Batinic, 2002). However, since these panels are typically not representative of the general population, online

panel data cannot be used to accurately estimate the population prevalence of problem gambling. Results from the Baseline Online Panel Survey will be published in a future report that includes additional data on problem gambling help-seeking and treatment provision in Massachusetts.

This report presents a comprehensive compilation of descriptive statistical (univariate and bivariate) results from the baseline survey. It does not include multivariate analyses. The SEIGMA research team will conduct these more in-depth analyses over the course of the next year, releasing findings as we continue to examine and analyze the dataset. This report is organized into several chapters for clarity of presentation. Following this *Introduction*, an *Overview of Methods* details how we conducted the survey. The next five chapters present findings from the survey in the following areas:

- Attitudes toward gambling in Massachusetts
- Gambling behavior in Massachusetts
- Prevalence of problem gambling in Massachusetts
- Comparing recreational, at-risk, and problem gamblers in Massachusetts
- Attitudes toward, awareness of, and involvement in problem gambling services in Massachusetts

The report concludes with a summary of the findings of the study. There are several appendices to the report, including a detailed explanation of the study methodology, a copy of the questionnaire, and comprehensive tables that summarize the findings from most of the items in the survey.

CHAPTER 2:

Overview of Methods

The Baseline General Population Survey of gambling and problem gambling in Massachusetts was completed in several stages. In the first stage of the project, the SEIGMA research team and staff from NORC at the University of Chicago worked together to finalize the questionnaire and sampling frame. Ethical approval for the study was obtained from both the NORC and the UMass Amherst Institutional Review Boards (IRBs). NORC programmed the questionnaire for computer-assisted web interviewing (CAWI) and computer-assisted telephone interviewing (CATI) administration, as well as creating a self-administered paper-and-pencil questionnaire (SAQ) and advance materials such as letters, postcards, and brochures. All materials were translated into Spanish and back-translated to verify consistency. In the second stage of the project, the surveys were administered and completed by 9,578 respondents between September, 2013 and May, 2014. The third stage of the project involved data cleaning and data weighting to increase confidence in generalizing results to the adult population of Massachusetts. The final stage of the project entailed drafting and finalizing this report.

In this chapter, we present an overview of the research methods used in the study. Additional information on the study methodology, intended for technical readers, is provided in Appendix A. Appendix A1 provides information about the timeline and progress of the survey.

Ethical and Peer Review

The research protocol for the survey was reviewed separately by NORC's internal IRB and by the UMass IRB. All materials that respondents were expected to see (letters, brochures, postcards, and questionnaire) were submitted for review. These reviews ensured that the selection of participants was appropriate, privacy was protected, informed consent was obtained, and safeguards were in place to protect the data. Both IRBs approved the study protocol in July, 2013. As data collection progressed, materials requiring modification or new materials not included in the original submissions were sent as amendments for review by both IRBs. In addition to IRB approval, NORC obtained a federal Certificate of Confidentiality for the survey from the National Institutes of Health.

The draft report was reviewed by MGC staff, staff at the Massachusetts Department of Public Health (MA DPH), members of two MGC advisory committees, and two specialist reviewers. All of the feedback was carefully considered and incorporated in this final report.

Questionnaire Development and Description

The SEIGMA research team began developing the questionnaire for the survey in May, 2013. The questionnaire was reviewed by NORC and content was shared with MGC, MA DPH, and the Massachusetts Council on Compulsive Gambling (MCCG). Some changes were made to more closely align the questionnaire with the 2013 Behavioral Risk Factor Surveillance System (BRFSS) survey in Massachusetts to allow for comparisons across the two surveys.[2] Once the questionnaire was finalized, all of the survey materials were translated into Spanish (to

[2] BRFSS is a national system of telephone surveys that collect data about U.S. residents regarding their health-related risk behaviors, chronic health conditions, and use of preventive services. BRFSS collects data in all 50 states as well as the District of Columbia and three U.S. territories (http://www.cdc.gov/brfss/). Appendix G of this report provides a comparison of the 2013 BRFSS and the SEIGMA Baseline General Population Survey methods and selected results.

accommodate the 9.0% of the Massachusetts population that is Hispanic and Latino) by Briljent, a company that specializes in translation services. Both the English and Spanish language versions of the questionnaire were converted to a self-administered online format, self-administered paper-and-pencil format, and a computerized telephone format.

The Baseline General Population Survey was introduced to potential participants as a survey of "health and recreation," to ensure that all adults contacted (both those who participated in gambling and those who did not) would be equally interested in completing the survey (Williams & Volberg, 2009). To increase the number of survey responses, the survey could be completed in three modes. First, the contacted adult was asked to complete the survey online using a key-code provided in the contact letter. If the survey was not completed online, a paper-and-pencil copy of the survey was sent to the adult. Finally, if a response was not received to either the online survey or the paper-and-pencil survey, an attempt was made to complete the survey by telephone. This sequence of survey offerings maximized the opportunity for the survey to be self-administered, which is known to reduce the potential for bias. A best-practices approach was used for questionnaire design and conducting the survey, as described in Appendix A2.

Questionnaire Content

The questionnaire included sections on recreation, physical and mental health, alcohol and drug use, gambling attitudes, gambling behavior, gambling motivations, importance of gambling as a recreational activity, awareness of problem gambling services, gambling-related problems, and demographics. The sections of the questionnaire are described in more detail in Appendix A3, and a copy of the questionnaire is included in Appendix B.

Two instruments were used to assess problem gambling in the Massachusetts survey: the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001) and the Problem and Pathological Gambling Measure (PPGM) (Williams & Volberg, 2010, 2014). Worldwide, the CPGI is presently the most common instrument for the assessment of problem gambling (surpassing both the South Oaks Gambling Screen (SOGS) and the DSM-IV criteria for pathological gambling) (Williams, Volberg, & Stevens, 2012). The PPGM is a relatively new instrument that has superior sensitivity, positive predictive power, diagnostic efficiency, and overall classification accuracy compared to other problem gambling instruments. Since the main purpose of this and future SEIGMA surveys is to track the impacts of expanded gaming in Massachusetts, repeated use of the PPGM will ensure consistency of the results. Comparing survey results to studies that have used other assessment instruments is interesting but not central to the project. For this reason, discussion of the CPGI and its performance in the Baseline General Population Survey is presented in Appendix E3 rather than in the body of this report.

Sampling Strategy

A primary objective of the survey was to estimate the prevalence of problem gambling in the Massachusetts adult (18+) population[3] with sufficient precision to detect a potential 25-50% change in prevalence after new gaming facilities open in Massachusetts. Based on prior research suggesting that Massachusetts problem gambling prevalence would be in the range of 1-2% (Shaffer, Hall, & Vander Bilt, 1999; Williams, Volberg, et al., 2012), it was determined that a sample of approximately 10,000 adults would likely be adequate (using a one-sided test with alpha=0.05, and 80% power) (see Appendix A3 for a discussion of our power calculations).

[3] Since the legal age to participate in all forms of legal gambling in Massachusetts except casino gambling is 18, we opted to include adults aged 18 and over in the survey.

To obtain a probability sample of all Massachusetts adults, Address Based Sampling (ABS) was used to ensure that all Massachusetts households had a positive probability of selection into the sample regardless of telephone ownership (landline, cell phone, or no telephone). Within each sampled dwelling unit, the adult with the most recent birthday was selected as the survey respondent. Over-sampling in Western Massachusetts, where 12% of the Massachusetts population resided in 2013, was used so as to estimate problem gambling prevalence in this part of the state with acceptable precision. The survey was therefore designed to select a stratified sample of dwelling units that would yield 2,500 adult respondents in Western Massachusetts and 7,500 adult respondents in Eastern Massachusetts (the remainder of the state).

A total of 24,400 addresses were selected in the initial sample from a frame of 2,731,168 Massachusetts addresses. The frame included 2,391,969 addresses in Eastern Massachusetts, and 339,199 addresses in Western Massachusetts. NORC assumed that some addresses would not be eligible, either because they were unoccupied or were not residential addresses. Likewise, NORC assumed that they would be unable to contact and obtain responses from all of the people selected. The number of addresses selected was based on the anticipated proportion of addresses that could be resolved (the resolution rate), the proportion of resolved addresses that were eligible residential addresses (screening rate), and the anticipated contact and completion rates such that the expected completed responses would total 10,000. An address was resolved if enough information was available to make a decision as to whether or not the address was a household. A random sample of addresses was then selected from each stratum in the frame of Massachusetts addresses (6,100 from Western MA and 18,300 from Eastern MA).

Once selected, the addresses were matched with landline telephone numbers (the overall telephone match rate, including matches only to a street address for a multi-unit building, was approximately 78%). Data were collected in three batches, with 4,880 addresses in Batches 1 and 3 (each consisting of 1,220 addresses in Western Massachusetts, and 3,660 addresses in Eastern Massachusetts), and 14,640 addresses in Batch 2 (with 3,660 addresses in Western Massachusetts, and 10,980 addresses in Eastern Massachusetts). After a lower number of people than anticipated completed paper-and-pencil questionnaires in the first three batches, two additional batches of addresses (1,952 and 7,016 addresses, respectively) were selected via stratified sampling in order to achieve the targeted number of complete surveys. The total number of addresses included in the final sample was 33,368.

Data Collection Procedures

The survey launched on September 11, 2013 and ended on May 31, 2014. Each sampled address followed a sequence of contacts until a completed survey was obtained, or some other final status (e.g., non-residential address, unscreened likely household, ineligible, partial interview) was determined. Mailings were scheduled approximately two weeks apart to give respondents enough time to receive and complete the questionnaire so that NORC could remove completed cases from follow-up mailings.

All respondents were initially mailed a letter inviting them to participate in the survey online. The letter contained a $1 incentive and offered respondents a $10 Amazon gift-code if the survey was completed within 14 days. A thank-you or reminder postcard was mailed out one week after the advance letter. Two weeks later, a second postcard was mailed out. If respondents had not completed the survey online four weeks after the advance letter, they were sent an SAQ along with an explanatory letter, a $5 incentive, and a return envelope. Two weeks later, a thank-you or reminder postcard was mailed out. After another two weeks, households received a second invitation letter along with a second copy of the questionnaire. Every address that failed to complete the survey via mail or online and whose household had been matched with a landline telephone number was then called and given the opportunity to complete the survey over the telephone as well as reminded of the online option. Telephone interviews were conducted by trained interviewers using a CATI

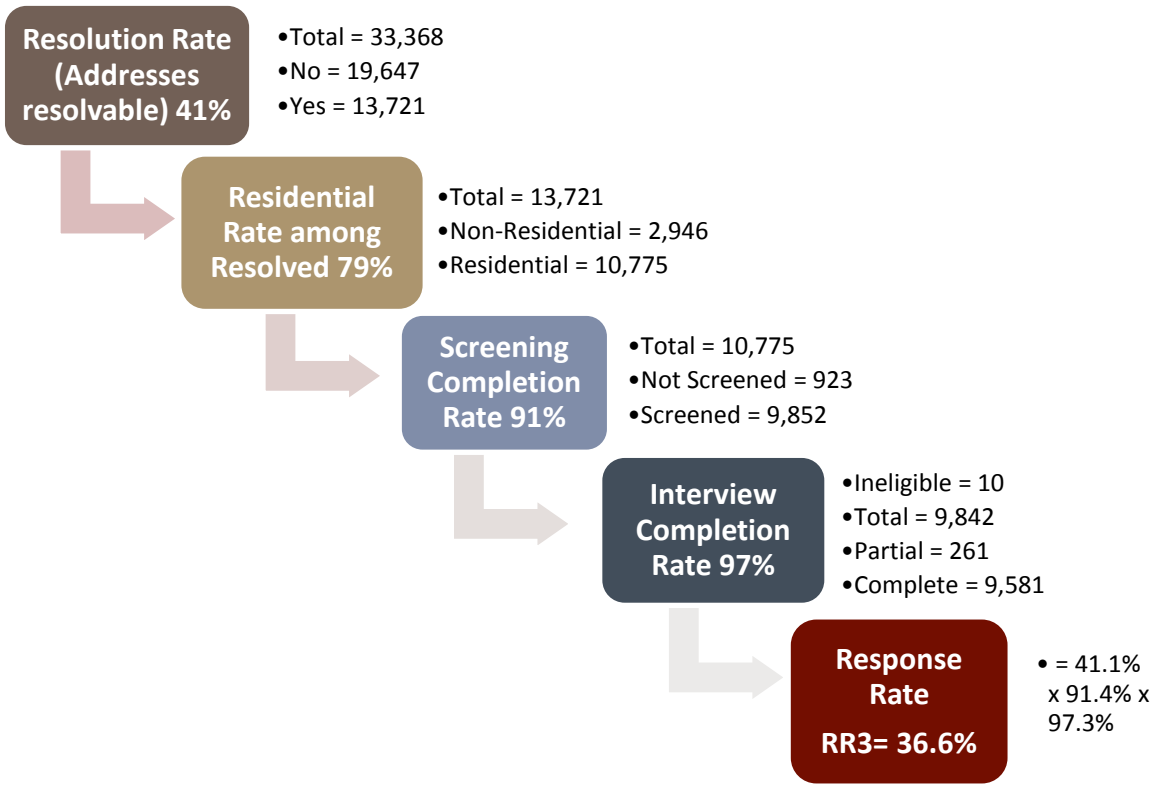
system. A survey was considered complete if the individual responded to at least 7 of the 10 primary questions on participation in gambling.

Sample Response Rate

A survey's response rate refers to the proportion of eligible individuals in the sample who actually complete a survey. The response rate is an important indicator of the potential for bias in surveys because it is possible that individuals who choose not to complete a survey may differ from those who do in meaningful ways.

Figure 3 provides a graphic presentation of how the response rate for the Baseline Population Survey was calculated. As noted above, the final sample for the survey included 33,368 addresses. There was enough information to resolve whether or not an address was a residential address for 13,721 (41.1%) of the 33,368 addresses in the sample. Of these 13,721 addresses, 10,775 (78.5%) were determined to be residential dwelling units. The other 2,946 addresses were determined to be either non-residential (e.g., businesses, institutional addresses) or dormitories and other group living quarters. Of the identified residential addresses, 9,852 (91.4%) were screened to determine whether or not there was an adult resident. Of the screened households, 9,842 (99.9%) had an adult resident and therefore were eligible for the interview. Of these confirmed eligible respondents, 9,581 (97.3%) completed the survey.[4] Using these rates, the final response rate for the survey was 36.6%.

Figure 3 Response rate for SEIGMA Baseline General Population Survey (AAPOR RR3)



[4] During data cleaning, the SEIGMA research team identified three participants who were ineligible to complete the survey because they were under the age of 18. These surveys were removed from the dataset prior to analysis of the data.

The response rate in Figure 3 is one of six possible response rates that can be calculated for a survey and is designated by the American Association for Public Opinion Research (2011) as RR3. Information about the final disposition of the entire sample along with enough detail to allow technical readers to calculate alternate response rates is provided in Appendix A4.

A total of 40% of the questionnaires in the final sample were self-administered online, 52% were completed using the self-administered paper-and-pencil format, and 7% were completed by telephone interview. In total, 92% of the Baseline Population Survey questionnaires were self-administered. A total of 152 self-administered questionnaires and/or telephone interviews (1.6% of the completed interviews) were completed in Spanish. Additional information about the sample and the data collection process is provided in Appendix A3.

Weighting and Imputation

The ultimate goal of a survey is to generate unbiased estimates of behaviors in the target population. We followed a standard survey research approach to weight the data so as to align the sample more closely with the target population. The idea behind weighting can be simply illustrated. Suppose a target population has 50 men, and 50 women, but our sample includes 5 men and 10 women. Each man in the sample is assigned a weight of 10 so that the weighted total, 5*10, corresponds to the 50 men in the population. In contrast, we assign to each woman a weight of 5 so that the weighted total corresponds to the 50 women in the population. When weighting works perfectly, the weighted proportion of specific groups in the sample will match the proportion of those groups in the population exactly.

Baseline general population survey data were collected by NORC at the University of Chicago and provided to the SEIGMA research team with statistical weights. The weights accounted for the survey design, screening rates, completion rates, and post-stratification to the 2012 MA population based on four variables (region, age, gender, and race/ethnicity). These weights were used in the analysis of data included in the initial Baseline General Population Survey report (May 2015). Reviewers of the initial report questioned the appropriateness of the weights, and recommended that other variables, such as education, be included in the weights. The reviewers also recommended that raking be used in place of post-stratification as the final step in development of the weights. The weights described here are modified from the original weighting procedure completed by NORC. The modifications were made to address the recommendations of the reviewers, after discussions between NORC and the study investigators.

Summary of New Weighting Procedures

Data from the survey were weighted to account for the stratified survey design (wt1), differential screening rates associated with address characteristics (wt2), and response completion rates (wt3). These weights were constructed using the survey address frame and the new weights constructed by the SEIGMA research team used procedures nearly identical to those developed by NORC. The only difference in weight development to this point was accounting for the stratification of addresses by region.

Inverse probability sampling weights were used to account for the survey design (wt1). Addresses were grouped by variables available in the frame, with logistic regression analyses used to associate address characteristics with screening rates. Three frame variables (region, language, and address type) were selected as stratification variables to weight the data for differential screening rates. These weights were applied to all sample addresses, such that the sum of the weights totaled to the number of addresses in the population frame (wt2). A third adjustment was made for completion rates. Weights were developed using logistic regression analyses to associate address characteristics with completion rates and applied to screened addresses with a completed response. Variables in this adjustment included region, language, and last mode of contact (Web, SAQ, CATI). Completion rates were evaluated for a cross-classification of these variables, and used to adjust the screening

weights (wt3). These weighting processes were originally completed by NORC and subsequently confirmed by the SEIGMA research team.

Three additional steps were taken to create new weights. First, weights were added to account for the number of household members aged 18 and over (wt4). Next, 2012 Census estimates of the MA 18+ population from PUMS data were used to form 10 raking variables. An iterative raking process was used until marginal weights converged to PUMS totals (wt5). Finally, the impact of trimming the weight range was evaluated based on the accuracy of estimates of key variables. Weights were trimmed so that the minimum weight was 1/8th the average weight, and the maximum weight was 8 times the average weight (wt6). A detailed description of our data weighting procedures is included Appendix A3.

Table 1 on the following page compares key demographic characteristics of the sample, both weighted and unweighted, along with information about the Massachusetts adult population. This comparison is helpful to understand the impact of weighting on the results of the survey.

A comparison of percentages in the weighted column and the Massachusetts 2013 column in Table 1 shows a close match for gender and ethnicity. This is to be expected since these variables were used in the weighting. The comparison of percentages between columns for age is not as close, since the number of age groups used in weighting the sample was smaller than the number of age groups displayed in Table 1.[5] A comparison for income indicates a larger proportion of subjects with lower incomes in the weighted sample than occurs in the Massachusetts population. These observations suggest that the weighted survey results over-represent adults in lower income households in the population.

Item non-response was not a major issue in any of the data collection modes. Respondents were allowed to refuse to answer any question or to give a "don't know" response. The percentage of complete responses was extremely high for nearly all items. For interested readers, the response rate for individual questions by data collection mode is shown Table 34 in Appendix A5. Household income was the only measure that had a non-response rate greater than 10%. Although household income is a candidate for imputation, no imputation was done for this report.

[5] Four age categories were used in the weighting procedure (18-34, 35-49, 50-64, 65+).

Table 1 Demographics of baseline population survey sample

		Baseline sample						Massachusetts 2013[3]	
		Unweighted[1]			Weighted[2]				
		N	%	SE	N	%	SE	%	SE
Gender	Male	3,806	40.2	0.5	2,442,115	47.1	0.8	47.7	0.3
	Female	5,663	59.8	0.5	2,738,372	52.9	0.8	52.3	0.3
Age	18-20	100	1.1	0.1	211,399	4.3	0.5	5.9	0.1
	21-24	246	2.7	0.2	327,588	6.6	0.5	7.3	0.1
	25-34	1,000	11.0	0.3	908,819	18.3	0.7	17.1	0.2
	35-54	2,904	31.9	0.5	1,714,763	34.5	0.7	34.7	0.2
	55-64	1,982	21.8	0.4	871,326	17.6	0.5	16.3	0.2
	65-79	2,095	23.0	0.4	660,574	13.3	0.4	13.4	0.2
	80+	778	8.5	0.3	270,293	5.4	0.3	5.4	0.1
Ethnicity	Hispanic	483	5.2	0.2	433,811	8.6	0.5	9.0	0.2
	White alone	7,824	84.6	0.4	3,847,226	76.2	0.7	77.1	0.2
	Black alone	304	3.3	0.2	296,522	5.9	0.4	6.1	0.1
	Asian alone	359	3.9	0.2	278,857	5.5	0.4	5.7	0.1
	Some other race alone	81	0.9	0.1	48,598	1.0	0.1	0.7	0.0
	Two or more races	199	2.2	0.2	144,353	2.9	0.3	1.4	0.1
Education	Less than high school	398	4.2	0.2	454,695	8.9	0.6	10.1	0.2
	HS or GED	1,322	14.1	0.4	1,354,072	26.4	0.8	26.2	0.2
	Some college	2,540	27.0	0.5	1,176,659	22.9	0.6	26.8	0.2
	BA	2,460	26.2	0.5	1,332,864	26.0	0.6	21.2	0.2
	MS or professional degree	2,117	22.5	0.4	643,230	12.5	0.3	13.4	0.2
	PHD	557	5.9	0.2	173,441	3.4	0.2	2.3	0.1
Income	Less than $15,000	847	10.3	0.3	667,399	14.9	0.7	7.4	0.1
	$15,000 - <$30,000	1,033	12.6	0.4	643,442	14.3	0.6	9.8	0.2
	$30,000 - <$50,000	1,327	16.2	0.4	685,561	15.3	0.6	13.2	0.2
	$50,000 - <$100,000	2,479	30.3	0.5	1,247,201	27.8	0.7	30.2	0.2
	$100,000 - <$150,000	1,372	16.8	0.4	719,181	16.0	0.6	19.1	0.2
	$150,000 or more	1,131	13.8	0.4	525,243	11.7	0.4	20.4	0.2

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Source: U.S. Census Bureau, 2013 American Community Survey PUMS

Data Cleaning and Statistical Analysis

NORC delivered the data to the SEIGMA research team via a secure file transfer protocol (SFTP). The dataset contained 33,368 records and included both complete and incomplete questionnaire responses. After review, incompletes were separated from the completed surveys and a partial dataset of incomplete surveys was created (n=23,787). This dataset will be examined at a later date to more carefully assess the characteristics of the overall address-based sample in relation to the achieved sample for the survey. A second dataset of complete surveys (n=9,581) was created, carefully reviewed and cleaned. As noted above, the data cleaning process identified three participants who were ineligible to complete the survey because of their age and these surveys were removed from the complete dataset. Several constructed variables were then created and added to the final dataset (n=9,578). In addition to data cleaning, the use of self-administered questionnaires meant that extensive back-coding of open-ended responses was required.

Statistical analysis of survey data where respondents have unequal weights is more complex than standard statistical analysis due to the need to properly account for the weights in estimating parameters and their variance. Special software and statistics have been developed for such situations. The Baseline General Population Survey data were analyzed using SAS-callable SUDAAN, release 11.0.1. SUDAAN enables appropriate calculation of variance estimations for data from surveys using complex sampling strategies. When exact expressions for the variance were not possible, the Taylor series linearization method was used combined with variance estimation formulas specific to the sample design.

Chi-square analysis and other nonparametric techniques were used to test for statistical significance in the chapters of the report addressing gambling behavior, problem gambling prevalence and correlates of problem gambling. Descriptive statistics across the baseline survey are presented in the chapters of the report that follow.

Reporting

In reporting results, we have used several conventions to make the interpretation of our results easier. For example, we adopted the approach used by the National Center for Health Statistics to identify and flag all estimates with a relative standard error (RSE) greater than 30% as not meeting standards for reliability. Standard error (SE) measures the extent to which a survey estimate is likely to deviate from the true value in the population; relative standard error is expressed as a percentage of the survey estimate. Within the report, estimates with RSE greater than 30% are suppressed and these cells are flagged as having insufficient information (NSF). In appendices to the report, estimates with RSE greater than 30% are flagged with an asterisk to allow readers to judge these data for themselves. Another measure taken to enhance confidence in the results of the survey was to suppress values in any cells that contained less than five respondents. This was done in both the body of the report and in the appendices.

We have also chosen to present many of our results in graphic form, using bar charts and forest plots. Bar charts are used when the variable under consideration is ordinal so that the data is displayed in a given order. Forest plots are used to display point estimates and 95% confidence intervals for a binary variable when respondents have been divided into different groups, such as by gender or age. We have not included the categories of “Don’t Know,” “Refused,” and “Other” in order to make the graphics easier to read. We have included all of the data in tables in the various appendices for readers who prefer a tabular format. In the text of the report, we have focused on six major demographic groups (i.e., gender, age, race/ethnicity, education, employment, annual household income). The tables in the appendices include additional demographic groups. Finally, we discuss differences between groups only when the overall test for group differences is statistically significant based on a chi-square or t-test with alpha of 0.05. The p-values for such tests are presented in the tables accompanying the text.

CHAPTER 3:

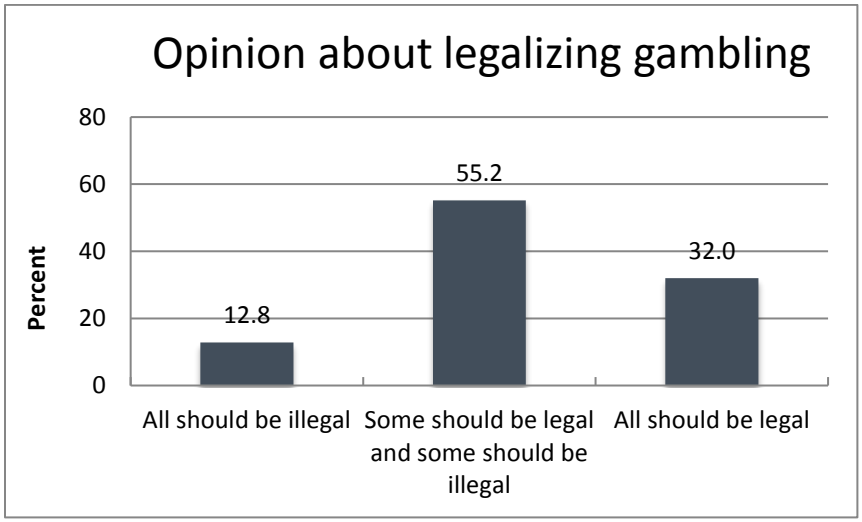
Attitudes toward Gambling in Massachusetts

Before examining gambling participation in the Massachusetts population, it is helpful to consider differences in attitudes toward gambling in Massachusetts. Respondents in the Baseline General Population Survey were asked several questions about their views of gambling. Questions assessed respondents' beliefs about legalized gambling in general, the availability of gambling in Massachusetts, the likely impact of expanded gaming in Massachusetts and the likely impact of expanded gaming in their own community, the overall benefit or harm of gambling in society, and the morality of gambling.

Attitudes about Gambling Legalization

The majority of Massachusetts residents (55.2%) believed that some forms of gambling should be legal and some should be illegal, with only a minority reporting that all forms should be legal (32.0%) or all forms should be illegal (12.8%).

Figure 4 Opinion about legalized gambling



Note: This information is presented by demographics in Table 35 in Appendix C

Respondents who thought some but not all forms of gambling should be illegal were asked what types of gambling should be illegal. The most frequent response was that any gambling activity that entailed harm to animals or humans should be illegal (18.3%) followed by dog racing (12.6%), horse racing (10.4%), "other" types of gambling (10.2%) and sports betting (9.5%).

Attitudes toward legalized gambling differed significantly across important subgroups in the Massachusetts population. Women in Massachusetts were significantly less likely than men to believe that all forms of gambling should be legal. Adults aged 65 and over were significantly more likely than adults aged 25 to 54 to believe that all forms of gambling should be illegal. Hispanics, Blacks and Asians were more likely than Whites to believe that all forms of gambling should be illegal. Individuals with less than a high school education were almost twice as likely as individuals with higher levels of education to believe that all gambling should be illegal.

Beliefs about Gambling Availability

The majority of Massachusetts residents (61.3%) also believed that the current availability of gambling in Massachusetts was fine, with 23.1% reporting that it was not available enough, and 15.6% reporting that it was too widely available. This question assessed people's beliefs about gambling availability after the Expanded Gaming Act was passed but before any casinos had become operational in Massachusetts. It will be interesting to see if and how this attitude changes over the coming years.

Figure 5 Beliefs about gambling availability in Massachusetts

Note: This information is presented by demographics in Table 36 in Appendix C

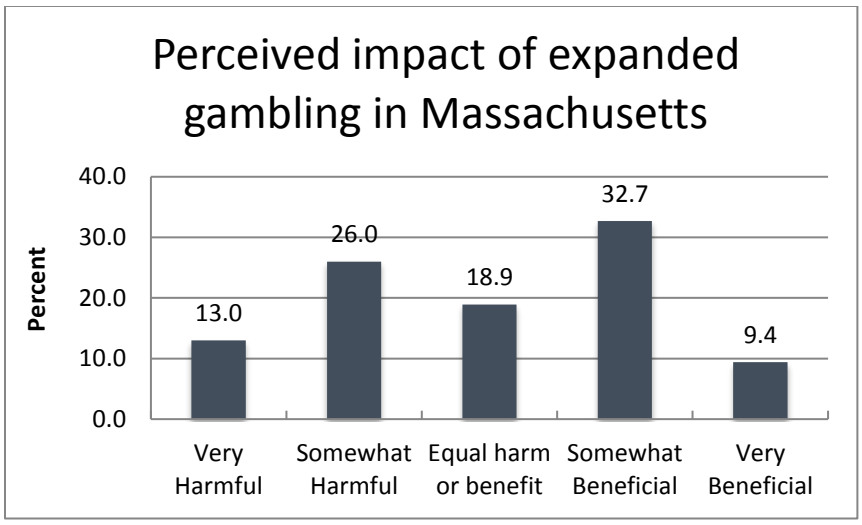
Beliefs about the availability of gambling in Massachusetts also differed significantly across some subgroups in the Massachusetts population. Men were significantly more likely than women to believe that gambling is not available enough in Massachusetts. Adults aged 25 to 34 were significantly less likely than older adults to say that gambling is too widely available in Massachusetts. Hispanics and Blacks were significantly more likely than Whites to believe that gambling is too widely available in Massachusetts.

Perceived Impact of Expanded Gambling in Massachusetts

Massachusetts residents had mixed opinions about the impact of the planned introduction of casinos and a slot parlor in the state, with almost equal numbers of people believing it would be harmful (39.0%) and beneficial (42.1%). Figure 6 on the following page presents these results for the entire sample.

Men were significantly more likely to see this expansion as beneficial while women were significantly more likely to see it as harmful. Blacks were significantly more likely than Hispanics or Asians to see the expansion of gambling in Massachusetts as beneficial. Education and employment status were also linked to views about gambling expansion in Massachusetts. Respondents with less education were significantly more likely to view gambling expansion as beneficial while those with graduate degrees were more likely to see gambling expansion as harmful. Similarly, unemployed individuals were significantly more likely to view gambling expansion as beneficial compared with homemakers, students, and retired individuals. Additional results are available in Table 37 in Appendix C. Table 38 in Appendix C presents the results with the responses grouped into three rather than five options.

Figure 6 Perceived impact of expanded gambling in Massachusetts



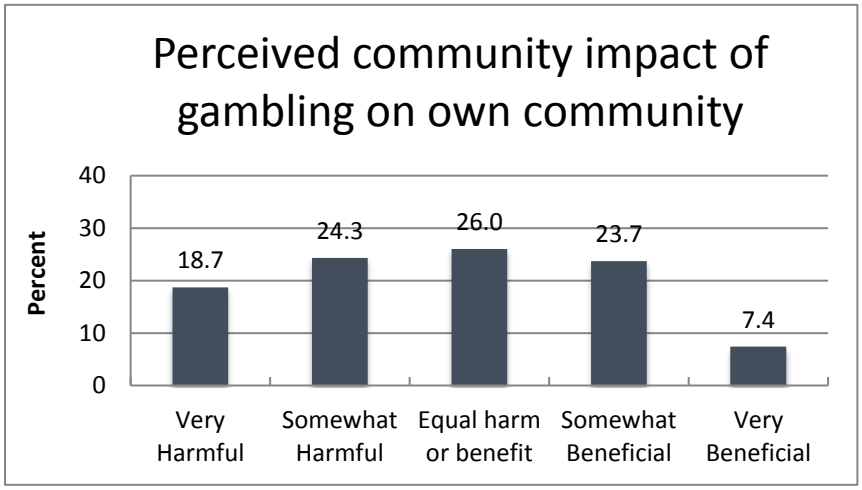
Note: This information is presented by demographics in Table 37 in Appendix C

Perceived Impact of a New Casino or Slot Parlor in One's Own Community

People viewed the impact of having a new casino or slot parlor in their own community somewhat more negatively than they perceived the general impact for Massachusetts with 43.0% believing it would be harmful compared to 31.1% who believe it would be beneficial. Figure 7 on the following page presents these results for the entire sample.

Men were significantly more likely to see this as somewhat beneficial while women were significantly more likely to see it as somewhat harmful. Blacks were significantly more likely than Whites to view the impact of gambling expansion on their own communities as very beneficial while Asians were significantly more likely than Blacks or Whites to see the impact of expanded gaming on their communities as somewhat or very harmful. Table 39 in Appendix C contains a complete table of results. Table 40 in Appendix C presents the results with the responses grouped into three rather than five options.

Figure 7 Perceived impact of gambling on own community

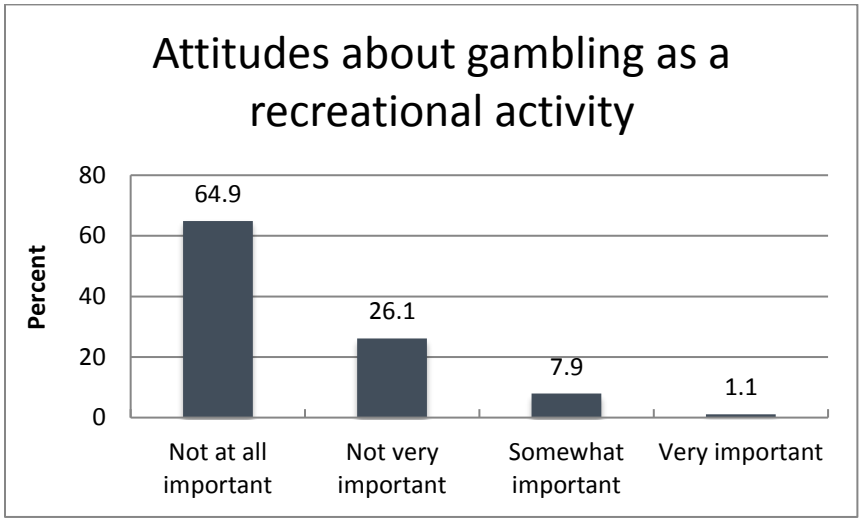


Note: This information is presented by demographics in Table 39 in Appendix C

Attitudes about the Importance of Gambling as a Recreational Activity

When respondents were asked to rate the importance of gambling to them as a recreational activity, only 9.0% of respondents overall indicated that gambling was somewhat or very important to them as a recreational activity. One quarter (26.1%) of respondents indicated that gambling was not very important and 64.9% of respondents indicated that gambling was not at all important to them as a recreational activity. Men were significantly more likely than women to indicate that gambling was somewhat important to them as a recreational activity.

Figure 8 Attitudes about gambling as a recreational activity



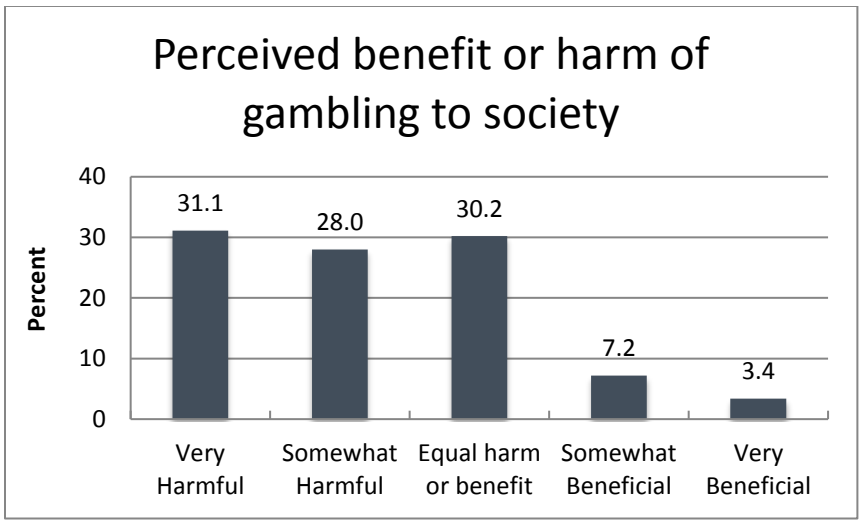
Note: This information is presented by demographics in Table 41 in Appendix C

Respondents were also asked whether gambling had replaced other recreational activities in the last five years. Only 1.8% of respondents agreed that gambling had replaced other recreational activities in recent years, with men significantly more likely than women to indicate that this was the case. This question is likely to become more salient once casinos have been introduced in Massachusetts. Table 42 in Appendix C provides additional results.

Perceived Benefit or Harm of Gambling to Society

All respondents were asked the following question: "Which best describes your belief about the benefit or harm that gambling has for society?" with possible responses that the benefits somewhat or far outweigh the harm, the benefits are about equal to the harm, and the harm somewhat or far outweighs the benefit. As seen below, there was a range of opinion within Massachusetts concerning the relative harm versus benefit of gambling to society. That said, it is clear that many more people believed the harm outweighs the benefits (59.1%) than believed the benefits outweigh the harm (10.6%). Furthermore, this largely negative sentiment was universal across all demographic groups (i.e., gender, age, race/ethnicity, education, employment, income, marital status).

Figure 9 Perceived benefit or harm of gambling to society



Note: This information is presented by demographics in Table 43 in Appendix C

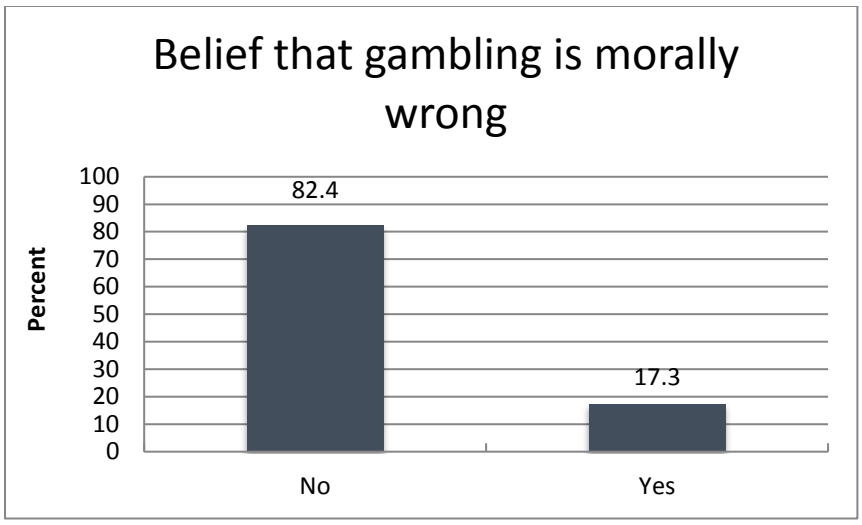
As detailed in Table 43 in Appendix C, views about the overall benefit or harm of gambling to society nonetheless varied somewhat across subgroups in the Massachusetts population. Women were significantly more likely to report that the harm from gambling outweighs the benefit compared to men. Views about the relative harm versus benefit of gambling also differed by race and ethnicity with Hispanics and Asians significantly more likely than Whites to believe that the harm of gambling far outweighs the benefit. Attitudes about the overall benefit or harm of gambling in society also differed significantly by education with greater disapproval among individuals with a Bachelor's degree or higher compared to individuals with less education. Table 44 in Appendix C presents the results with the responses grouped into three rather than five options.

Perceived Morality of Gambling

Lastly, all respondents were asked if they believed gambling is morally wrong. As shown below, there was greater uniformity concerning the morality of gambling compared with opinions about the benefit or harm of gambling to society; 82.4% of the Massachusetts adult population did not believe gambling to be morally wrong and only 17.3% considered it immoral. Figure 10 presents these results for the entire sample.

Here again, while this sentiment was universal across all major demographic groups (i.e., gender, age, race/ethnicity, education, employment, income, marital status), there was variation among demographic groups in the strength of this belief. In Massachusetts, belief that gambling is morally wrong was significantly stronger among non-Whites compared with Whites, among those with a high school diploma or lower compared with more educated groups, among individuals with an annual household income of less than $50,000 compared with those with a higher household income, and among disabled individuals compared with other employment groups.

Figure 10 Perceived morality of gambling



Note: This information is presented by demographics in Table 45 in Appendix C

Conclusion

In this chapter of the report, we have presented information about attitudes toward gambling in Massachusetts. Taken together, these results paint an incongruous picture of gambling attitudes in the Commonwealth; while most people support some legalization, they have mixed views about the benefits and harms of gambling to their communities, the state, and society at large. It will be interesting to see whether and how these attitudes change after the state's new gambling facilities open.

It is also interesting to consider these findings in light of the referendum to repeal the Expanded Gaming Act that took place on November 4, 2014. In that referendum, 40% of voters voted to repeal the law while 60% voted to maintain it (Vaccaro, 2014a). These referendum results are in direct contrast to respondents' perceptions about the overall impact of having three casinos and one slots parlor in the state, with 59.1% of respondents perceiving the impact to be somewhat or very harmful and 40.8% of respondents perceiving the impact to be neutral, beneficial, or very beneficial. It is also interesting that respondents view the impact of having a new casino or slot parlor in their own community somewhat more negatively than they perceive the general impact for Massachusetts. This same phenomenon, often labeled the "not in my backyard" effect, was seen in many of the individual Massachusetts municipalities that held elections to determine whether or not they would host one of the new gaming facilities (Vaccaro, 2014b). For example, residents of Milford voted overwhelmingly against hosting a Foxwoods casino in their town in a local referendum one year before the statewide referendum in 2014 when 67.5% of Milford residents voted against a repeal of the Expanded Gaming Act (Arsenault & Ishkanian, 2013).

The information presented in this chapter of the report is based on univariate and bivariate analyses of the survey data. Further multivariate analyses of these data are planned to assess relationships between attitudes toward gambling and participation in specific gambling activities. In the next chapter of the report, we present detailed information about gambling involvement in Massachusetts

CHAPTER 4:

Gambling in Massachusetts

This chapter examines gambling participation among adults in Massachusetts. To assess the full range of gambling available to Massachusetts residents, the survey included questions about 11 different activities. At the beginning of the survey, all respondents were given the same definition of gambling to assure comprehension and comparability of the results. Respondents were told:

> *We define gambling as betting money or material goods on an event with an uncertain outcome in the hopes of winning additional money or material goods. It includes things such as lottery tickets, scratch tickets, bingo, betting against a friend on a game of skill or chance, betting on horse racing or sports, investing in high risk stocks, etc.*

Respondents were then asked detailed questions about their participation in specific gambling activities, including whether they had:

- Purchased lottery tickets such as Megabucks, Powerball, Lucky for Life, or Mass Cash
- Purchased instant tickets or pull tabs
- Purchased daily lottery games such as Keno or Jackpot Poker
- Purchased raffle tickets
- Bet money on sporting events (including sports pools)
- Gone to a bingo hall to gamble
- Gambled at a casino, racino, or slots parlor outside of Massachusetts
- Bet on a horse race, at a racetrack or at an off-track site
- Bet money against other people on things such as card games, golf, pool, darts, bowling, video games, board games, or poker outside of a casino
- Purchased high risk stocks, options or futures, or day traded on the stock market
- Gambled online on things such as playing poker, buying lottery tickets, betting on sports, bingo, slots or casino table games for money, or playing interactive games for money

Questions about each activity covered past-year participation, frequency of participation, and amount spent in a typical month. In assessing participation in casino gambling, additional questions assessed whether respondents spent money on non-gambling activities, and which casino they went to most often. In assessing horse race betting, respondents were asked about the racetrack where they went most often. Only past-year participation and typical monthly spending on online gambling were assessed; information was not obtained regarding frequency of participation in online gambling.

Gambling Participation

A 2013 survey found that 77% of U.S. residents aged 18 or older had gambled in the past year, down from 82% about a decade earlier (Welte, Barnes, Tidwell, Hoffman, & Wieczorek, 2015). In the present study, 73.1% of Massachusetts respondents acknowledged participating in one or more gambling activities in the past year.

Table 2 presents past-year participation for all of the types of gambling included in the Massachusetts survey (except high-risk stocks, which is not universally viewed as a form of gambling). In addition to summing yearly participation in all forms of gambling, the table provides a sum of participation in the three major forms of lottery in Massachusetts: traditional lotteries, instant games (scratch tickets and pull tabs), and daily lottery games (Keno, Jackpot Poker). The table shows that past-year participation among Massachusetts adults was highest for lottery games, raffles and casino gambling. Over half of Massachusetts adults (58.1%) purchased traditional lottery tickets and about one third (37.2%) purchased instant tickets. Participation in daily lottery games was substantially lower. One in three Massachusetts adults (31.5%) purchased raffle tickets in the past year; two in ten Massachusetts adults (21.5%) gambled at a casino in the past year; and one in ten Massachusetts adults bet on sports or against other people in private wagers. Past-year participation rates for horse race betting, bingo, and online gambling were even lower.

Table 2 Percentage of past-year gambling participation by gambling activity

	Unweighted N[1]	Weighted N[2]	Past-year participation %[3]	95% CI[3]
All gambling	9,537	5,220,404	73.1	(71.8, 74.4)
All lottery	9,521	5,218,127	61.7	(60.2, 63.1)
Traditional	9,555	5,234,836	58.1	(56.6, 59.5)
Instant games	9,515	5,210,024	37.2	(35.8, 38.7)
Daily games	9,511	5,209,060	14.1	(13.1, 15.2)
Raffles	9,494	5,194,098	31.5	(30.2, 32.8)
Casino	9,028	4,891,337	21.5	(20.3, 22.7)
Sports betting	9,536	5,224,027	12.6	(11.6, 13.7)
Private wagering	9,488	5,191,930	11.1	(10.1, 12.2)
Horse racing	9,542	5,214,938	3.4	(2.9, 4.0)
Bingo	9,525	5,214,786	3.4	(2.9, 4.0)
Online	9,461	5,174,249	1.6	(1.2, 2.1)

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N

Information on lottery participation from the baseline survey can be compared with tracking data collected for the Massachusetts Lottery. The most recently available lottery tracking survey collected information from 1,001 Massachusetts adults (18+) through an online panel. This survey found that 64% of Massachusetts adults played the lottery at least once a year and 20% played the lottery once a week or more often (SocialSphere, 2011). This compares to 61.7% of our respondents who played the lottery at least once in the past year and 15.9% of our respondents who played the lottery once a week or more often (see Table 5 later in this chapter).

Information on gambling participation from the baseline survey can also be compared to data from the 2013 BRFSS. The 2013 BRFSS in Massachusetts included three gambling participation questions, assessing respondents' past-year participation in lottery games, casino gambling, and "other" gambling activities. While lottery participation was quite similar across the two surveys, endorsement rates for casino and "other" gambling in the 2013 BRFSS were much lower than rates identified in the SEIGMA baseline survey. Appendix G of this report provides an analysis of the methodological similarities and differences between the 2013 BRFSS and SEIGMA Baseline General Population Survey as well as endorsement rates for similar items in the two surveys.

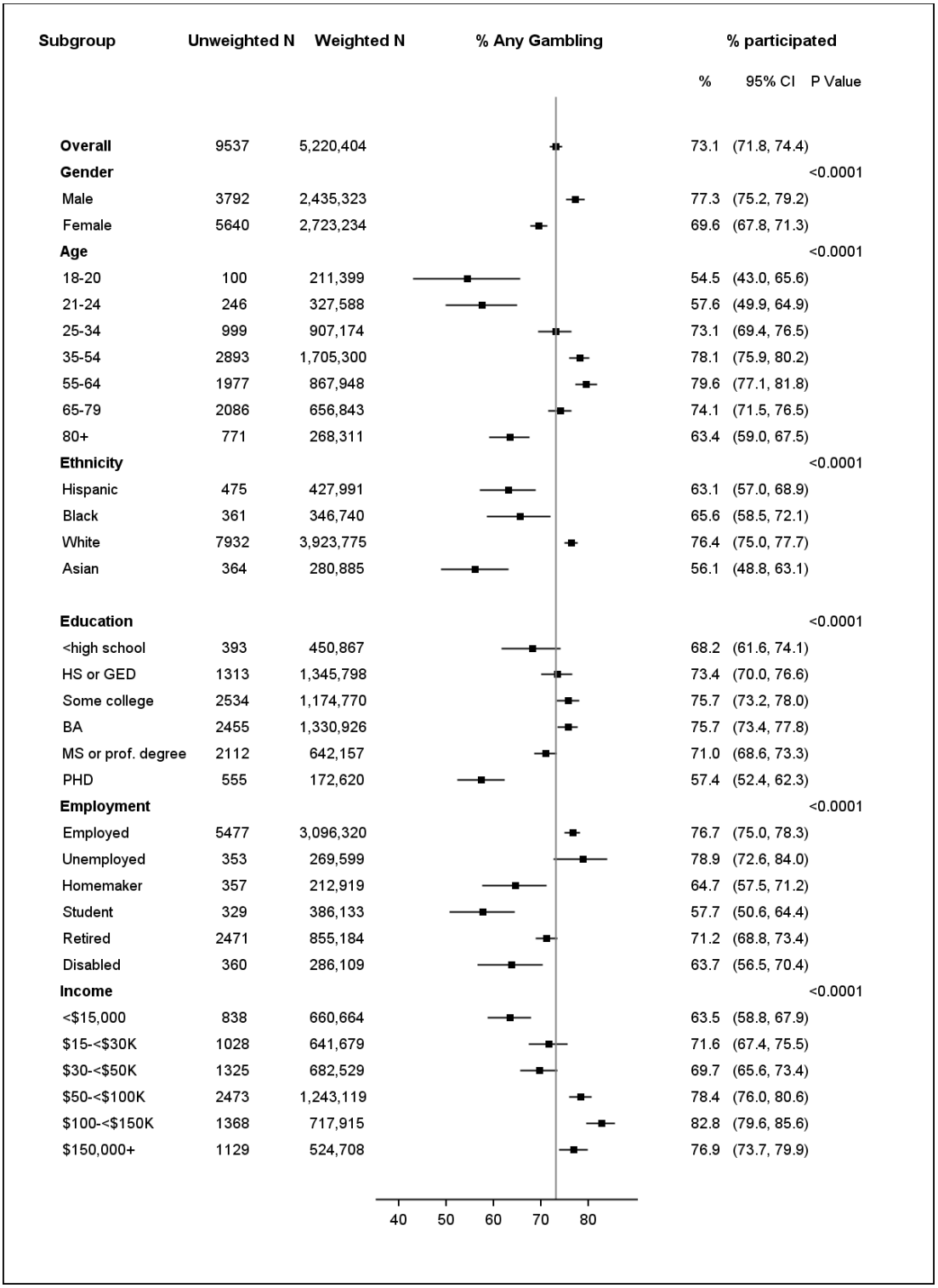
It is interesting that despite not having any casinos, the past-year casino participation rate in Massachusetts is similar to participation rates in some other U.S. jurisdictions. For example, in Maryland in 2010 (before that state had its own casinos but after casinos had opened in neighboring Delaware and Pennsylvania), the past-year casino participation rate was 27.3% (Shinogle et al., 2011); in Ohio in 2012 when two of the state's four casinos had opened, the past-year casino participation rate was 26.8% (Massatti, Starr, Frohnapfel-Hasson, & Martt, 2015). Past-year casino gambling rates are higher in other U.S. states compared with Massachusetts. For example, 32.9% of Iowa adults had gambled at a casino in the past year in 2011; this increased to 37.9% in 2013 (Gonnerman & Lutz, 2011; Lutz & Park, 2014). In Connecticut in 2009, the past-year casino participation rate was 35.6% (Spectrum Gaming Group, 2009). It is possible that past-year casino gambling among Massachusetts adults could increase to match the rate in this neighboring state. On another front, despite concerns about offshore online gambling (which is both unregulated and a loss to the Massachusetts economy), it is of note that only 1.6% of Massachusetts adults engaged in this activity in the past year, making it the least common form of gambling among those assessed in the survey.

Figure 11 on the next page presents information about overall past-year gambling participation among key demographic groups in the population. As a reminder, this figure is a forest plot with the participation rate for the entire sample presented at the top of the graph and also indicated by the vertical line. Point estimates and confidence intervals around past-year participation are presented for each subgroup and p-values showing statistically significant differences are presented for each group. Differences are shown graphically in the plot as well as numerically in the right-hand column.

This figure shows that there were significant differences in overall gambling participation associated with gender, age and race/ethnicity. The plot shows that the past-year gambling participation rate for men (77.3%) was significantly higher than the rate for women (69.6%). Rates also differ significantly by age group. Adults aged 25 to 79 were significantly more likely to have gambled in the past year than those in any other age group. The plot also shows that past-year gambling participation was significantly higher among Whites compared to other racial and ethnic groups in Massachusetts.

Individuals with a doctoral degree were significantly less likely to have gambled in the past year compared with all other groups with less education except individuals with less than a high school diploma. Students were significantly less likely to have gambled in the past year than employed, unemployed, and retired individuals. Those with annual household incomes between $50,000 and $150,000 were significantly more likely to have gambled in the past year compared with individuals with lower annual household incomes (less than $50,000).

Figure 11 Past-year gambling participation by demographics



Note: Unweighted N refers to the total number of respondents who answered this question
Note: Weighted N is the total number of respondents who answered the question weighted to the MA population
Note: Vertical reference line represents overall % participated
Note: This information is presented in detail in Table 46 in Appendix D

Demographics of Specific Gambling Activities

There were important differences in the demographic characteristics of individuals who engaged in specific gambling activities in the past year. This section of the report summarizes information presented in detail in Table 47 - Table 58 in Appendix D.

Lottery

Although respondents who played the lottery in the past year were quite similar to the general population of Massachusetts, there were nevertheless some interesting differences. Males and adults aged 35 to 64 were significantly more likely to be past-year lottery players in Massachusetts. Asians were significantly less likely to be past-year lottery players compared to other racial and ethnic groups. Respondents who attained a doctoral degree were less likely to be past-year lottery players as were students (see Figure 12).

Respondents who played the lottery in the past year participated in an average of 1.1 other gambling activities in the past year (see Table 48 in Appendix D). The gambling activities that past-year lottery players were most likely to have done included purchasing raffles (40.3%) and going to a casino (29.8%).

When it comes to specific lottery games, there were differences in the demographic characteristics of these players. These differences are detailed in Table 49-Table 51 in Appendix D. For example, men were significantly more likely than women to have played each of the specific lottery games. Adults aged 35 to 79 were significantly more likely than younger (18-34) or older (80+) adults to have played traditional lottery. Adults aged 35 to 79 were also significantly more likely than younger (18-34) adults to have played instant lottery games. Adults aged 55 to 64 were significantly more likely than younger (21-34) adults or older (65 years or older) adults to have played daily lottery games. Asians were significantly less likely than other racial or ethnic groups to play instant or daily lottery games.

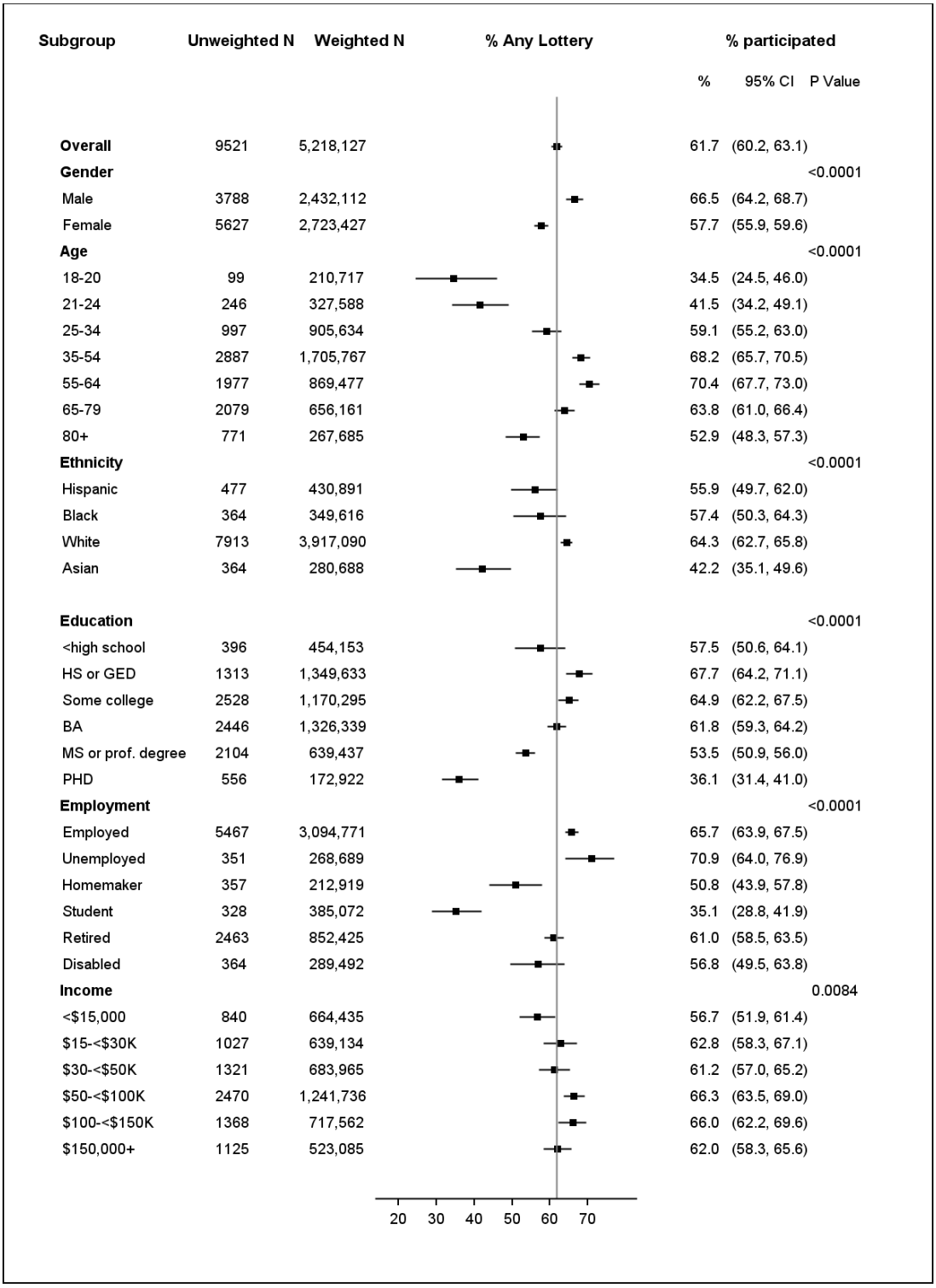
Education was also associated with preferences in lottery games with individuals having less education (HS/GED or some college) significantly more likely to have played instant lottery games than those with more education (Bachelor's degree or higher) (see Table 50 in Appendix D). Employed and unemployed individuals were significantly more likely than the homemakers, disabled, or students to have played traditional lottery games while unemployed individuals were significantly more likely than employed individuals, homemakers, students and retired to have played daily lottery games (see Table 49 and Table 51 in Appendix D).

Raffles

In contrast to many other gambling activities, there was no gender difference in purchase of raffle tickets in the past year (see Figure 13). Adults aged 35 to 64 were significantly more likely than adults 18 to 34 or 80 and older to have purchased raffle tickets in the past year. Whites were significantly more likely to have purchased raffle tickets in the past year compared to other racial and ethnic groups in Massachusetts. Individuals with a high school diploma or less were less likely to have purchased raffle tickets in the past year compared with those with a Bachelor's or Master's degree. Employed and retired individuals were significantly more likely than students and the disabled to have purchased raffle tickets. Those with annual household incomes of $50,000 or higher were significantly more likely to have purchased raffle tickets in the past year compared with individuals with lower incomes.

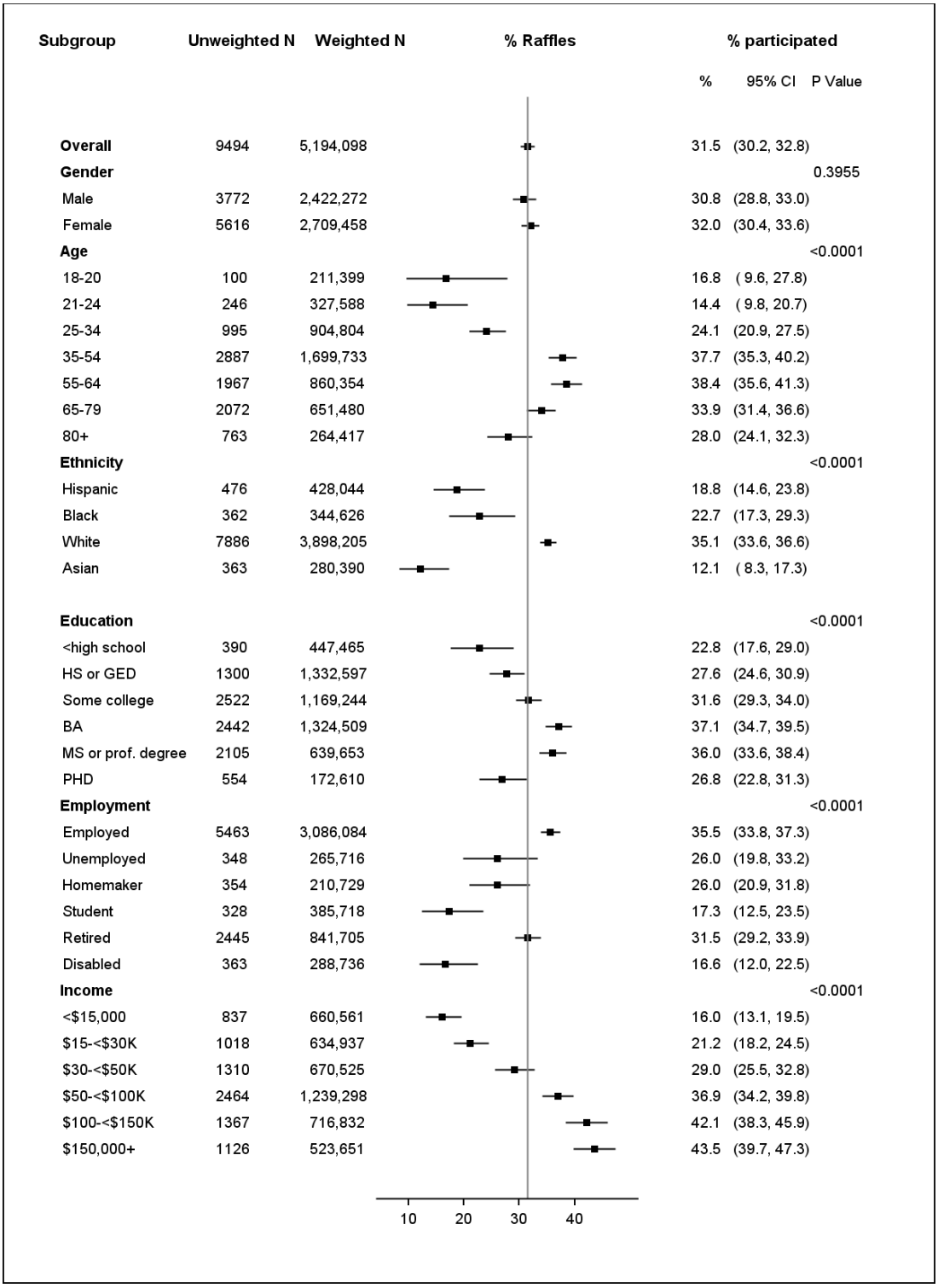
Respondents who purchased raffle tickets in the past year participated in an average of 1.6 other gambling activities in the past year (see Table 48 in Appendix D). The gambling activities that past-year raffle participants were most likely to have participated in include playing the lottery (78.6%) and going to a casino (28.7%).

Figure 12 Past-year lottery participation by demographics



Note: Unweighted N refers to the total number of respondents who answered this question
Note: Weighted N is the total number of respondents who answered the question weighted to the MA population
Note: Vertical reference line represents overall % participated
Note: This information is presented in detail in Table 47 in Appendix D

Figure 13 Past-year raffle participation by demographics



Note: Unweighted N refers to the total number of respondents who answered this question
Note: Weighted N is the total number of respondents who answered the question weighted to the MA population
Note: Vertical reference line represents overall % participated
Note: This information is presented in detail in Table 52 in Appendix D

Casino

Males were significantly more likely than females to have gambled at a casino in the past year and young (25-34) adults were significantly more likely than other age groups to have gambled at a casino (with the exception of those aged 55-64) (see Figure 14). Respondents who did not graduate from high school and respondents who received a doctoral degree were significantly less likely to have gambled at a casino in the past year compared to respondents who had attended some college or attained a Bachelor's degree. Employed individuals were significantly more likely to have gambled at a casino compared to homemakers, students, or the disabled. Finally, respondents with annual household incomes of $50,000 or more were significantly more likely to have gambled at a casino in the past year compared with those with household incomes of less than $15,000.

Respondents who had gambled at a casino in the past year participated in an average of 1.9 other gambling activities in the past year (see Table 48 in Appendix D). The gambling activities that past-year casino gamblers were most likely to have engaged in were playing the lottery (86.0%) and purchasing raffles (43.0%).

When asked which state they most often went to for casino gambling, the following table shows that the majority of respondents (66.3%) reported going to Connecticut. Another 11.9% reported going to Rhode Island and 7.2% reported going to Nevada to gamble at a casino. Respondents who had gambled at a casino in the past year were much less likely to indicate that they had gone to other casino destinations in the Northeast, including New Jersey and New York.

Table 3 States in which respondents most often visited casinos

State	Unweighted N[1]	Weighted N[2]	%[3]	95% CI[3]
Connecticut	**1,236**	**674,315**	**66.3**	**(63.2, 69.3)**
Rhode Island	**169**	**120,865**	**11.9**	**(9.8, 14.3)**
Nevada	**127**	**73,583**	**7.2**	**(5.7, 9.2)**
New Jersey	**30**	**18,606**	**1.8**	**(1.2, 2.8)**
New York	**49**	**16,522**	**1.6**	**(1.1, 2.4)**
Other	**184**	**112,626**	**11.1**	**(9.2, 13.2)**

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N

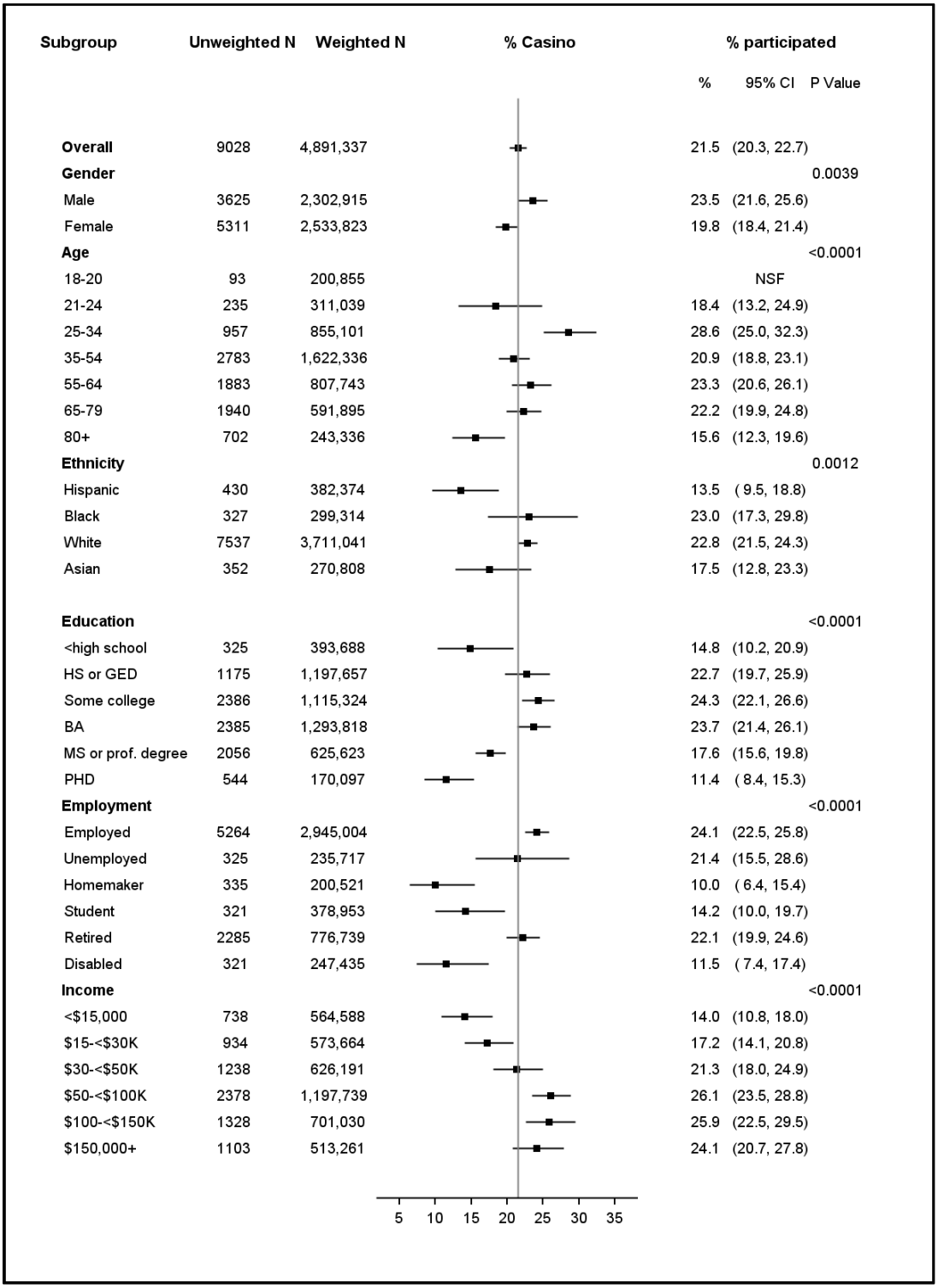
When asked which specific casino they visited most often, the following table shows that 43.0% of respondents who had gambled at a casino in the past year indicated that they went to Foxwoods and another 25.0% said that they went to Mohegan Sun. Respondents who had gambled at a casino in the past year were much less likely to indicate that they had visited casinos elsewhere in the Northeast or in Nevada.

Table 4 Specific casinos visited

Venue	Unweighted N[1]	Weighted N[2]	%[3]	95% CI[3]
Foxwoods (Ledyard, CT)	701	421,584	43.0	(39.7, 46.3)
Mohegan Sun (Uncasville, CT)	502	245,210	25.0	(22.3, 28.0)
Twin River (Lincoln, RI)	139	97,535	9.9	(8.0, 12.2)
Nevada Casino	96	60,789	6.2	(4.7, 8.2)
Saratoga Casino and Raceway (Saratoga, NY)	29	5,588	0.6	(0.4, 0.8)
Other	245	140,707	14.4	(12.3, 16.6)

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N

Figure 14 Past-year casino participation by demographics



Note: Unweighted N refers to the total number of respondents who answered this question
Note: Weighted N is the total number of respondents who answered the question weighted to the MA population
Note: Vertical reference line represents overall % participated
Note: Insufficient Information (NSF) indicates estimates are unreliable, relative standard error > 30%
Note: This information is presented in detail in Table 53 in Appendix D

Sports Betting

Male respondents were more than twice as likely to have bet on sports in the past year compared to females. Adults aged 25 to 54 were more likely to have bet on sports in the past year compared to adults aged 65 and older (see Figure 15). Respondents with a Bachelor's or Master's degree were more likely to have bet on sports compared with those with less education (less than high school or some college) and those with doctorates. Homemakers, disabled, and retired individuals were less likely to bet on sports, as were respondents with annual household incomes less than $50,000 compared to those who made more than $100,000.

Past-year sports bettors participated in an average of 2.5 other gambling activities in the past year (see Table 48 in Appendix D). The gambling activities that past-year sports bettors were most likely to have done include playing the lottery (82.6%) and purchasing raffles (55.4%).

Private Wagering

Respondents who wagered privately in the past year were demographically similar to past-year sports bettors. Male respondents were three times more likely to wager privately than females and young (18-34) adults were more likely to wager privately compared to adults older than 55 (see Figure 16). In contrast to sports betting, students were more likely than the employed or retired to wager privately. However, individuals with higher annual household income were also more likely to have wagered privately in the past year.

Respondents who wagered privately in the past year participated in an average of 2.3 other gambling activities in the same timeframe (see Table 48 in Appendix D). The gambling activities that past-year private gamblers were most likely to have done include playing the lottery (76.7%) and purchasing raffles (50.1%). Other gambling activities that respondents who wagered privately in the past year were likely to have done include wagering on sports (47.0%) and going to a casino (38.1%).

Horseracing

Like sports bettors and private gamblers, males were significantly more likely to be past-year horse race bettors than females (see Figure 17). Respondents with an annual household income of $50,000 or more were significantly more likely to be horse race bettors than those with an annual household income of $15,000 to $30,000.

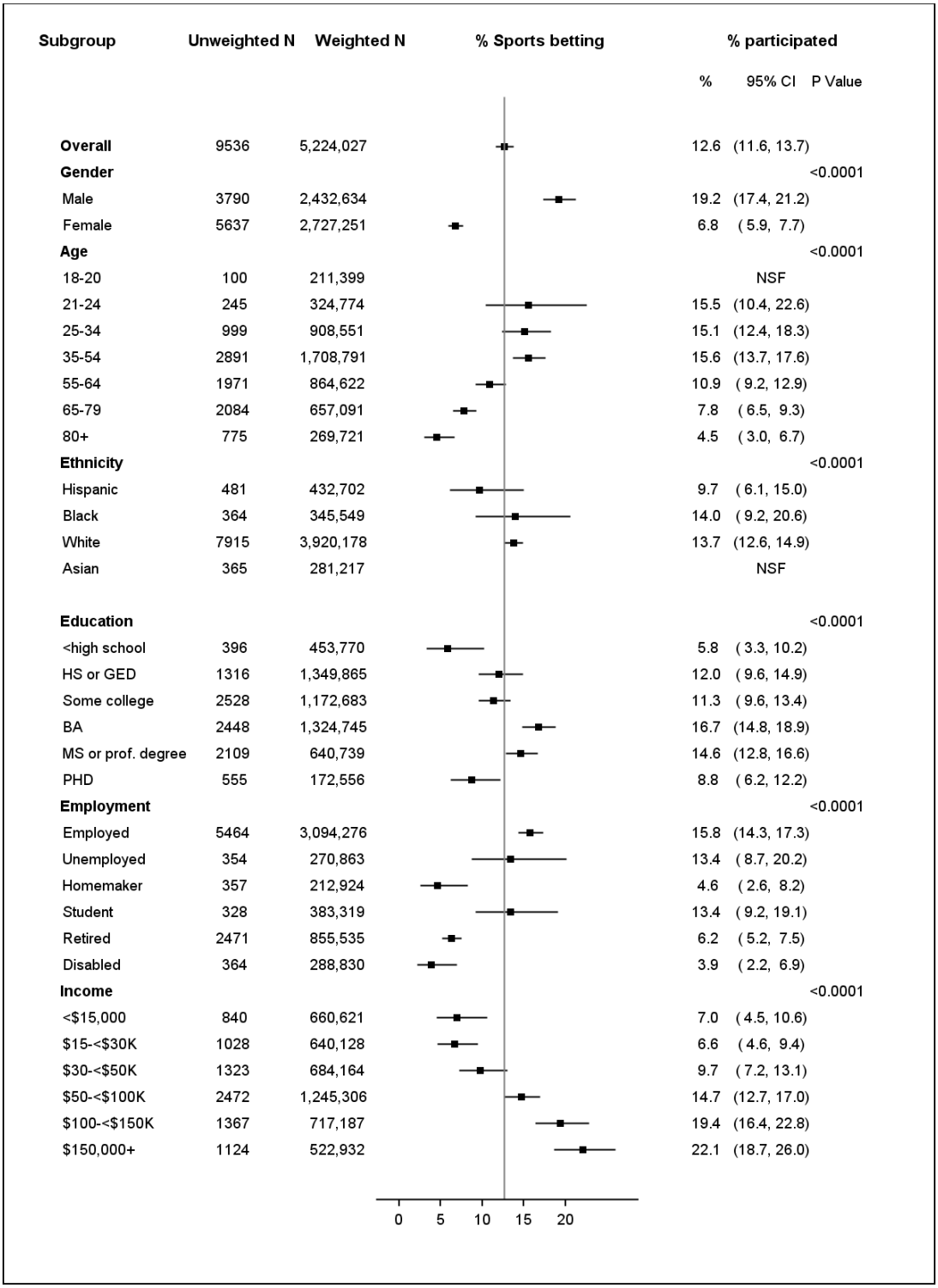
Respondents who gambled on horse races in the past year participated in an average of 3.1 other gambling activities in the same period (see Table 48 in Appendix D). The gambling activities that past-year horse race bettors were most likely to have done include playing the lottery (87.3%), purchasing raffles (58.1%), going to a casino (58.7%), and wagering on sports (55.3%).

Bingo

Bingo is the only gambling activity included in the survey where females were more likely to be past-year participants than males (see Figure 18). Respondents aged 65 and over were more likely to have participated in bingo in the past year compared with those aged 35 to 64. Those with less education (less than a Bachelor's degree) were more likely to play bingo then those with a Bachelor's or Master's degree. Respondents with annual household incomes between $15,000 and $30,000 were more likely to play bingo than those with annual household incomes of $50,000 or more.

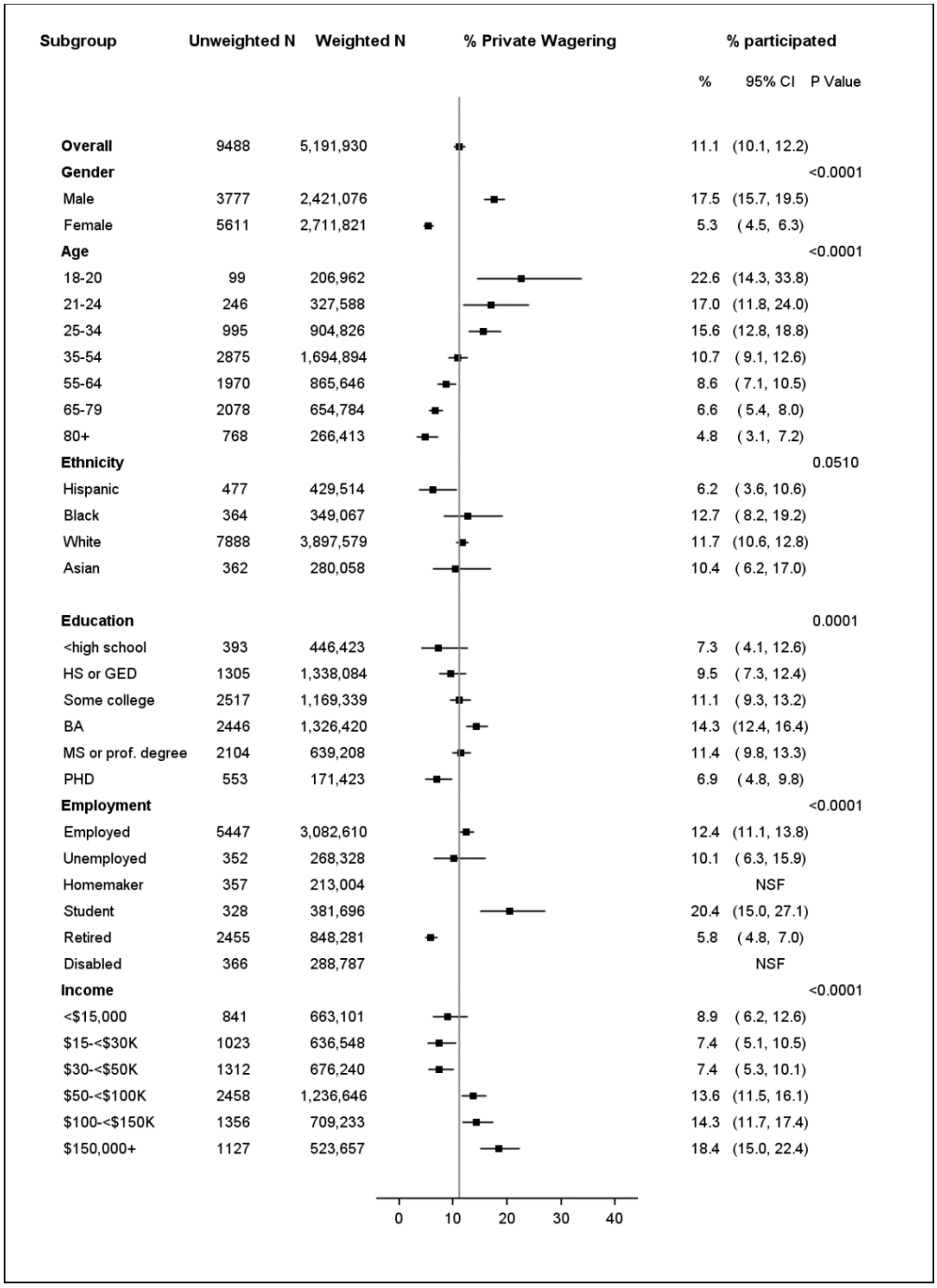
Past-year bingo players participated in an average of 2.5 other gambling activities in the same timeframe (see Table 48 in Appendix D). The gambling activities that bingo players were most likely to have done include playing the lottery (82.3%), going to a casino (52.9%), and purchasing raffles (52.4%).

Figure 15 Past-year sports betting by demographics



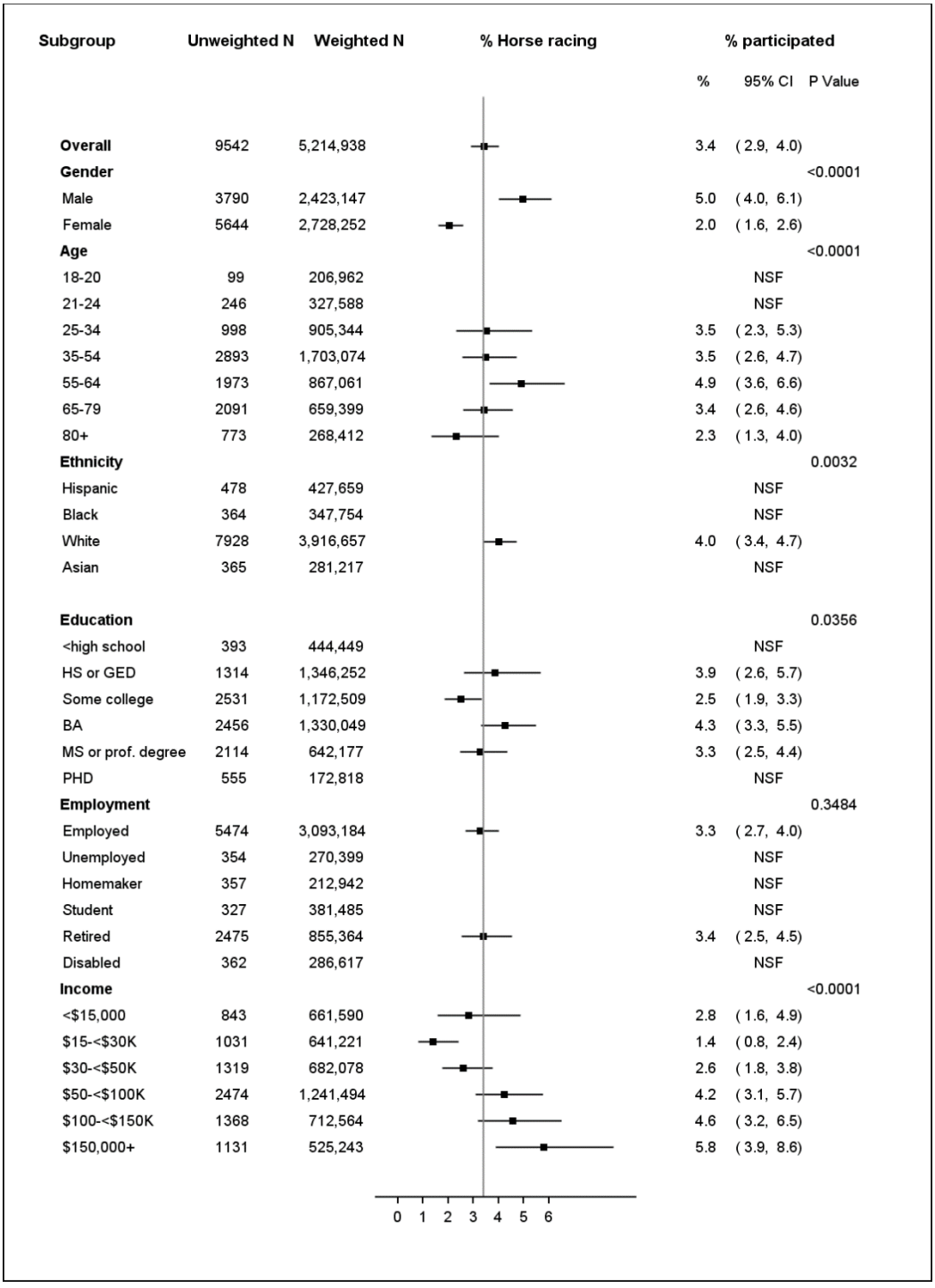
Note: Unweighted N refers to the total number of respondents who answered this question
Note: Weighted N is the total number of respondents who answered the question weighted to the MA population
Note: Vertical reference line represents overall % participated
Note: Insufficient Information (NSF) indicates estimates are unreliable, relative standard error > 30%
Note: This information is presented in detail in Table 54 in Appendix D

Figure 16 Past-year private wagering by demographics



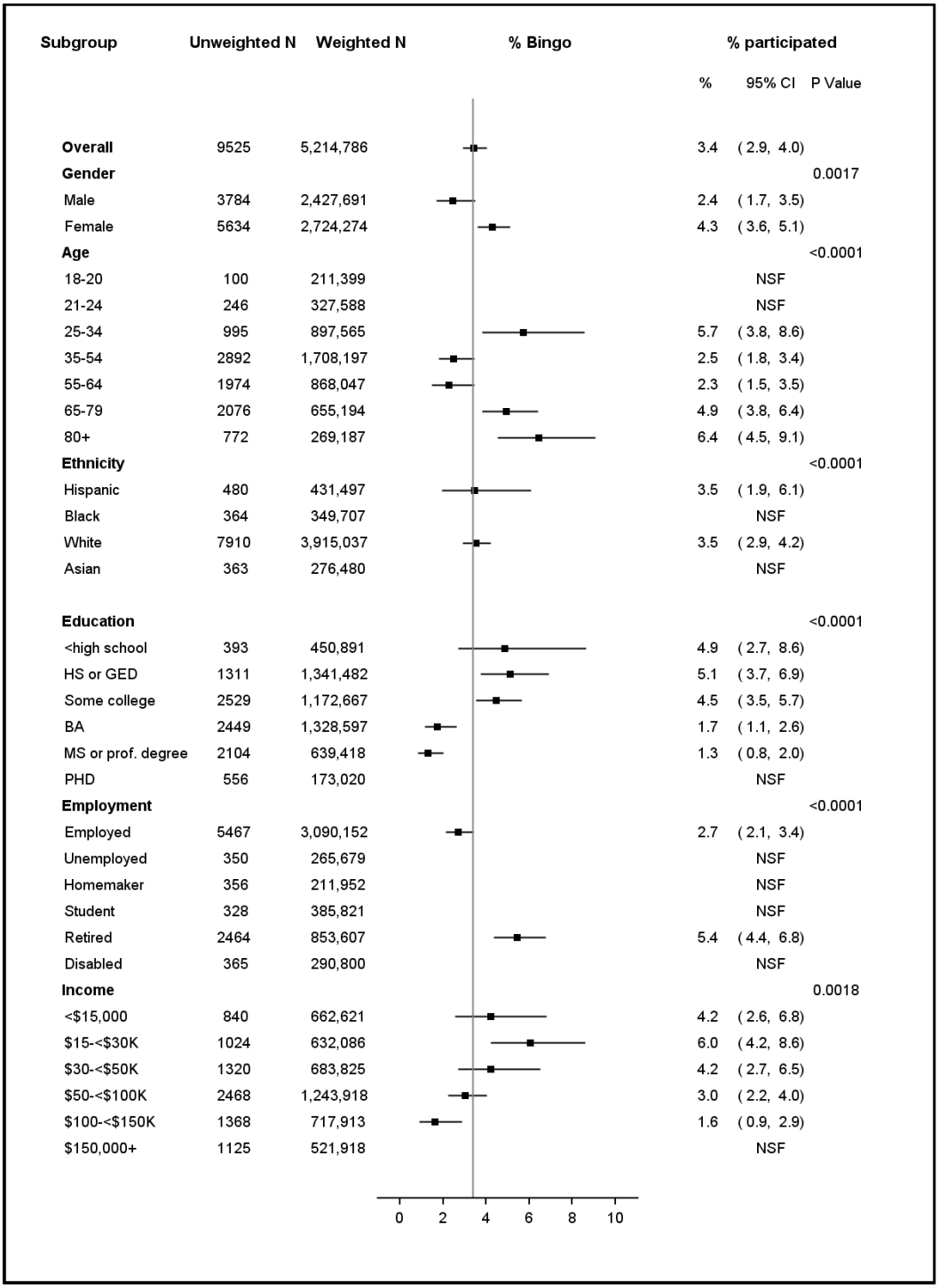
Note: Unweighted N refers to the total number of respondents who answered this question
Note: Weighted N is the total number of respondents who answered the question weighted to the MA population
Note: Vertical reference line represents overall % participated
Note: Insufficient Information (NSF) indicates estimates are unreliable, relative standard error > 30%
Note: This information is presented in detail in Table 55 in Appendix D

Figure 17 Past-year horse race betting by demographics



Note: Unweighted N refers to the total number of respondents who answered this question
Note: Weighted N is the total number of respondents who answered the question weighted to the MA population
Note: Vertical reference line represents overall % participated
Note: Insufficient Information (NSF) indicates estimates are unreliable, relative standard error > 30%
Note: This information is presented in detail in Table 56 in Appendix D

Figure 18 Past-year bingo participation by demographics

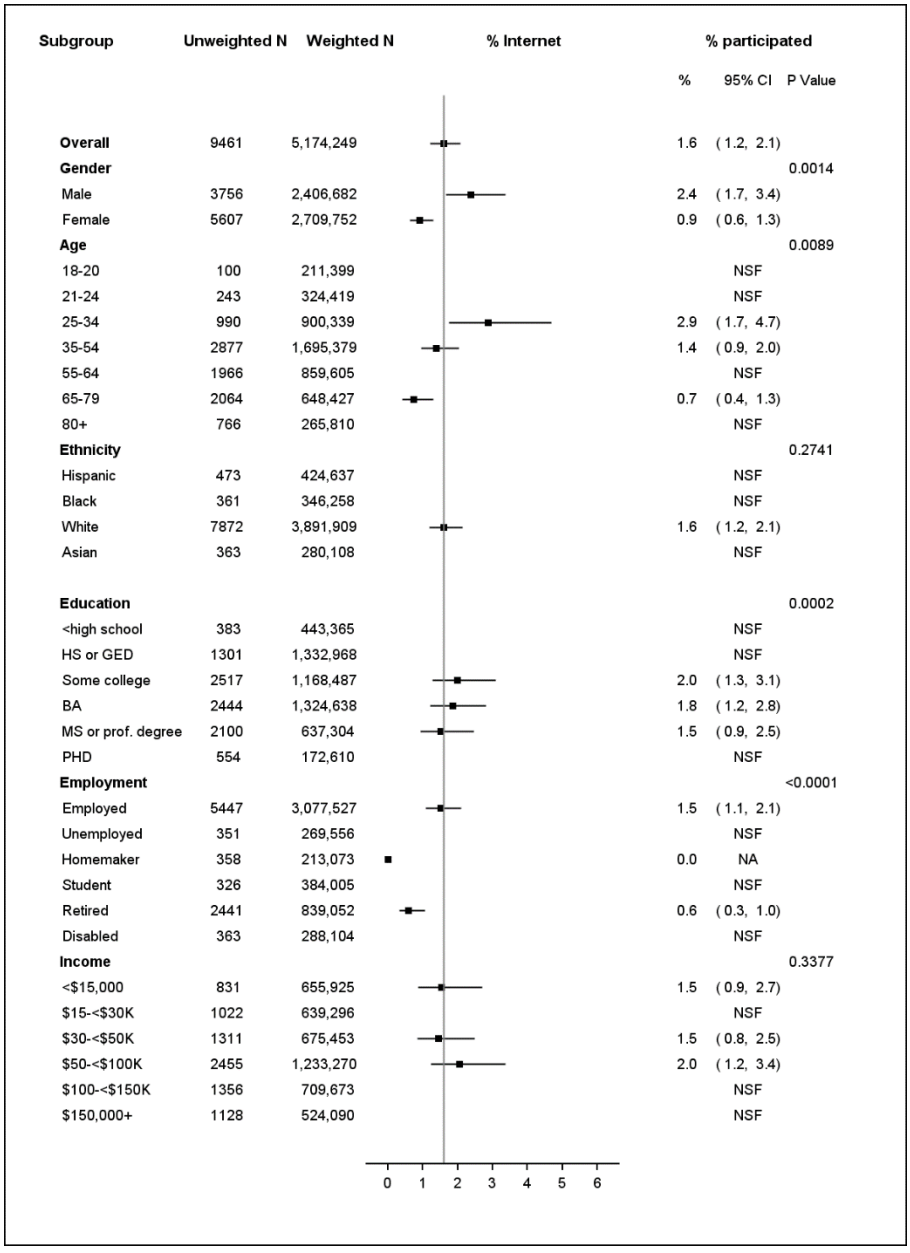


Note: Unweighted N refers to the total number of respondents who answered this question
Note: Weighted N is the total number of respondents who answered the question weighted to the MA population
Note: Vertical reference line represents overall % participated
Note: Insufficient Information (NSF) indicates estimates are unreliable, relative standard error > 30
Note: This information is presented in detail in Table 57 in Appendix D

Online Gambling

The profile of online gamblers in Massachusetts is similar to the profile of online gamblers in many other jurisdictions (Williams, Wood, & Parke, 2012). Males were more likely to gamble online than females and young (25-34) adults were more likely to gamble online than older (65 and up) adults (see Figure 19).

Figure 19 Past-year online gambling by demographics



Note: Unweighted N refers to the total number of respondents who answered this question
Note: Weighted N is the total number of respondents who answered the question weighted to the MA population
Note: Vertical reference line represents overall % participated
Note: Insufficient Information (NSF) indicates estimates are unreliable, relative standard error > 30%
Note: This information is presented in detail in Table 58 in Appendix D

Online gamblers tend to be heavily involved land-based gamblers who have added online gambling to their repertoire of gambling activities. In the present study, respondents who gambled online in the past year participated in an average of 3.0 other land-based gambling activities in that period (see Table 48 in Appendix D). The gambling activities that online gamblers were most likely to have participated in include playing the lottery (82.9%), wagering on sports (53.3%), wagering privately (47.8%), going to a casino (44.6%), and purchasing raffles (42.9%).

Respondents who gambled online in the past year were asked to identify the main type of online gambling they engaged in. Nearly three in ten of these respondents (32.5%) indicated that they gambled on sports online. Other gambling activities that these respondents had done online included poker, horse racing, and lottery (see Table 59 in Appendix D).

Patterns of Gambling Participation

To understand patterns of gambling participation, it is helpful to examine the demographics of respondents who wager at increasing levels of frequency. To analyze levels of gambling participation, respondents were divided into four groups (see Table 60 in Appendix D):

- ***non-gamblers*** who have not participated in any type of gambling in the past year (26.9% of the total sample);
- ***past-year gamblers*** who have participated in one or more types of gambling in the past year but not on a monthly or weekly basis (34.6% of the total sample);
- ***monthly gamblers*** who participate in one or more types of gambling on a monthly, but not weekly basis (20.4% of the total sample); and
- ***weekly gamblers*** who participate in one or more types of gambling on a weekly basis (18.1% of the total sample).

Table 5 below presents past-yearly, monthly, and weekly participation for all of the types of gambling included in the Massachusetts survey (except high-risk stocks, which is not universally viewed as a form of gambling). Almost four in ten Massachusetts adults (38.5%) gambled once a month or more often and 18.1% of Massachusetts adults gambled once a week or more often in 2014. The table also shows that the greatest proportion of monthly and weekly rates of participation among Massachusetts adults is explained by lottery participation, including traditional lottery games and instant games. Very few Massachusetts adults gambled at casinos more than a few times a year. After lottery play, raffles, betting on sports, and wagering privately against others were the most common weekly and monthly gambling activities among Massachusetts adults.

Like specific gambling activities, gambling frequency in Massachusetts was clearly associated with gender. Women in Massachusetts were significantly more likely to be non-gamblers or past-year gamblers while men were significantly more likely to be monthly or weekly gamblers (see Table 60 in Appendix D). Adults between the ages of 55 and 79 were more likely to be weekly gamblers compared to adults between the ages of 21 and 54. Education is also associated with gambling frequency in Massachusetts. Adults with a high school diploma or less were significantly more likely to be weekly gamblers than adults with higher education, with adults with graduate degrees least likely to be weekly gamblers. Finally, there are differences across the geographic regions of Massachusetts as defined by the Expanded Gaming Act. The residents of Southeastern Massachusetts were significantly more likely than residents of Greater Boston to be weekly gamblers.

Table 5 Frequency of gambling participation by gambling activity

	Unweighted N[1]	Weighted N[2]	Past year participation[4]		Monthly participation[5]		Weekly participation	
			%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]
All gambling	9,537	5,220,404	73.1	(71.8, 74.4)	38.5	(37.1, 40.0)	18.1	(16.9, 19.3)
All lottery	9,521	5,218,127	61.7	(60.2, 63.1)	33.5	(32.1, 35.0)	15.9	(14.8, 17.0)
Traditional	9,555	5,234,836	58.1	(56.6, 59.5)	29.7	(28.3, 31.1)	13.3	(12.3, 14.4)
Instant games	9,515	5,210,024	37.2	(35.8, 38.7)	18.7	(17.5, 19.9)	8.3	(7.5, 9.3)
Daily games	9,511	5,209,060	14.1	(13.1, 15.2)	6.5	(5.8, 7.4)	2.7	(2.2, 3.3)
Raffles	9,494	5,194,098	31.5	(30.2, 32.8)	5.9	(5.2, 6.7)	1.7	(1.2, 2.2)
Casino	9,028	4,891,337	21.5	(20.3, 22.7)	1.0	(0.8, 1.4)		NSF
Sports betting	9,536	5,224,027	12.6	(11.6, 13.7)	4.1	(3.5, 4.8)	1.8	(1.4, 2.3)
Private wagering	9,488	5,191,930	11.1	(10.1, 12.2)	4.5	(3.8, 5.3)	1.5	(1.1, 2.0)
Horse racing	9,542	5,214,938	3.4	(2.9, 4.0)	1.0	(0.7, 1.4)		NSF
Bingo	9,525	5,214,786	3.4	(2.9, 4.0)	1.2	(0.9, 1.6)	0.6	(0.4, 0.9)
Online	9,461	5,174,249	1.6	(1.2, 2.1)	N/A	N/A	N/A	N/A

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] Includes respondents who participate yearly, monthly or weekly
[5] Includes respondents who participate monthly or weekly
Note: Insufficient Information (NSF) indicates estimates are unreliable, relative standard error > 30%

Reasons for Gambling

Another important question in studies of gambling is why people choose to gamble. Respondents who gambled in the past year were asked to identify the main reason that they chose to gamble. Respondents could only select one answer to this question.

Table 6 presents information about the main reported reason for gambling among past-year gamblers, monthly gamblers, and weekly gamblers in Massachusetts. This table shows that past-year gamblers in Massachusetts were most likely to say that winning money was the main reason they gambled, followed by excitement and/or entertainment, to socialize with family or friends, and to support worthy causes. As gambling participation increased, winning money became an increasingly important reason for gambling as did excitement and/or entertainment. Also as gambling participation increased, socializing with family or friends and supporting worthy causes became increasingly less important reasons for gambling. Weekly gamblers were significantly more likely than past-year gamblers to say that escape or distraction was the main reason they gambled.

Table 6 Reasons for gambling among Massachusetts gamblers

		Yearly gamblers		Monthly gamblers		Weekly gamblers		p-value[4]
		%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	
Unweighted N[1]		3,637		1,795		1,560		
Weighted N[2]		1,803,913		1,066,268		945,597		
Reasons for gambling	For excitement/ entertainment	23.8	(21.8, 26.0)	32.7	(29.5, 36.1)	34.3	(30.9, 38.0)	<0.0001
	To win money	32.1	(29.7, 34.6)	41.1	(37.7, 44.7)	43.9	(40.1, 47.7)	
	To escape or distract yourself	1.8	(1.3, 2.5)	2.0	(1.2, 3.3)	4.2	(3.0, 6.0)	
	To socialize with family or friends	19.9	(17.9, 22.0)	15.4	(13.1, 17.9)	11.1	(9.0, 13.5)	
	To support worthy causes	18.3	(16.6, 20.2)	6.3	(5.1, 7.9)	3.7	(2.3, 5.8)	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups

Table 61 in Appendix D provides additional information about differences in reasons for gambling associated with important demographic variables. One interesting finding is that Blacks were significantly more likely than Whites to say that winning money was the main reason they gamble, suggesting that they approach gambling more as a financial proposition than as a social activity or as leisure entertainment (Volberg, Toce, & Gerstein, 1999).

Gambling Expenditures

Gambling expenditure is an important measure of gambling participation. When survey respondents report accurately, expenditure data are useful to illustrate how much money individuals are spending on different gambling activities. These data, in turn, can be compared to actual and projected revenues, both to validate actual expenditures and to clarify whether revenue projections are accurate. However, surveys have consistently obtained significant underestimates of actual gambling expenditure (Volberg, Gerstein, Christiansen, & Baldridge, 2001; Williams & Wood, 2007; Wood & Williams, 2007). There are several possible reasons for this lack of correspondence between reported expenditure and actual revenue, including characteristics of different gambling activities, the way in which expenditure questions are asked, respondents' needs to appear socially desirable, and faulty perceptions of wins and losses (Blaszczynski, Dumlao, & Lange, 1997; Volberg et al., 2001; Williams, Belanger, & Arthur, 2011; Wood & Williams, 2007). A detailed summary of these limitations is presented in Appendix D1.

Despite these limitations, self-reported expenditure data provide a valuable lens into the relative importance of different gambling activities to the population. In this section, we provide an overview of the methods used to collect and analyze expenditure data in the Baseline General Population Survey and discuss the relative importance of different gambling activities to our respondents.

Assessing Gambling Expenditure in Massachusetts

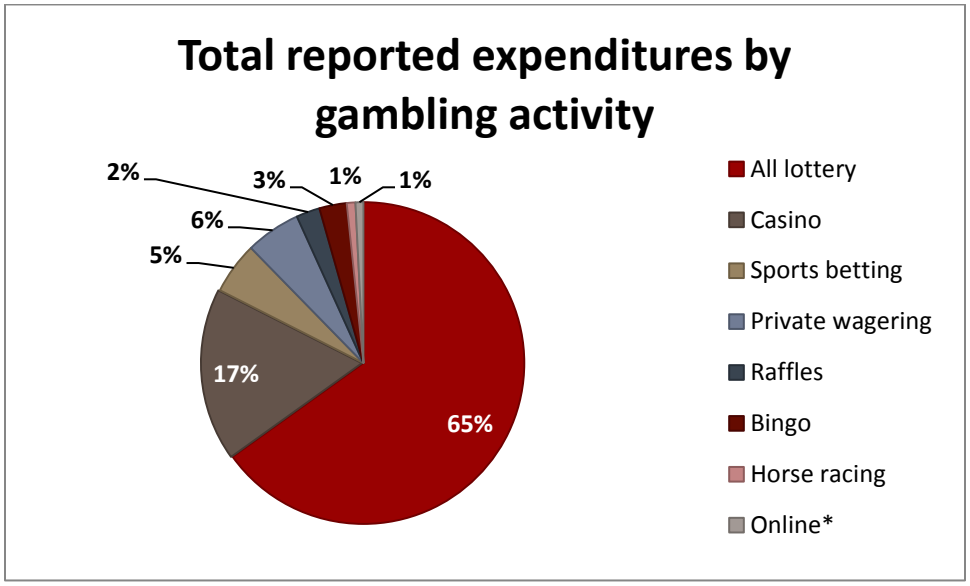
To assess gambling expenditures in Massachusetts, respondents in the survey who reported participating in a specific form of gambling in the past year were asked "Roughly how much money do you spend on [gambling activity] in a typical month?" At the beginning of this section of the survey, all respondents were given the same definition of spending. Respondents were told:

> *Spending means how much you are ahead (+$) or behind (-$), or your net win or loss in an average month within the past 12 months.*

Thus, if a respondent felt that he/she was an overall winner in a typical month, the amount could be reported as a "win" rather than as a "loss."

In analyzing these data, our first step was to look at the responses to identify extreme or improbable answers to these questions. Based on this review, we identified one respondent who gave improbable responses for every expenditure question in the survey and set this respondent's expenditures to missing. We also elected to eliminate extreme and questionable outliers in the data. We then examined the proportion of reported expenditures for each of the gambling activities included in the survey. The figure below illustrates the proportion of total reported expenditures that came from each of these activities.

Figure 20 Reported expenditures on different gambling activities



Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%
Note: These data were truncated by 4 standard deviations from the mean to account for extreme outliers
Note: This information is presented in detail in Table 62 in Appendix D

Figure 20 illustrates that relative to the other gambling activities, respondents reported spending the largest proportion of money (65%) on the lottery. This is not surprising given the popularity and success of the Massachusetts Lottery. After the lottery, respondents reported spending the largest proportion of money at casinos (17%). This is interesting given that no casinos have yet opened in the state of Massachusetts, although they do exist in nearby Connecticut. In tandem, the results in this figure illustrate that relative to other forms of gambling, lottery play and casino gambling were the gambling activities with which respondents were most engaged, followed by private wagering and sports betting.

Like much of the data presented in this report, these expenditure data will benefit from deeper analysis and from data collected in subsequent surveys. Because we will ask the same expenditure questions in subsequent population surveys, we will be able to identify trends in how reported expenditures change over time, both before and after the state's new gambling facilities open. For example, it will be interesting to examine how the proportion of reported expenditures on lottery and casinos changes once the state's new facilities open. Moreover, the limitations of these data such as the lack of fit between respondents' reported expenditures and actual revenues reported by state agencies, introduce a number of questions that can be investigated through deeper analyses, including the degree to which gamblers exaggerate their wins or minimize their losses.

The Geography of Gambling in Massachusetts

The relationship between increased access to legal gambling and the prevalence of problem gambling is important in light of the remarkable expansion of gambling throughout the U.S. and internationally over the last 30 years. One important goal of the Massachusetts baseline survey was to assess the distribution of gambling and problem gambling throughout the Commonwealth in relation to geography. In this section, we examine the survey data in relation to gambling participation; data related to problem gambling is presented later in the report (see *The Geography of Problem Gambling in Massachusetts* in Chapter 5). As noted earlier in this report, the Expanded Gaming Act defines three regions in Massachusetts where no more than one license for a resort-style casino may be awarded. These regions are shown in the *Introduction* of this report.

Table 63 - Table 66 in Appendix D present detailed information about the characteristics of the residents of the three regions of Massachusetts defined by the Expanded Gaming Act. The following table summarizes much of this information.

Table 7 Characteristics of the three regions defined in the Expanded Gaming Act

Greater Boston (GB)	Southeastern Massachusetts (SEMA)	Western Massachusetts (WMA)
• 68% of population • Higher levels of education than SEMA & WMA • Higher levels of employment than WMA • Lower rate of past-year gambling than SEMA • Lowest rate of weekly gambling • Lowest past-year participation in lottery • Lower past-year participation in raffles than WMA	• 19% of population • Older population than GB & WMA, more likely to be retired than GB • Least racially & ethnically diverse region	• 13% of population • Lowest percentage of annual household income > $100K

Conclusion

In this chapter of the report, we have presented information about the prevalence of gambling in Massachusetts along with details about the demographic characteristics of gamblers, their game preferences, and the geographic pattern of gambling in Massachusetts. One interesting finding is that the past-year casino participation rate in Massachusetts is similar to participation rates in other jurisdictions with well-established casino markets. This could indicate that the negative impacts of introducing casinos in the Bay State may be less

than anticipated since exposure to casino gambling is already high. However, it is also possible that rates of monthly and weekly casino gambling in Massachusetts will increase once casinos are operating within the Commonwealth. If rates of regular casino gambling rise, this could result in larger numbers of at-risk and problem gamblers.

The information presented in this chapter of the report is highly descriptive. We plan extensive deeper analyses of these data to assess relationships between specific gambling activities and between gambling clusters (i.e., different gambling activities that are statistically or structurally related to each other) and demographics. In the next chapter of the report, we discuss the prevalence of problem gambling in Massachusetts and the demographic and geographic distribution of gambling problems in the population.

CHAPTER 5:

Problem Gambling in Massachusetts

One of the main negative social impacts of expanded gambling availability tends to be an increase in problem gambling (Williams, Rehm, & Stevens, 2011). The SEIGMA Baseline General Population Survey establishes the baseline prevalence of problem gambling in Massachusetts prior to the opening of any casinos and tells us about the number of problem gamblers currently in Massachusetts. The survey provides other important information about problem gambling, including prevalence rates among important demographic groups and among past-year participants in different gambling activities. We can also compare the problem gambling prevalence rate in Massachusetts with prevalence rates in other U.S. states where similar surveys have been carried out in the last ten years.

In this chapter of the report, we discuss how problem gambling was measured in the Baseline General Population Survey and then present information about the prevalence of problem gambling and the number of problem gamblers in Massachusetts. We also present information about the demographic distribution of at-risk and problem gambling as well as differences in problem gambling prevalence among respondents who have participated in specific types of gambling. In the next chapter of the report, we discuss differences between recreational, at-risk, and problem gamblers including demographics, game preferences, gambling expenditures, and comorbid conditions.

A Note about Terminology Used to Describe Problem Gambling

Historically, various terms have been used to describe problem gambling, including compulsive gambling, addictive gambling, pathological gambling, and disordered gambling. Prior to 1980, compulsive gambling was the preferred term both in the scientific community as well as by members of Gamblers Anonymous. In 1980, gambling problems were first formally recognized in the third edition of the Diagnostic and Statistical Manual (DSM-III) of the American Psychiatric Association (1980). Within the DSM-III and DSM-IV, the disorder was called pathological gambling and was classified in the *Impulse-Control Disorders Not Elsewhere Classified* section. In the 1990s, the term problem gambling became more popular due to new research showing that gambling problems varied in severity and that many people did not have the chronic, unremitting course that pathological gambling implied (pathological means “disease-like” and the DSM-III criteria specified no time frame for the symptoms, implying that it was a lifelong disorder).

Each revision of the DSM has seen changes in the diagnostic criteria for what was initially called pathological gambling. In the latest version of the manual (DSM-5), pathological gambling was re-named gambling disorder and was moved to the *Substance-Related and Addictive Disorders* section. These changes were intended to reflect research findings that *gambling disorder* is similar to substance-related disorders in clinical expression, neurological origin, comorbidity, physiology, and treatment (American Psychiatric Association, 2013). In addition to changes in naming and placement, the number of diagnostic criteria was reduced from 10 to 9, the minimum number of criteria required for diagnosis was lowered from 5 to 4, *levels* of Disordered Gambling were introduced (mild, moderate, severe), and a 12-month time frame was specified.

Problem gambling has become the preferred term amongst researchers and most clinicians because it has fewer etiological connotations and because it is inclusive of less severe forms.[6] However, given the evolution of the disorder described above, pathological gambling is still sometimes used to refer to the most severe and chronic forms of problem/disordered gambling. It is also worth noting that all of the above terms continue to be used as formal diagnostic categories in the assessment instruments most commonly used to classify individuals with a gambling problem. For example, "gambling disorder" is used in the DSM-5; "severe problem gambling" is used in the Canadian Problem Gambling Index (Ferris & Wynne, 2001); "problem gambling" and "pathological gambling" are used in the Problem and Pathological Gambling Measure (PPGM) (Williams & Volberg, 2010, 2014); and "probable pathological gambling" is used in the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987).

Measuring Problem Gambling in Massachusetts

As indicated above, many instruments exist for the population assessment of problem gambling. Worldwide, the most commonly used instruments are the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987), the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001) and various scales based on the DSM-IV diagnostic criteria for pathological gambling (e.g., Fisher, 2000; Gerstein, Volberg, Harwood, & Christiansen, 1999; Kessler et al., 2008; Petry, Stinson, & Grant, 2005). One or more of these instruments have been used in 95% of adult problem gambling prevalence surveys carried out internationally since 1975 (Williams, Volberg, et al., 2012). The reliability of these instruments is well-established by their consistent evidence of internal consistency and test-retest reliability. However, there has been some criticism of their conceptual underpinnings and validity (Govoni, Frisch, & Stinchfield, 2001; Neal et al., 2005; Stinchfield et al., 2007; Svetieva & Walker, 2008; Williams & Volberg, 2010).

Most importantly, there is only fair to weak correspondence between problem gamblers identified in population surveys and the subsequent classification of these same individuals in clinical interviews (Abbott, 2001; Abbott & Volberg, 1992; Ferris & Wynne, 2001; Ladouceur et al., 2000; Ladouceur, Jacques, Chevalier, Sévigny, & Hamel, 2005; Murray, Ladouceur, & Jacques, 2005). In a large study of 7,272 gamblers (including 977 clinically assessed problem gamblers), Williams and Volberg (2010, 2014) demonstrated that classification accuracy of the DSM-IV, SOGS, and CPGI against clinical assessment was better than previous research had shown, suggesting that methodological problems were partly responsible for this previously identified weak relationship. Nonetheless, the overall classification accuracy of these three instruments was still only modest. Furthermore, there was significant variation in the accuracy of these instruments as a function of gender, age, and race/ethnicity. By comparison, a new instrument, the Problem and Pathological Gambling Measure (PPGM) performed much better than the three older instruments and its performance did not vary as a function of age, gender, or race/ethnicity (Williams & Volberg, 2014).

As described below, the PPGM has many conceptual and technical advantages over these other instruments. Consequently, it served as our primary instrument to assess problem gambling in the Baseline General Population Survey. However, for purposes of comparison to other jurisdictions, we also included the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001) which has been the dominant instrument worldwide since 2005 (Williams, Volberg, et al., 2012). Although these two instruments differ in their conceptual underpinnings, criteria, scoring, and terminology, they do have a number of similarities. Both instruments include the concept of harm to others and oneself as an important criterion for classifying problem gambling. Likewise, both instruments acknowledge differing levels of severity among individuals with gambling problems. While the CPGI uses low-risk, moderate-risk, and problem gambling, the PPGM uses at-risk, problem, and

[6] A search of Google Scholar shows that the term "problem gambling" is now used in scholarly articles eight times more frequently than "pathological gambling," "disordered gambling," or "compulsive gambling."

pathological gambling to label different levels of severity. More information about both instruments is contained in Appendix E.

Because we used the PPGM as our primary scale, we use the term pathological gambler within this chapter to refer to individuals whose PPGM score indicates that they have a severe gambling problem. Elsewhere in this report, we use problem gambling as an umbrella term that encompasses the full range of loss of control as well as gambling harms and consequences that an individual may experience. We refer to severe problem gambling when we want to highlight behaviors, impaired control, and consequences that are more severe than those experienced by at-risk or problem gamblers.

The Problem and Pathological Gambling Measure (PPGM)

The PPGM is a 14-item assessment instrument with questions organized into three sections: Problems (7 questions), Impaired Control (4 questions), and Other Issues (3 questions). The instrument employs a 12-month timeframe and recognizes a continuum of gambling across four categories (Recreational, At-Risk, Problem, and Pathological). The PPGM has been field tested and refined with both clinical and general population samples.

The PPGM is different from other problem gambling instruments in several important respects. First, the PPGM comprehensively assesses *all* of the potential harms of problem gambling (i.e., financial, mental health, health, relationship, work/school, legal), whereas only a subset of potential problems are assessed with the other instruments. For example, physical and mental health problems are not assessed in the DSM or SOGS, illegal activity is not assessed in the DSM or CPGI, and school and/or work problems are not assessed in the CPGI. Furthermore, to better capture problem gamblers who have not acknowledged they have a problem, the PPGM allows for either direct admission of a problem/harm or endorsement of something that indicates harm is occurring regardless of whether the person is willing to identify it as a problem. For example, Item #7 in the PPGM asks if there is someone else besides the respondent who would say that their gambling has caused significant problems, even if the respondent does not agree.[7]

Internationally, there is widespread agreement that for someone to be classified as a problem gambler there needs to be evidence of both (a) significant negative consequences, and (b) impaired control (Neal et al., 2005). This is made explicit in the PPGM which requires endorsement of one or more items from the Problems section and one or more items from the Impaired Control section to classify an individual as a **Problem Gambler**. In contrast, any pattern of item endorsement that results in a score above a certain threshold is sufficient to be designated as a problem gambler in the SOGS, CPGI, and DSM.[8] Endorsement of several PPGM problems and indices of impaired control is required to classify a person as a **Pathological Gambler**. Endorsement of a problem or impaired control, but not both, typically leads to classification as an **At-Risk Gambler**. This reflects the growing recognition that individuals who become problem gamblers can take a number of different pathways into the disorder (Blaszczynski & Nower, 2002; el-Guebaly et al., 2015b; Williams et al., 2015). Gamblers who do not meet the criteria for At-Risk, Problem, or Pathological Gambling are deemed to be **Recreational Gamblers**.

The following table presents the PPGM typology and the criteria required for classification across these groups.

[7] This question in the PPGM is similar to an item from the SOGS and the CPGI that asks: "Have people criticized your gambling or told you that you had a gambling problem, regardless of whether or not you thought it was true?" (Ferris & Wynne, 2001; Lesieur & Blume, 1987).

[8] All of these problem gambling assessment instruments give each symptom equal weight despite the fact that some items are more serious and/or diagnostically important than others (McCready & Adlaf, 2006; Toce-Gerstein et al., 2003)

Table 8 Basis for classifying respondents using the PPGM

Category	Classification criteria
Non-Gambler	Has not gambled in the past 12 months
Recreational Gambler	Has gambled in past 12 months Total score 0
At-Risk Gambler	Total score 1+ Does not meet criteria for more severe categories OR Gambling frequency and expenditure ≥ PG median
Problem Gambler	Has gambled at least once a month in past 12 months Impaired Control score 1+ Problems score 1+ Total score of 2-4 OR Total score 3+ Gambling frequency and expenditure ≥ PG median
Pathological Gambler (equivalent to severe problem gambler)	Has gambled at least once a month in past 12 months Impaired Control score 1+ Problems score 1+ AND Total score of 5+

To minimize false positives (i.e., a positive test result that is incorrect), a person has to report gambling at least once a month in the past year to be classified as either a problem or pathological gambler. None of the older problem gambling instruments requires corroborating gambling behavior. To minimize false negatives (i.e., a negative test result that is incorrect) and better identify problem gamblers who have not acknowledged they have a problem, a person can be classified as a problem gambler despite reporting sub-threshold levels of symptomatology if their gambling expenditure and frequency are equal to those of unambiguously identified problem gamblers.[9] While it is well recognized in the addiction field that a significant portion of people with addictions are in denial (Howard et al., 2002; Rinn, Desai, Rosenblatt, & Gastfriend, 2002; Shaffer & Simoneau, 2001), the PPGM is the only gambling instrument designed to identify these individuals.

In a comparative study of the performance of the three most frequently used problem gambling instruments (SOGS, CPGI, and NODS) and the PPGM, the PPGM demonstrated a high degree of overlap (i.e., concurrent validity) with the three other instruments as well as good association with gambling frequency and gambling expenditure (Williams & Volberg, 2014). Additional research has demonstrated that the PPGM produces consistent results across different jurisdictions and over periods of time with the same people (Back, Williams, & Lee, 2015; Williams et al., 2015). For readers interested in technical aspects of the PPGM, Appendix E1 presents a discussion of the development and performance of the instrument and a copy of the PPGM and scoring system is provided in Appendix E2. Appendix E also includes an item endorsement table for the PPGM (Table 68) and an enrollment table showing the gender and race/ethnicity distribution of the sample across the PPGM typology (Table 69).

[9] In response to a reviewer query, we looked at whether any respondents classified as at-risk or problem gamblers on the basis of their gambling expenditure or frequency were wealthy. One individual classified as a problem gambler and 24 individuals classified as at-risk gamblers had annual household incomes greater than $150,000. This is similar to the proportion of the overall weighted sample with incomes of $150,000 or more.

Problem Gambling Prevalence

In epidemiological research, prevalence is a measure of the number of individuals in the population with a disorder at one point in time. In epidemiology, prevalence differs from incidence, which is a measure of the number of new cases that arise over a specific period of time. Problem gambling prevalence refers to the percentage of individuals who meet the criteria for problem gambling within the past 12 months. In problem gambling prevalence surveys, individuals are classified on the basis of their responses to a valid and reliable problem gambling instrument such as the PPGM.

Prevalence rates are based on samples rather than the entire population. Even when a sample is representative of the population from which it is drawn, an identified value—such as the prevalence rate—is still an estimate and can be different, even if only slightly, from the "true" value. One important source of uncertainty in generalizing from a sample to the population—sampling error—is generally presented as a measure of the uncertainty around the identified value. This measure is called the confidence interval and it is a gauge of how certain we are that the result we have identified is accurate. The conventional size of the confidence interval is 95% which means that, if a researcher drew 100 samples from the same population, the identified value would fall between the lowest and highest values of the confidence interval 95 times.

Generally speaking, narrower confidence intervals are considered more reliable because the identified value will not be very different in other samples drawn from the same population. As sample size increases, confidence intervals typically narrow. Conversely, as sample size decreases, confidence intervals widen. While the overall size of the sample for the Baseline General Population Survey is large, there are some groups in the sample that are quite small. In particular, because the prevalence of problem gambling tends to be low, we urge readers to treat estimates based on this and other small groups with caution and to pay particular attention to the confidence intervals surrounding these estimates.

Table 9 presents information about the distribution of the Massachusetts sample across the PPGM typology. The table shows that 62.9% of Massachusetts adults were recreational gamblers who gambled in the past year without any difficulties; 8.4% of Massachusetts adults were engaged in risky gambling behavior; and 2.0% of Massachusetts adults were classified as problem gamblers. We have elected to collapse individuals classified as problem or pathological gamblers into one group, due to small sample sizes for these groups and the few statistically significant differences between the groups demographically or in patterns of gambling participation. We refer to this combined group as "problem gamblers" throughout the rest of this chapter.

Table 9 Classification of respondents on the PPGM

	Sample Size Unweighted N[1]	Weighted N[2]	Percent[3]	95% CI[3]
Total	9,523	5,211,381	100	
Non-gambler	2,523	1,387,614	26.6	(25.3, 28.0)
Recreational gambler	6,271	3,278,144	62.9	(61.4, 64.4)
At-risk gambler	600	439,884	8.4	(7.5, 9.4)
Problem or pathological gambler	129	105,738	2.0	(1.6, 2.6)

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N

For comparative purposes, we also present information about the distribution of the Massachusetts sample using the CPGI. In presenting this comparison, we have followed the recommendation of two research groups

that have proposed re-calibrating the original CPGI categories to improve the performance of the instrument and the distinctiveness of the low-risk, moderate-risk, and problem gambling groups recognized in the CPGI typology (Currie, Hodgins, & Casey, 2013; Williams & Volberg, 2014). For readers interested in the CPGI and its performance in the Massachusetts sample, we have included additional information in Appendix E. Appendix E3 is a description of the development and performance of the CPGI and includes a copy of the instrument and its scoring; Appendix E4 is a discussion of the research evidence that supports revising the scoring of the CPGI; Table 71 in Appendix E presents the distribution of the Massachusetts sample using the standard CPGI typology; and Table 72 in Appendix E provides item endorsement rates for the CPGI questions.

Based on the re-calibrated CPGI, Table 10 shows 61.2% of Massachusetts adults gambled in the past year without any problems; 9.8% of Massachusetts adults were engaged in risky gambling behavior; and 2.2% of Massachusetts adults were classified as problem gamblers.

Table 10 Classification of respondents on the CPGI

	Sample Size Unweighted N[1]	Weighted N[2]	Percent[3]	95% CI[3]
Total	9,491	5,194,816	100	
Non-Gambler	2,534	1,395,307	26.9	(25.6, 28.2)
Non-Problem Gambler (CPGI=0)	6,132	3,177,899	61.2	(59.7, 62.6)
At-risk gambler (CPGI=1-4)	702	506,865	9.8	(8.8, 10.8)
Problem gambler (CPGI=5+)	123	114,744	2.2	(1.7, 2.8)

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N

These two tables make it clear that the prevalence rate of problem gambling based on the PPGM and the CPGI is quite similar. Although the two instruments produce similar prevalence rates, they do not capture the same individuals. Table 73 in Appendix E presents a cross-tabulation of the two problem gambling instruments and provides a sense of the overlap in classification between the two measures.

Population Estimates

According to the most recent estimate, the population of Massachusetts adults (18+) in 2014 was 5,197,008 (United States Census, 2014). Based on the point estimates and confidence intervals presented in Table 9, we estimate that between 83,152 (1.6%) and 135,122 (2.6%) Massachusetts adults were problem gamblers in 2014. An additional 389,776 (7.5%) and 488,519 (9.4%) Massachusetts adults were at-risk gamblers.

If we consider that each problem gambler is responsible for social and economic impacts that ripple out to their families, friends, employers, and communities, the proportion of the Massachusetts population affected by gambling-related problems is even higher. Later in the report, we present information from respondents in the survey affected by someone else's gambling (see *The Impacts of Problem Gambling in Massachusetts* in Chapter 6).

Prevalence Rates among Demographic Groups

Problem gambling prevalence rates can be significantly different across important subgroups in the population. Because the confidence intervals around prevalence estimates can be large, comparisons between these groups must be interpreted with caution. Nevertheless, this information is important in helping target public health efforts toward groups in the population that are most in need of help.

Table 74 in Appendix E presents information about the size of key subgroups in the sample and the past-year prevalence of at-risk and problem gambling within each subgroup. This table shows that there were substantial differences in the prevalence of at-risk and problem gambling across important subgroups in the adult Massachusetts population. Differences in prevalence rates by gender, race/ethnicity, education, employment status, and annual household income were all statistically significant.

The prevalence of at-risk gambling was significantly higher among:

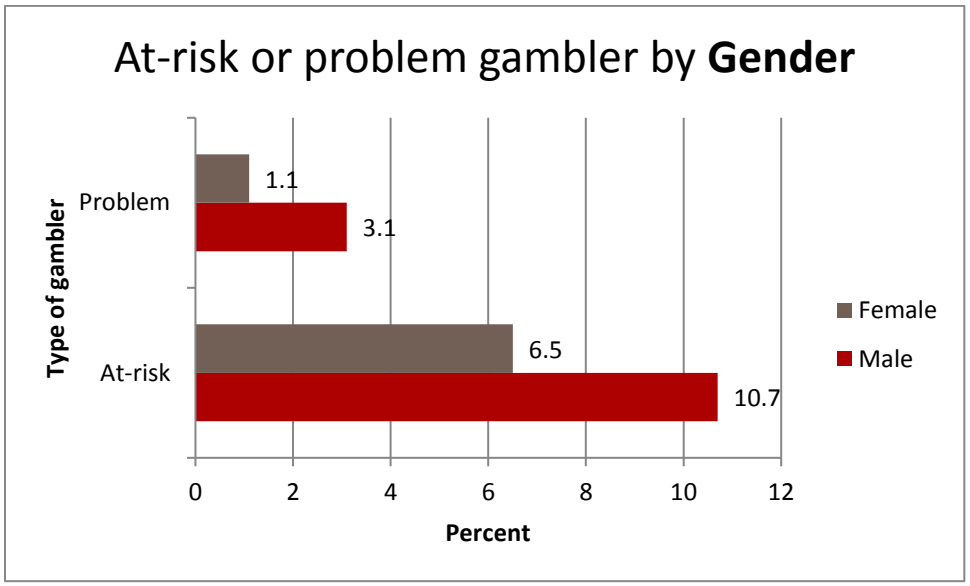
- Men compared with women
- HS education or less compared with college degree or higher
- Unemployed compared with employed, homemakers and retired
- Annual HH income under $15,000 compared with $50,000 or more

The prevalence of problem gambling in Massachusetts was significantly higher among:

- Men compared with women
- Blacks compared with Whites
- HS education compared with college degree

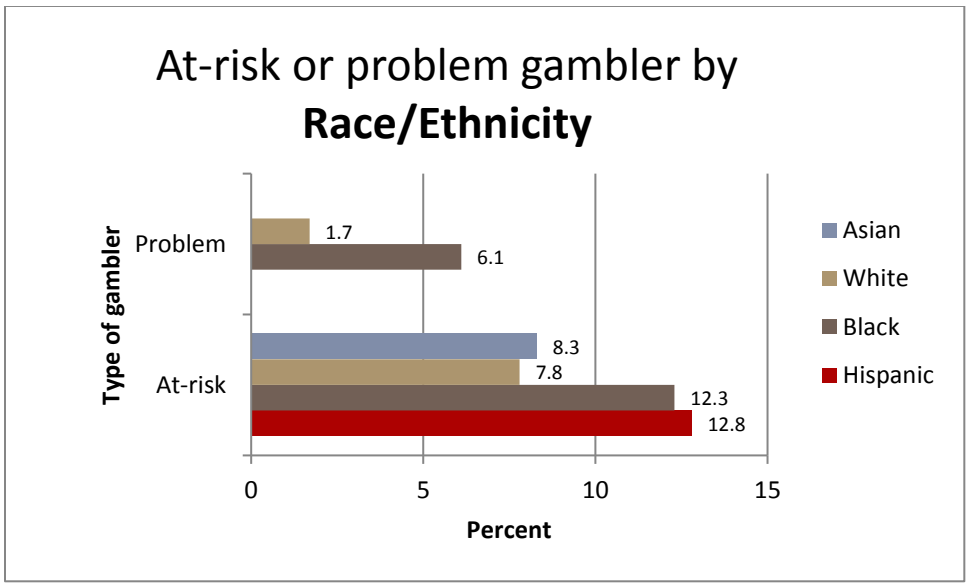
The following figures present some of these differences graphically.

Figure 21 Problem gambling status by gender



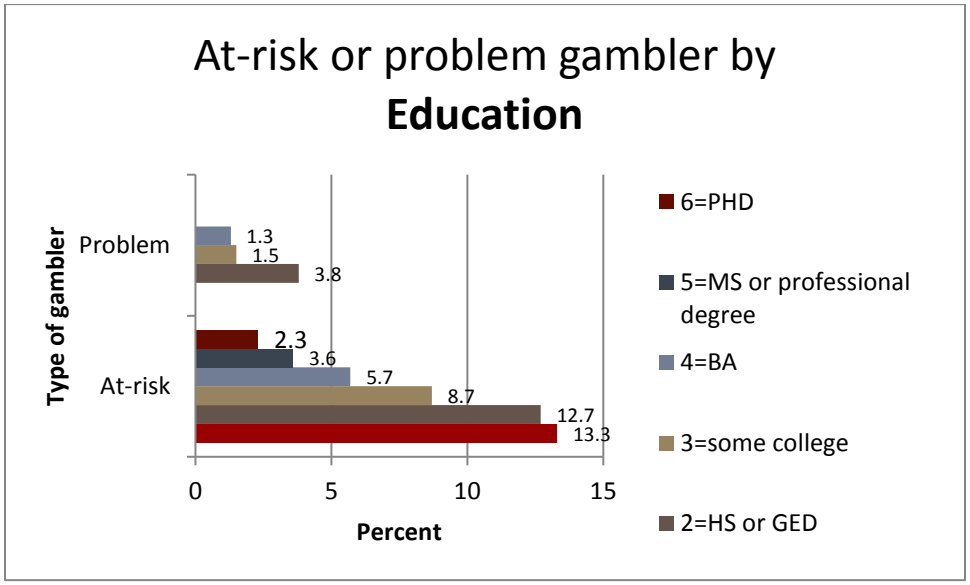
Note: This information is presented in detail in Table 74 in Appendix E

Figure 22 Problem gambling status by race/ethnicity



Note: Some data are not shown due to unreliable estimates or cell size less than or equal to 5
Note: This information is presented in detail in Table 74 in Appendix E

Figure 23 Problem gambling status by education



Note: Some data are not shown due to unreliable estimates or cell size less than or equal to 5
Note: This information is presented in detail in Table 74 in Appendix E

Prevalence by Type of Gambling

Another way to understand the relationship between gambling involvement and gambling-related problems is to examine the prevalence of problem gambling among individuals who participate in specific types of gambling. Table 11 shows the prevalence of at-risk and problem gambling among respondents who participated in the past year in specific types of gambling. For example, while the prevalence of problem gambling was 2.0% in the adult

population and 2.8% among past-year gamblers, the prevalence of problem gambling was 13.1% among past-year horse race bettors.

Table 11 Differences in PG prevalence by type of gambling

	Unweighted N[1]	Weighted N[2]	At-risk gambler		Problem gambler	
			%[3]	95% CI[3]	%[3]	95% CI[3]
Total Sample/ Population	9,523	5,211,381	8.4	(7.5, 9.4)	2.0	(1.6, 2.6)
All Gambling	6,992	3,815,778	11.3	(10.1, 12.6)	2.8	(2.2, 3.5)
All lottery	5,775	3,218,277	12.7	(11.4, 14.2)	3.1	(2.5, 3.9)
Traditional	5,475	3,040,193	12.7	(11.3, 14.3)	3.3	(2.6, 4.2)
Instant games	3,462	1,939,550	16.3	(14.3, 18.4)	4.4	(3.4, 5.7)
Daily games	1,174	733,675	21.5	(18.1, 25.3)	7.6	(5.5, 10.4)
Raffles	3,471	1,634,656	10.9	(9.3, 12.8)	3.0	(2.1, 4.2)
Casino	1,839	1,051,276	18.1	(15.7, 20.9)	4.7	(3.5, 6.2)
Sports betting	1,023	660,696	18.3	(14.9, 22.4)	6.5	(4.4, 9.5)
Private wagering	840	575,696	18.5	(14.6, 23.2)	6.0	(3.8, 9.5)
Horse racing	330	178,272	18.6	(12.7, 26.4)	13.1	(7.7, 21.5)
Bingo	289	178,584	23.2	(16.9, 31.0)	NSF	
Online	110	82,189	28.0	(18.1, 40.7)	NSF	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4]Among those who never gambled in the past year, a small number of people bought high risk stocks, an activity which creates some potential risk for gambling-related problems.
Note: Insufficient information (NSF) indicates estimates are unreliable, relative standard error > 30%

This table shows that, generally speaking, the prevalence of at-risk and problem gambling has an inverse relationship to the popularity of gambling activities. For example, the prevalence of problem gambling was only slightly higher among respondents who have played the lottery in the past year (3.1%) compared to all gamblers in the Massachusetts population (2.8%).

While problem gambling prevalence rates were higher among players of the least popular gambling activities, it is important to note that—like gamblers in general—the majority of at-risk and problem gamblers in Massachusetts played the lottery (93.5% and 94.9% respectively) and gambled at casinos (47.4% and 51.5% respectively). In contrast, only 5.3% of at-risk gamblers and 15.2% of problem gamblers in Massachusetts gambled online. As the pool of players becomes smaller, at-risk and problem gamblers represent larger and larger proportions of those groups in the population because such individuals tend to participate in more gambling activities (see Table 75 in Appendix E for prevalence rates for each type of gambling in the survey).

There is solid evidence that some forms of gambling are more closely associated with problem gambling than other forms (Binde, 2011; Williams, Volberg, et al., 2012). While the association between particular forms of gambling and problem gambling is well-established, there has been recent attention given to involvement in multiple forms of gambling. Analyses of population surveys show that high involvement in gambling—defined as participation in multiple forms of gambling—is positively associated with problem gambling (Holtgraves, 2009; Phillips, Ogeil, Chow, & Blaszczynski, 2013; Volberg & Banks, 2002; Welte, Wieczorek, Tidwell, & Parker, 2004). Other analyses have suggested that when statistically controlling for involvement, the association

between problem gambling and most or all forms of gambling is significantly attenuated, disappears, or is even reversed (Afifi, LaPlante, Taillieu, Dowd, & Shaffer, 2014; LaPlante, Afifi, & Shaffer, 2013; LaPlante, Nelson, LaBrie, & Shaffer, 2011). A recent exploration of this issue in the Swedish context found that the association between gambling involvement and problem gambling is mediated by participation in specific forms of gambling and, in particular, by gambling intensity—that is, the amount of time and money spent gambling (Binde, Romild, & Volberg, 2017). This issue has important implications for prevention and harm minimization efforts and we plan future analyses of the Massachusetts data to explore this question further.

Another way to assess the relationship between specific types of gambling and gambling-related problems is to ask respondents whether a particular form of gambling has caused their problems. All respondents who scored 5 or more on the CPGI were asked if a particular type of gambling contributed to their problems more than others and, if so, to identify the gambling activity.[10] Of the 120 respondents who answered these questions, only 32 (26.7%) felt that a particular type of gambling had contributed to their problems more than others.[11] The forms of gambling most frequently identified as having caused a problem were instant lottery tickets and slot machines (see Table 76 in Appendix E for details). The small number of responses is not sufficient to classify these forms of gambling as particularly problematic, although it is consistent with what has been found in similar surveys in other jurisdictions.

Comparing Massachusetts to Other States

As with gambling participation, it is helpful to compare the prevalence of problem gambling in Massachusetts with comparable estimates from other jurisdictions. Problem gambling prevalence surveys have been conducted in many jurisdictions but substantial methodological differences in the measurement of problem gambling make cross-study comparisons difficult. A recent study by Williams, Volberg, and Stevens (2012) identified the main methodological differences across these surveys and developed weights that could be applied to obtain "standardized" prevalence rates for nearly all of the existing problem gambling prevalence studies conducted internationally. Using these standardized rates, it is possible to compare the problem gambling prevalence rate obtained in Massachusetts with rates from many other jurisdictions.[12]

Table 12 presents standardized past-year problem gambling prevalence rates for U.S. states where prevalence surveys have been conducted in the last ten years. Overall, this table shows that the past-year prevalence of problem gambling in Massachusetts was very similar to prevalence rates identified in other U.S. states, with only Ohio being significantly lower than Massachusetts ($p < .01$). It is not entirely clear why the prevalence rate in Ohio was so much lower than prevalence rates in other states. Review of the study methods used in Ohio found that the sample was limited to households with landline telephones and that data collection occurred before two of the four casinos in Ohio had opened (Massatti et al., 2015). Another possibility is that this result reflects lower problem gambling prevalence rates in the Midwest compared with other parts of the U.S. There is some empirical support for this view based on prevalence surveys conducted in the late 1980s as well as the most

[10] Creating an algorithm for this skip rule in the questionnaire using the PPGM proved difficult. The CPGI cutoff that produces the closest approximation of the PPGM typology was used instead.

[11] The finding that most problem gamblers report no specific form of gambling to be more problematic than others is consistent with what has been found in other research asking the same question (Williams, West, & Simpson, 2012). Addicts tend to be versatile in the products they consume. Although problem drinkers often have a preferred beverage, they nonetheless consume a wide range of alcoholic beverages. Similarly, drug abusers usually consume a wide range of substances in addition to the one that is causing the most problems.

[12] Weights were developed to adjust for the higher prevalence rates that are obtained when describing the survey as a "gambling" survey, the lower prevalence rates that are obtained when conducting a telephone interview rather than having the survey self-administered, and the different prevalence rates that are obtained using different assessment instruments (i.e., CPGI, SOGS, DSM).

recent prevalence survey in Iowa which obtained a standardized rate of 0.9% (Gonnerman & Lutz, 2011; Volberg, 1994).

Table 12 Comparing standardized problem gambling rates across states

State	Year	Sample Size	Standardized PG Rate
Ohio	2013	3507	0.7
Connecticut	2006	2298	1.1
Kentucky	2008	850	1.1
New Mexico	2005	2850	1.2
New York	2006	5100	1.2
Louisiana	2008	2400	1.3
Georgia	2007	1602	1.4
Michigan	2006	957	1.6
California	2006	7121	1.7
Iowa	2013	1826	1.7
Maryland	2010	5975	1.9
Massachusetts	2014	9578	2.0
Oregon	2005	1554	2.1
Washington	2004	6713	2.1

In addition to comparing the Massachusetts baseline survey to other jurisdictions, problem gambling prevalence from the baseline survey can be compared to data from the 2013 BRFSS. The 2013 BRFSS included three problem gambling questions, assessing respondents' past-year experiences of withdrawal, lying, and financial difficulties. Endorsement rates for the question about withdrawal (i.e., becoming restless or irritable when trying to stop or cut down on gambling) were quite similar across the two surveys. However, there were no adequate matches in the SEIGMA baseline survey to the other two problem gambling items in the 2013 BRFSS. Appendix G of this report provides a more extensive analysis of the similarities and differences between the 2013 BRFSS and SEIGMA Baseline Population Survey, including the wording of the problem gambling questions as well as endorsement rates for these items in the two surveys.

Conclusion

In this section of the report, we have provided an overview of how problem gambling was measured in the survey as well as information about the prevalence of problem gambling and the number of problem gamblers in Massachusetts prior to the opening of casinos. Additional material in this section includes information about the demographic distribution of problem gambling in the Commonwealth and differences in prevalence among participants in specific gambling activities. A key finding in this section of the report is that between 83,152 and 135,122 Massachusetts adults can be classified as problem gamblers. An additional 389,776 to 488,519 Massachusetts adults can be classified as at-risk gamblers.

As with other data from the Baseline General Population Survey, the information presented in this chapter of the report is descriptive and we plan further multivariate analyses of these data to assess the relationships between at-risk and problem gambling and demographics and gambling involvement. We also plan deeper analyses of data that were not highlighted in this report because of the small numbers of respondents who reported certain behaviors. For example, survey respondents in military service since September 11, 2001 reported a particularly high rate of problem gambling. We plan to look at this group more closely in future analyses to understand if this is an independent risk factor for problem gambling or the result of a correlation with some other condition or characteristic. Additionally, although estimates of suicidal ideation and attempted

suicide obtained in the Baseline General Population Survey are too small to be reliable, the data do indicate that suicidality is somewhat higher among problem gamblers in Massachusetts compared with others in the population. We plan to investigate this finding further using multivariate analyses and other data sources to clarify the relationship between problem gambling status and suicidality, and in particular whether problem gambling is an independent predictor of suicidality. In the next chapter of the report, we will focus on differences between individuals who gamble, with and without problems, in order to identify subgroups in the population that are at greatest risk of experiencing gambling-related difficulties.

CHAPTER 6:

Comparing Recreational, At-Risk, and Problem Gamblers

In considering how best to develop and refine policies and programs for problem gamblers, it is important to direct these efforts in an effective and efficient way. The most effective efforts at prevention, outreach, and treatment are targeted at individuals who are at greatest risk of experiencing gambling-related difficulties. Since the purpose of this chapter is to examine vulnerable individuals, our focus here is on differences between individuals who gamble, with and without problems, rather than on the entire sample of Massachusetts adults.

As illustrated in Chapter 1, recreational and at-risk gamblers far outnumber individuals in the population who experience gambling problems. Given the much greater size of the recreational and at-risk groups, some readers may argue that these individuals should not be examined as closely as individuals who are classified as problem gamblers. However, there is empirical evidence that some recreational and at-risk gamblers, on occasion, experience a loss of control over their gambling involvement or harm related to their gambling without developing more serious problems. There is even evidence that impaired control and subsequent problem development are a common and predictable consequence of regular, high-intensity gambling rather than something confined to a small minority of constitutionally predisposed or mentally disordered gamblers (Dickerson, Haw, & Shepherd, 2003).

For precisely these reasons—the size of the recreational and at-risk groups and the common experience of loss of control—we believe that particular attention should be paid to these groups. This is important both to better understand characteristics common among the majority of people who gamble without developing problems and to understand characteristics common among at-risk and problem gamblers. Identifying common characteristics among these groups is a critical first step in understanding the factors that might place a person at greater risk of, or protect a person from developing, a gambling problem. Understanding risk and protective factors involves deeper analysis than we have done here; however, examining descriptive statistics for these groups is a useful tool in articulating research questions and planning for subsequent analyses.

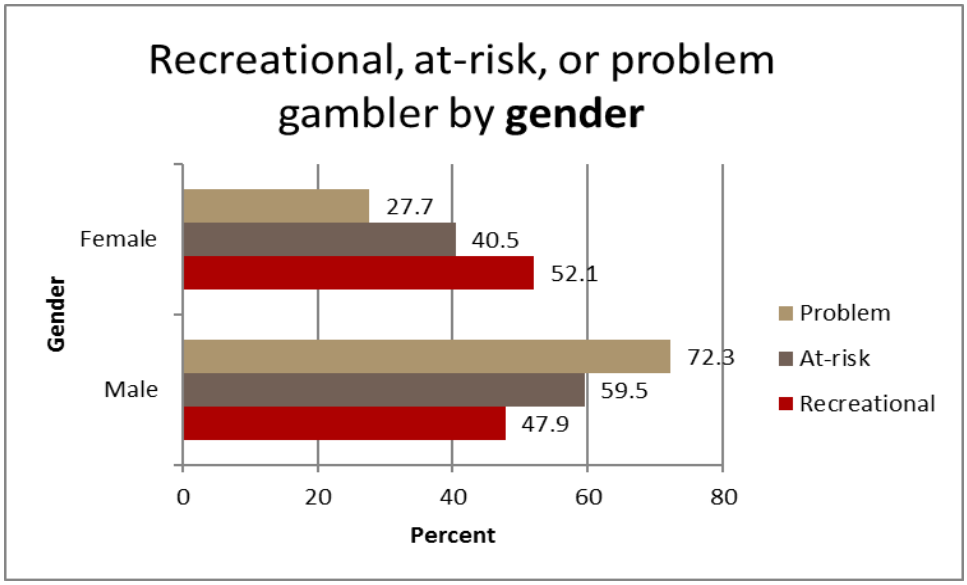
As noted in the previous chapter, the PPGM serves as the primary measure of recreational, at-risk, and problem gambling in Massachusetts. In this chapter, we examine differences between groups of respondents who score at increasing levels of severity on the PPGM in terms of demographics, gambling participation, and other important correlates of problem gambling. We have elected to collapse individuals classified as problem or pathological gamblers into one group, due to small sample sizes for these groups and the few statistically significant differences between the groups demographically or in patterns of gambling participation. We refer to this combined group as “problem gamblers” throughout the rest of this chapter.

Demographics

The following figures show that, as in many other jurisdictions, at-risk and problem gamblers in Massachusetts were demographically distinct from recreational gamblers. At-risk gamblers in Massachusetts were significantly more likely than recreational gamblers to be male and Black or Hispanic, to have a high school diploma or less, to be unemployed or disabled, and to have an annual household income less than $15,000 (Figure 24 - Figure 26; Table 77 in Appendix F). At-risk gamblers were significantly less likely than recreational gamblers to be

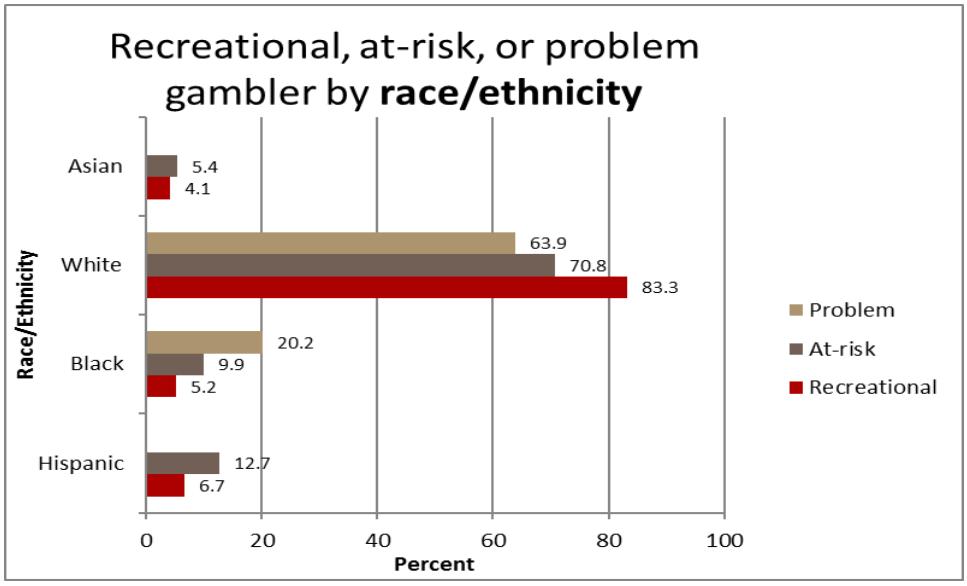
White and to have a college degree. Problem gamblers in Massachusetts were significantly more likely than recreational gamblers to be male and Black, to have attained only a high school diploma, and to be unemployed. Problem gamblers in Massachusetts were significantly less likely than recreational gamblers to be White. In contrast to many other jurisdictions, problem gamblers in Massachusetts did not differ from recreational gamblers in age. Table 77 in Appendix F presents information about differences in other demographic characteristics across the three groups.

Figure 24 Recreational, at-risk, and problem gambling status by gender



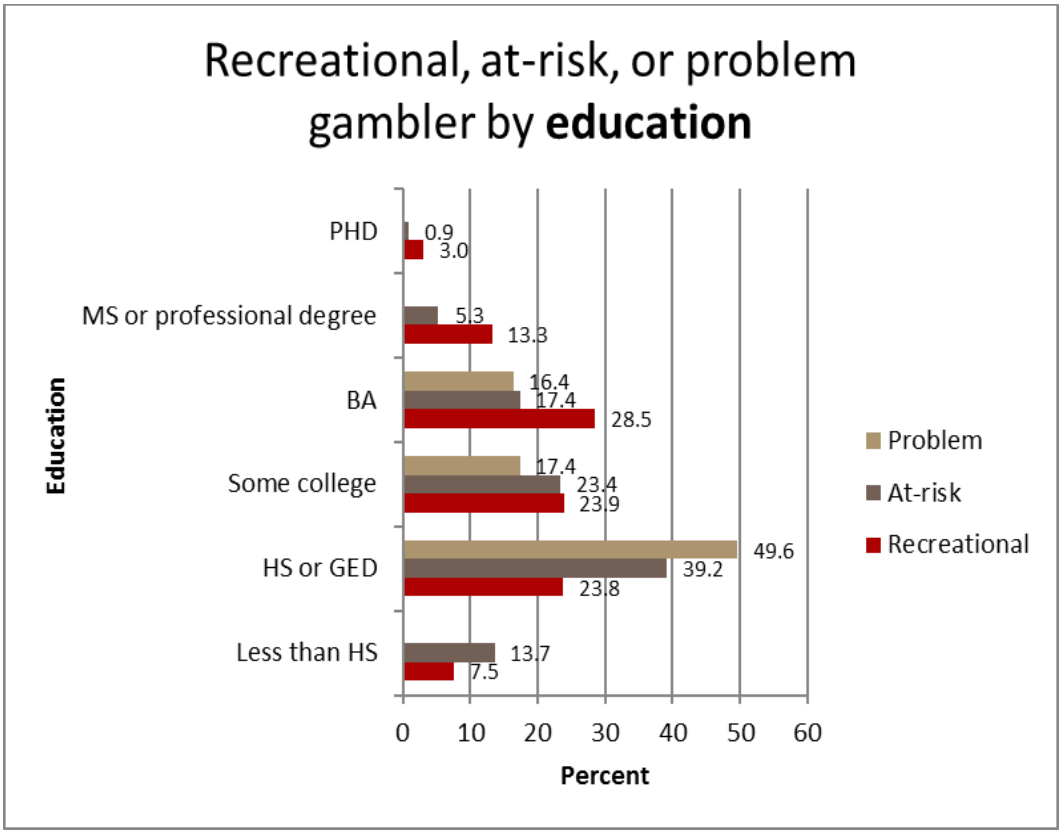
Note: This information is presented in detail in Table 77 in Appendix F

Figure 25 Recreational, at-risk, and problem gambling status by race/ethnicity



Note: Some data are not shown due to unreliable estimates or cell size less than or equal to 5
Note: This information is presented in detail in Table 77 in Appendix F

Figure 26 Recreational, at-risk, and problem gambling status by education



Note: Some data are not shown due to unreliable estimates or cell size less than or equal to 5
Note: This information is presented in detail in Table 77 in Appendix F

Gambling Participation

While information about the demographic characteristics of recreational, at-risk, and problem gamblers is useful in designing prevention and treatment services, it is also helpful to understand differences in the gambling behavior of these groups. Information about the behavioral correlates of problem gambling can help professionals design appropriate prevention and treatment measures, effectively identify vulnerable individuals, and establish accessible services.

Past-Year Gambling

It is hardly surprising that at-risk and problem gamblers participated in significantly more gambling activities than recreational gamblers in the past year. The average number of past-year gambling activities among recreational gamblers was 1.9 compared with 2.7 among at-risk gamblers ($p<0.0001$) and 3.2 among problem gamblers ($p<0.0001$).

The table below compares past-year gambling participation among recreational, at-risk, and problem gamblers. The table shows that at-risk and problem gamblers were significantly more likely than recreational gamblers to have played lottery games, gambled at a casino, bet on sports, or wagered privately in the past year. There were no significant differences between at-risk and problem gamblers in past-year participation in these activities.

Table 13 Past-year gambling participation by gambling type

	Recreational gambler		At-risk gambler		Problem gambler		
	%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Unweighted N[1]	6,271		600		129		
Weighted N[2]	3,278,144		439,884		105,738		
All lottery	82.8	(81.4, 84.2)	93.5	(89.4, 96.0)	94.9	(86.0, 98.3)	<0.0001
Traditional	78.0	(76.5, 79.4)	88.0	(83.3, 91.5)	94.5	(85.8, 98.0)	<0.0001
Instant games	47.2	(45.4, 49.0)	73.0	(67.4, 77.9)	81.6	(71.3, 88.7)	<0.0001
Daily games	16.0	(14.7, 17.4)	36.4	(31.0, 42.3)	52.6	(40.9, 64.0)	<0.0001
Casino	26.2	(24.6, 27.8)	47.4	(41.4, 53.4)	51.5	(39.6, 63.3)	<0.0001
Raffles	43.4	(41.6, 45.1)	40.9	(35.3, 46.8)	47.4	(35.9, 59.3)	0.5738
Sports betting	15.2	(13.9, 16.6)	27.6	(22.5, 33.3)	40.7	(29.4, 53.0)	<0.0001
Private wagering	13.4	(12.1, 14.8)	24.3	(19.3, 30.1)	33.0	(22.2, 46.0)	<0.0001
Horse racing	3.7	(3.1, 4.5)	7.6	(5.0, 11.2)	22.3	(13.3, 35.0)	0.0007
Online	1.3	(0.9, 1.9)	5.3	(3.4, 8.3)		NSF	0.0003
Bingo	3.7	(3.0, 4.5)	9.4	(6.7, 13.1)		NSF	0.0001

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups
Note: Insufficient Information (NSF) indicates estimates are unreliable, relative standard error > 30%

The pattern for past-year playing of daily lottery games and horse race betting is somewhat different from other gambling activities. The rate of past-year participation in daily lottery games and horse race betting was significantly higher for at-risk gamblers compared to recreational gamblers, and significantly higher for problem gamblers compared with at-risk gamblers.

Monthly Gambling

Table 14 presents monthly or more frequent gambling participation rates among recreational, at-risk, and problem gamblers. Since monthly gambling was one of the criteria for classifying individuals as problem gamblers, it is not surprising that all of the problem gamblers gambled monthly or more often. However, monthly gambling was also significantly higher among at-risk gamblers compared with recreational gamblers.

The table shows that four out of ten recreational gamblers (40.2%) purchased lottery products once a month or more often compared with 78.5% of at-risk gamblers and 87.2% of problem gamblers. The difference in monthly participation was highest for daily lottery games, which only 5.8% of recreational gamblers played monthly or more often compared with 25.2% of at-risk gamblers and 38.9% of problem gamblers. In contrast to past-year participation in raffles where there was no significant difference across groups, at-risk gamblers were significantly more likely than recreational gamblers to purchase raffles once a month or more often and problem gamblers were significantly more likely than either other group to purchase raffles on a monthly or more frequent basis.

Table 14 Monthly gambling participation by gambling type

	Recreational gambler		At-risk gambler		Problem gambler		
	%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Unweighted N[1]	6,271		600		129		
Weighted N[2]	3,278,144		439,884		105,738		
Any Gambling	46.5	(44.7, 48.3)	86.7	(82.1, 90.2)	100.0	NA	<0.0001
All lottery	40.2	(38.4, 42.0)	78.5	(73.4, 82.9)	87.2	(78.0, 93.0)	<0.0001
Traditional	35.6	(33.9, 37.3)	68.3	(62.6, 73.5)	83.1	(73.5, 89.6)	<0.0001
Instant games	20.3	(18.8, 21.8)	55.2	(49.3, 61.1)	70.7	(59.6, 79.8)	<0.0001
Daily games	5.8	(5.0, 6.8)	25.2	(20.3, 30.8)	38.9	(27.9, 51.0)	<0.0001
Sports betting	3.9	(3.2, 4.7)	13.2	(9.5, 17.9)	28.1	(18.1, 40.9)	<0.0001
Raffles	6.8	(5.9, 7.8)	13.1	(9.5, 17.7)	29.0	(18.9, 41.8)	<0.0001
Private wagering	4.7	(3.9, 5.6)	13.4	(9.6, 18.2)	21.7	(12.2, 35.5)	<0.0001
Casino	0.4	(0.2, 0.6)	7.0	(4.6, 10.7)	11.4	(6.8, 18.4)	<0.0001
Horse racing	0.7	(0.5, 1.1)	NSF		NSF		0.0084
Bingo	1.1	(0.8, 1.6)	3.7	(2.3, 6.0)	NSF		0.0040

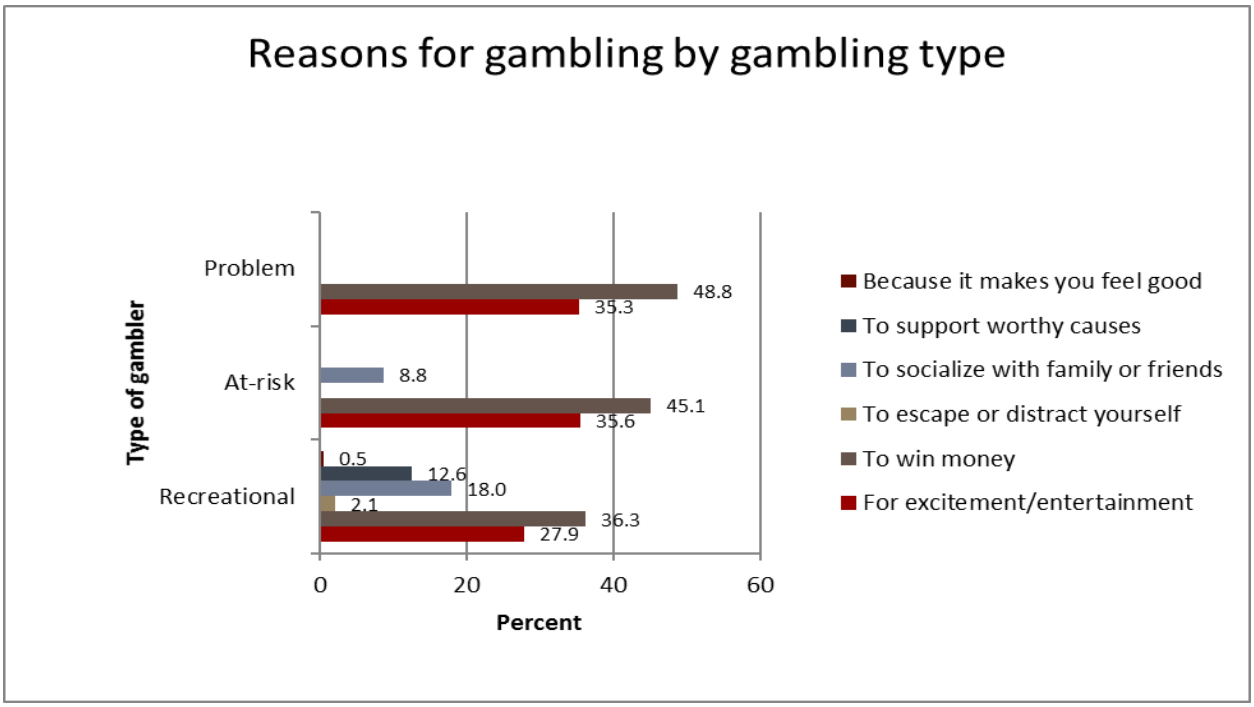
[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups
Note: Insufficient Information (NSF) indicates estimates are unreliable, relative standard error > 30%

After lottery and raffles, recreational gamblers were mostly likely to engage in private wagering and sports betting. While only 4.7% of recreational gamblers wagered privately on a monthly basis, 13.4% of at-risk gamblers and 21.7% of problem gamblers wagered privately once a month or more often. Similarly, only 3.9% of recreational gamblers bet on sports once a month or more often, compared with 13.2% of at-risk gamblers and 28.1% of problem gamblers. Monthly gambling participation among recreational gamblers was below 1% for casino gambling and horse race betting. The rate of monthly casino gambling was significantly higher among at-risk gamblers and problem gamblers compared with recreational gamblers.

Reasons for Gambling

Table 78 in Appendix F presents tabular information about the reasons that recreational, at-risk, and problem gamblers in Massachusetts gave for their past-year gambling participation. The figure below shows that all three groups named "winning money" as the most important reason for gambling, followed by "excitement and/or entertainment." While winning money was the most important reason for gambling among all three groups, endorsement of this reason was not significantly higher than "excitement and/or entertainment" among at-risk and problem gamblers.

Figure 27 Reasons for gambling by gambling type



Note: Some data are not shown due to unreliable estimates or cell size less than or equal to 5
Note: This information is presented in detail in Table 78 in Appendix F

While gambling to win money was endorsed by one third of recreational gamblers, a significantly higher proportion of at-risk gamblers endorsed this reason for gambling. Similarly, excitement and/or entertainment was endorsed by 27.9% of the recreational gamblers but a significantly higher proportion of at-risk gamblers endorsed this reason. The proportion of problem gamblers who said that "excitement and/or entertainment" was their main reason for gambling was not significantly higher than recreational gamblers. Recreational gamblers were more likely to endorse "to socialize with family and friends" as their main reason for gambling compared to at-risk gamblers.

Gambling Expenditures by Gambler Group

Beyond participation, spending on different gambling activities is another important measure of gambling participation. When respondents report accurately, their expenditures can be compared to actual and projected revenues to validate expenditures and to clarify whether revenue projections are accurate. When reported accurately, these numbers can also shed light on the proportion of gambling revenue derived from recreational, at-risk, and problem gamblers. This issue is important to researchers and the general public alike, many of whom argue that the legitimacy of gambling and its continued expansion depends in part on the extent to which gambling revenues are derived from vulnerable individuals (Eadington, 2009; Orford, Wardle, & Griffiths, 2013; Rose, 1986; Williams & Wood, 2004). However, as mentioned in Chapter 4, accurate expenditure data can be difficult to obtain. The majority of surveys, including the Baseline General Population Survey, have obtained significant underestimates of actual gambling expenditure (Volberg et al., 2001; Williams & Wood, 2007; Wood & Williams, 2007).

Despite these limitations, self-reported expenditure data provide a valuable lens into the relative proportion of gambling expenditures by the recreational, at-risk, and problem gamblers in our sample. In this section, we

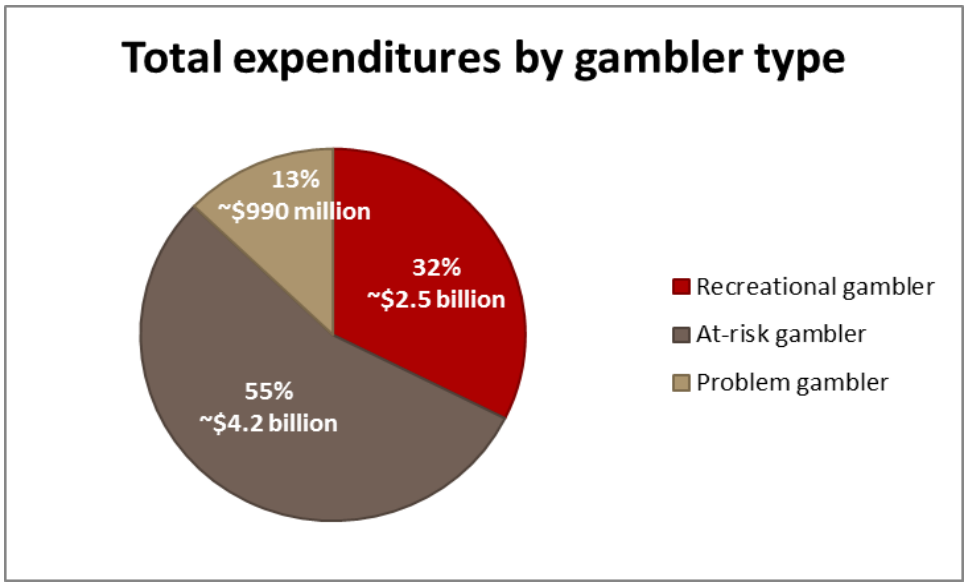
briefly review the methods used to analyze expenditure data from the Baseline General Population Survey and discuss the relative proportion of expenditures by each group of past-year gamblers. A fuller discussion of expenditure data is provided in Appendix D1.

Assessing the Relative Proportion of Expenditures Reported by Each Gambler Group

As noted in Chapter 4, we elected to eliminate extreme and improbable outliers in these data. We first examined the average amount of money that each group of past-year gamblers reported spending on all forms of gambling. We found that problem gamblers in Massachusetts reported spending an average of approximately $9,400 annually on gambling compared to approximately $9,700 spent annually by at-risk gamblers and $760 by recreational gamblers. For additional information about average spending, see Table 79 in Appendix F.

We then looked at the total amount of money that each group of past-year gamblers spent on each gambling activity. Overall, gamblers in Massachusetts spent $7.7 billion on all forms of gambling in the past year; recreational gamblers spent approximately $2.5 billion, while at-risk gamblers spent approximately $4.2 billion, and problem gamblers spent $990 million. We then divided these amounts by the total overall expenditure to determine the proportion of expenditures by each group of past-year gamblers.

Figure 28 Total expenditures on all gambling by gambler type



Note: These data were truncated by 4 standard deviations from the mean to account for extreme outliers; weighted values were used to calculate overall expenditure
Note: This information is presented in detail in Table 80 in Appendix F

Figure 28 shows that recreational gamblers accounted for 32% of total expenditure, while at-risk gamblers accounted for 55% of total expenditure, and problem gamblers accounted for 13% of total expenditure.

In reviewing these data, it is clear that on average, individual at-risk and problem gamblers spent much more on gambling than recreational gamblers. It is especially interesting to compare the proportion of expenditures shown in the figure above with the proportion of each gambler group in our sample. For example, although recreational gamblers constituted 62.9% of our sample (see Table 9 in Chapter 5), they accounted for only 32% of reported expenditures. This disparity is even more noticeable for at-risk and problem gamblers; while at-risk

gamblers constituted only 8.4% of our sample, they accounted for 55% of reported expenditures, and while problem gamblers constituted only 2.0% of our sample, they accounted for 13% of reported expenditures.

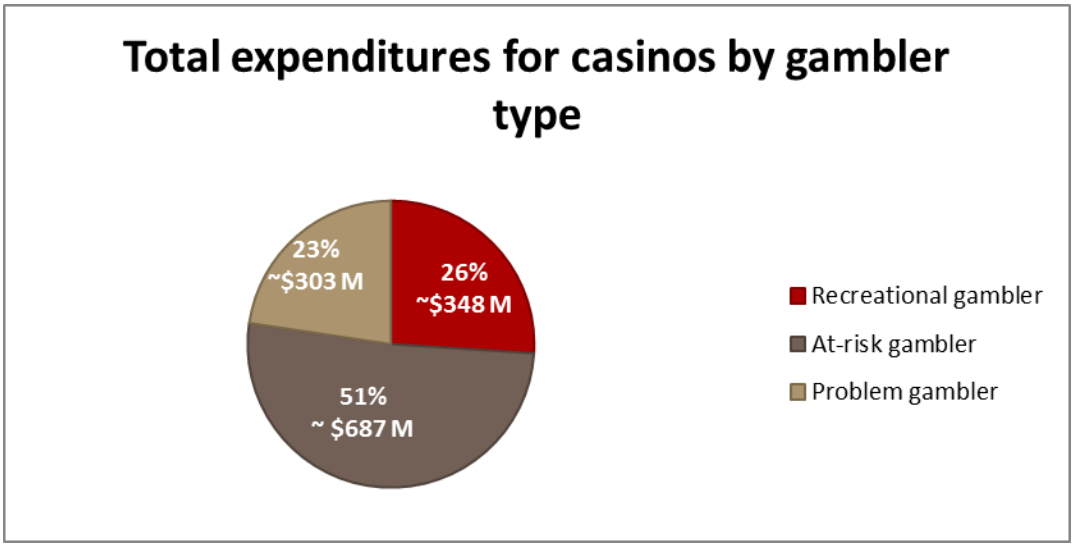
These findings may have most relevance for developing strategies to prevent at-risk gamblers from developing gambling problems over time. This group accounted for the largest proportion of reported gambling expenditures, which indicates a need to create responsible gambling campaigns and programs that target at-risk gamblers. Similarly, because problem gamblers accounted for a large share of self-reported expenditures relative to the size of this group in the sample, there may be a need to develop specialized treatment strategies that address the issue of gambling expenditures. Going forward, these proportions should be monitored over time to see if and how they change in the wake of expanded gambling.

Assessing the Relative Proportion of Casino Expenditures Reported by Each Gambler Group

We also examined the average amounts that each group of past-year gamblers reported spending on casino gambling. Problem gamblers in Massachusetts reported spending approximately $6,300 annually on casino gambling compared to approximately $3,800 spent annually by at-risk gamblers, and $450 by recreational gamblers. For additional information about average spending, see Table 79 in Appendix F.

We then looked at the total amount of money that each group of past-year gamblers spent on casino gambling. Overall, recreational gamblers spent approximately $348 million on casino gambling in the past year. At-risk gamblers spent around $687 million and problem gamblers spent close to $303 million. We divided these totals by the total amount spent on casino gambling to determine the proportion of expenditures for each group of past-year gamblers. Recreational gamblers accounted for 26% of casino expenditures, while at-risk gamblers accounted for 51% of casino expenditures, and problem gamblers accounted for 23% of casino expenditures.

Figure 29 Casino expenditures by gambler type



Note: These data were truncated by 4 standard deviations from the mean to account for extreme outliers; weighted values were used to calculate overall expenditure
Note: This information is presented in detail in Table 80 Appendix F

These data tell a similar story to overall gambling expenditure. It is clear that, on average, individual at-risk and problem gamblers are spending much more on casino gambling than recreational gamblers. While the proportions of money that each group reported spending on casino gambling are lower than the proportions of

expenditure on all forms of gambling combined, these findings have relevance for responsible gambling strategies and tools within the state's new casinos.

Other Correlates of Problem Gambling

One of our principal research questions relates to the social, health, and economic correlates of problem gambling in the Massachusetts population. In this section, we present information about the physical and mental health correlates of problem gambling, including use of tobacco, alcohol, and illicit drugs. We then examine some of the social and financial correlates of problem gambling.

Physical and Mental Health

Table 15 presents differences between recreational, at-risk, and problem gamblers on several health-related dimensions. The table shows that problem gamblers were significantly more likely than recreational gamblers in Massachusetts to identify their physical health status as poor or fair as opposed to good or excellent. The table also shows that at-risk and problem gamblers were significantly more likely than recreational gamblers to say that they had experienced serious problems with depression, anxiety, or other mental health problems both in the past year and in the past 30 days. Finally, at-risk gamblers were significantly more likely than recreational gamblers to agree that their childhood was unhappy or very unhappy.

Table 15 Differences in physical and mental health by gambler type

	Recreational gambler		At-risk gambler		Problem gambler		
	%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Unweighted N[1]	6,271		600		129		
Weighted N[2]	3,278,144		439,884		105,738		
General Health (poor to fair)	11.7	(10.6, 12.9)	16.4	(12.5, 21.2)	22.7	(14.1, 34.5)	0.0195
Depression (past 30 days)	10.9	(9.8, 12.2)	22.1	(17.2, 28.0)	26.4	(16.9, 38.9)	<0.0001
Depression (past 12 months)	16.4	(15.0, 17.9)	26.3	(21.0, 32.3)	29.9	(19.7, 42.5)	0.0007
Unhappy childhood	6.1	(5.3, 7.1)	12.0	(8.3, 17.1)	11.7	(6.6, 19.8)	0.0109

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups

Tobacco, Alcohol, and Illicit Drugs

Table 16 presents information about tobacco, alcohol, and illicit drug use among recreational, at-risk, and problem gamblers in Massachusetts. The table shows that at-risk and problem gamblers were significantly more likely to use tobacco than recreational gamblers. The table also shows that past-year use of illicit drugs was significantly higher among problem gamblers compared with recreational gamblers. Given the abundance of research demonstrating a link between alcohol misuse and gambling-related problems (el-Guebaly et al., 2006; French, Maclean, & Ettner, 2008; Momper et al., 2010; Petry et al., 2005), it is not surprising that at-risk and problem gamblers in Massachusetts were significantly more likely than recreational gamblers to acknowledge binge drinking in the past 30 days.

Table 16 Tobacco, alcohol, and drug use by gambler type

		Recreational gambler		At-risk gambler		Problem gambler		
		%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Unweighted N[1]		6,271		600		129		
Weighted N[2]		3,278,144		439,884		105,738		
Tobacco use	No	81.3	(79.7, 82.8)	73.1	(66.9, 78.5)	65.9	(53.7, 76.2)	0.0019
	Yes	18.7	(17.2, 20.3)	26.9	(21.5, 33.1)	34.1	(23.8, 46.3)	
Binge drinker (past 30 days)	No	66.5	(64.7, 68.3)	57.2	(51.0, 63.2)	42.1	(31.0, 54.1)	<0.0001
	Yes	33.5	(31.7, 35.3)	42.8	(36.8, 49.0)	57.9	(45.9, 69.0)	
Illegal drug use (past 12 months)	No	87.6	(86.1, 88.9)	85.4	(80.2, 89.4)	76.2	(63.8, 85.3)	0.1057
	Yes	12.4	(11.1, 13.9)	14.6	(10.6, 19.8)	23.8	(14.7, 36.2)	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups
Note: Table 81 in Appendix F provides additional information about alcohol use and problems with alcohol or drugs (in past 12 months)

Social and Financial Impacts

One important difference between recreational, at-risk, and problem gamblers relates to the number of people in their social networks who also gamble. In response to a question about what proportion of close friends and family members were regular gamblers, recreational gamblers indicated that 52.4% of their friends and family members gambled regularly. In contrast, 78.6% of at-risk gamblers and 88.2% of problem gamblers indicated that some, most, or all of their close friends and family members gambled regularly (p<0.0001) (see Table 82 in Appendix F).

Table 17 Differences in social and financial impacts by gambler type

		Recreational gambler		At-risk gambler		Problem gambler		
		%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Unweighted N[1]		6,271		600		129		
Weighted N[2]		3,278,144		439,884		105,738		
Know person who gambles too much	No	82.3	(80.8, 83.7)	68.2	(62.2, 73.7)	60.6	(48.6, 71.4)	<0.0001
	Yes	17.7	(16.3, 19.2)	31.8	(26.3, 37.8)	39.4	(28.6, 51.4)	
Household debt	No debt	20.7	(19.2, 22.3)	23.2	(18.0, 29.4)	NSF		0.0576
	< $10K	8.7	(7.7, 10.0)	9.4	(6.3, 13.9)	NSF		
	$10-<200K	49.3	(47.4, 51.2)	52.6	(46.3, 58.7)	58.5	(46.2, 69.7)	
	$200K+	21.2	(19.8, 22.7)	14.8	(11.1, 19.4)	15.3	(9.0, 24.7)	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups
Note: Insufficient Information (NSF) indicates estimates are unreliable, relative standard error > 30%

Another important difference between recreational, at-risk, and problem gamblers relates to their social networks. Table 17 shows that at-risk and problem gamblers were significantly more likely than recreational

gamblers to indicate that they knew someone who gambled too much. Table 17 also demonstrates that at-risk gamblers were significantly less likely than recreational gamblers to estimate their household debt to be $200,000 or more.

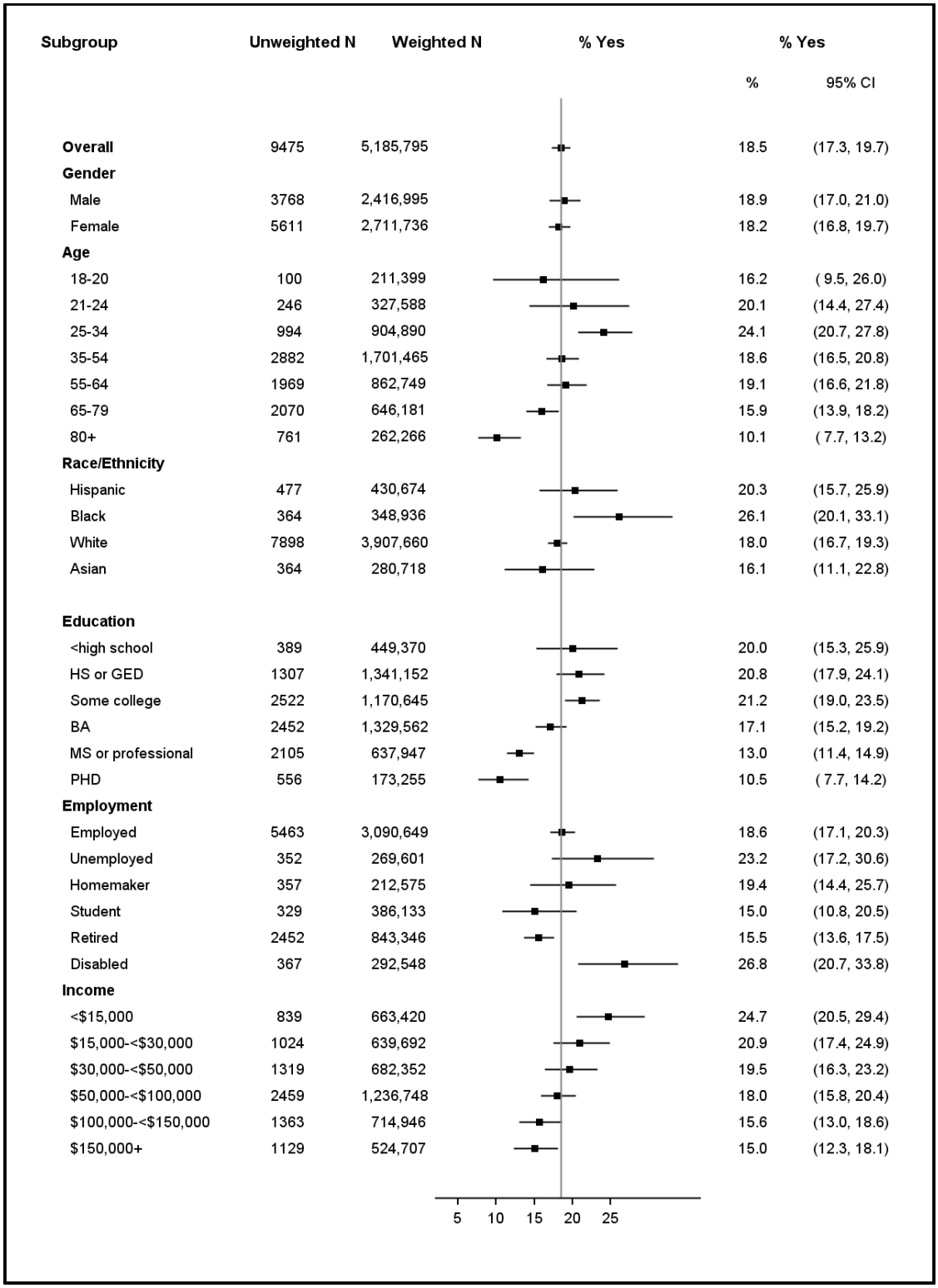
The Impacts of Problem Gambling in Massachusetts

Up to this point, we have discussed differences between recreational, at-risk, and problem gamblers in Massachusetts. However, it is also important to consider how Bay Staters may have been affected by someone else's gambling. All of the survey respondents were asked whether, in the last 12 months, there was a person in their life who they considered gambled too much. Nearly two in ten respondents (18.5%) said that there was a person in their life who they considered gambled too much (Figure 30), compared to the 10.4% of respondents that were classified as at-risk or problem gamblers based on the PPGM. As shown above in Table 17, respondents who said there was someone in their life who gambled too much were significantly more likely to be at-risk or problem gamblers rather than recreational gamblers.

As Figure 30 makes clear, respondents with someone in their life who they considered gambled too much were significantly more likely to be aged 25 to 34 rather than 65 and older. These respondents were also significantly more likely to have annual household incomes under $15,000 as opposed to $50,000 and higher (see Table 83 in Appendix F for information about additional subgroups in the population).

Respondents who indicated that there was someone in their life who they considered gambled too much were asked about their relationship to that person. Overall, these respondents were most likely to say that the person was a family member outside their household (31.1%) or a friend (28.8%). They were less likely to say that the person was a parent or step-parent (13.4%), a work colleague (7.6%), or a spouse or partner (7.1%) (see Table 84 in Appendix F). In response to a follow-up question, these respondents were most likely to say that financial strife, borrowing money, or difficulty covering household expenses was the most important effect of the person's gambling, followed by "emotional pain, neglect, concern, or frustration" about the person's gambling. Other effects included reduced time spent socializing, not fulfilling family or household obligations, failing to do something they had promised or were supposed to do, and stealing money or valuables (see Table 85 in Appendix F).

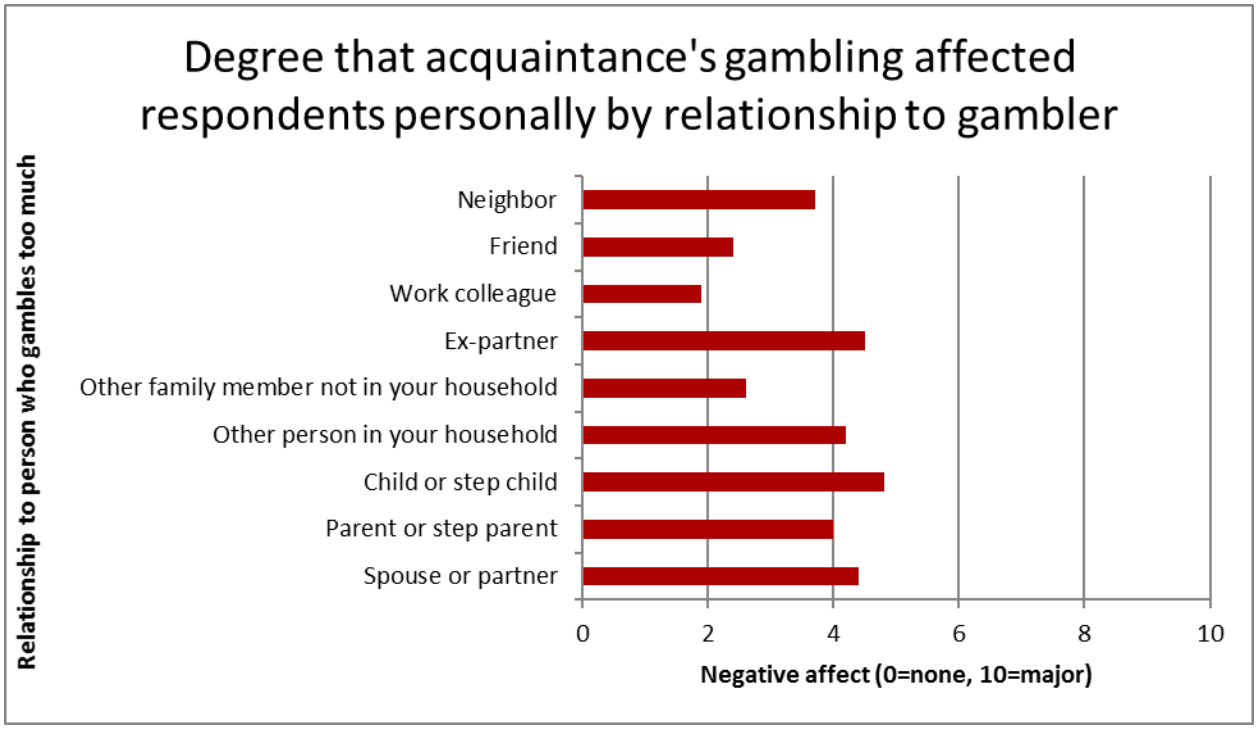
Figure 30 Percentage of respondents who had person in their life in the past year who they considered gambled too much



Note: Unweighted N refers to the total number of respondents who answered this question
Note: Weighted N is the total number of respondents who answered the question weighted to the MA population
Note: Vertical reference line represents overall % participated
Note: This information is presented in detail in Table 83 in Appendix F

Finally, respondents who indicated that there was someone in their life who they considered gambled too much were asked about the extent to which the person's gambling affected them on a scale from 1 to 10. The following figure shows differences in the extent of the impact of another person's gambling by their relationship to the respondent. Generally speaking, more negative impacts were associated with closer relationships. For example, while a child or step-child's gambling was a concern for only 3.5% of respondents in the survey, this relationship was associated with the greatest negative impact.

Figure 31 Degree that acquaintance's gambling affected respondents personally by relationship to gambler



Note: This information is presented in detail in Table 86 in Appendix F

Conclusion

In this chapter of the report, we have examined similarities and differences across groups of gamblers with the goal of better understanding the majority of people who gamble without developing problems and to understand characteristics common among individuals that have been classified as at-risk or problem gamblers. We have presented information on the demographic characteristics, gambling participation rates, reasons for gambling, gambling expenditures, and some social, health, and financial consequences of gambling across recreational, at-risk, and problem gamblers. We have also presented information on the impacts of another person's gambling on Massachusetts adults. A key finding in this chapter of the report is that far more Massachusetts adults have someone in their life whose gambling causes them concern than are classified as at-risk and problem gamblers.

It is likely that some of the differences between recreational, at-risk, and problem gamblers identified here are the result of correlations with underlying factors. For example, statistically significant differences across the groups in employment or marital status may actually be due to respondents' age. Examining differences such as this will help us develop research questions, generate hypotheses, and plan for additional analyses. Going forward, we plan to conduct deeper analyses to determine which variables remain predictive of at-risk and problem gambling status after controlling for such correlations in order to assess the relative importance of

different risk and protective factors. Identifying important risk and protective factors, in turn, will allow us to make evidence-based recommendations for developing problem gambling prevention, outreach, and treatment initiatives in the Commonwealth.

CHAPTER 7:

Problem Gambling Services in Massachusetts: Awareness and Access

Previous research has found that over time, many problem gamblers recover without the aid of professional treatment. Indeed, the literature indicates that the number of people who have recovered on their own may greatly exceed the number of people who ever seek treatment (Castellani, 2000; Hodgins, Currie, el-Guebaly, & Peden, 2004; Korn & Shaffer, 1999). These findings indicate that the behavior of problem gamblers may be more susceptible to change than was previously thought. These findings also highlight the importance of increasing public awareness and developing brief, targeted interventions to prompt changes in attitude and behavior among individuals experiencing mild or moderate difficulties to reduce their progression toward more severe gambling-related problems. Although few evaluations of problem gambling awareness campaigns have been carried out, one lesson from these studies is the importance of conducting research to identify the characteristics of groups at risk and targeting messages to these groups (Abbott et al., 2004).

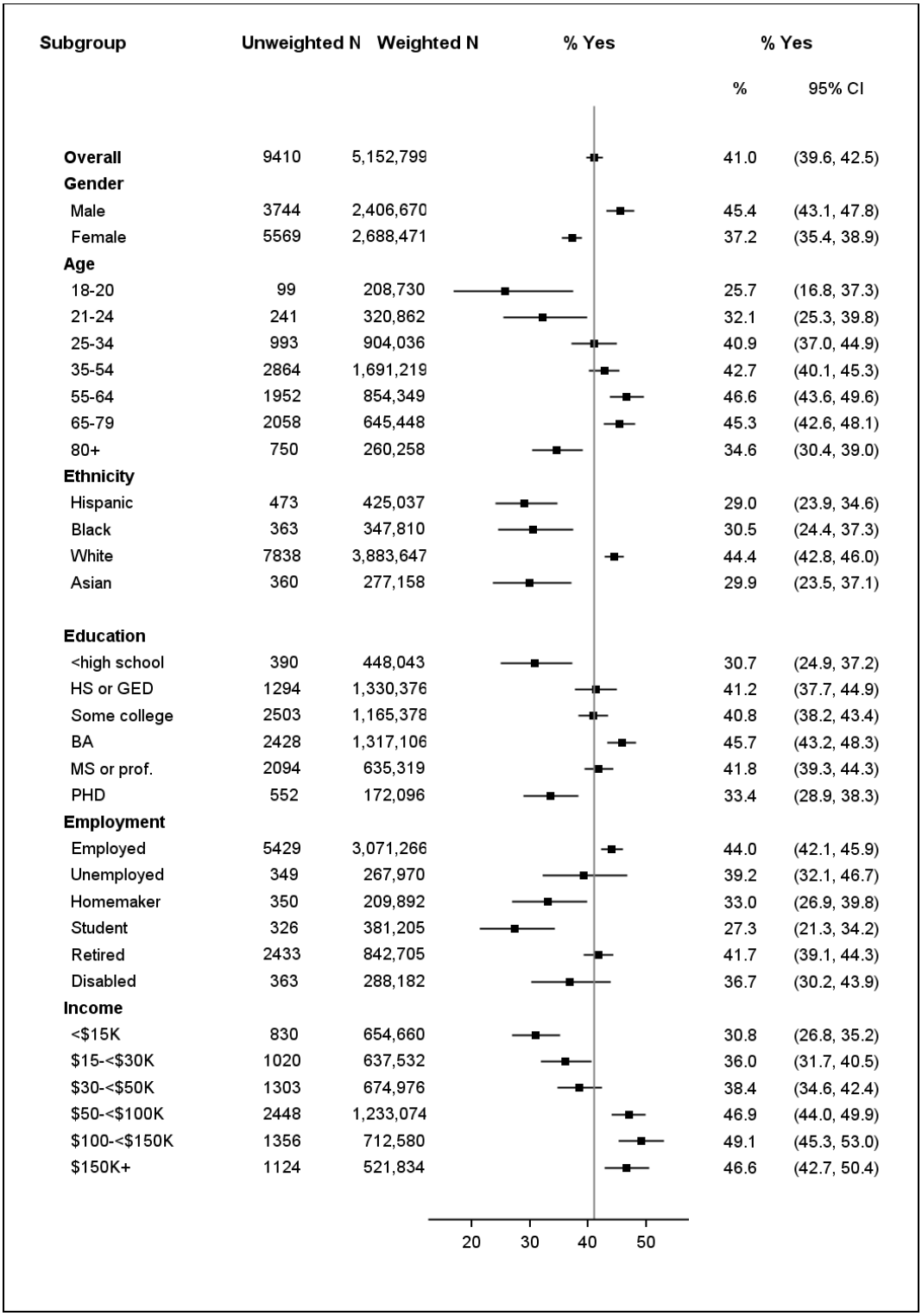
One goal of the Baseline General Population Survey was to collect information about the public's knowledge of available resources for addressing gambling problems in Massachusetts and involvement with such services. In previous chapters of this report, we presented information about specific subgroups in the population who are at risk of, or are already, experiencing difficulties related to their gambling. In this chapter, we present information about awareness of and access to problem gambling services in the adult population of Massachusetts. This information is important in the design of general and targeted awareness and prevention programs and in the development of strategies to provide help to groups affected by gambling-related problems in the Commonwealth.

Awareness of Problem Gambling Prevention Efforts

All of the respondents in the survey were asked whether they had seen or heard any media campaigns to prevent problem gambling in Massachusetts in the past 12 months. Respondents were also asked whether they were aware of any programs to prevent problem gambling offered in their schools, workplaces, or communities in the past 12 months. Finally, respondents who were aware of a problem gambling program or campaign were asked whether they had participated in any of these programs or campaigns.

As shown in Figure 32, overall, 41.0% of survey respondents indicated that they were aware of media campaigns to prevent problem gambling in Massachusetts in the past year. Men were significantly more likely than women to be aware of such media campaigns as were Whites compared to other racial and ethnic groups. Adults aged 55 to 79 were significantly more likely than adults under the age of 25 to be aware of such campaigns. Awareness of media campaigns to prevent problem gambling was significantly higher among individuals with a Bachelor's degree compared to those without a high school diploma or those with a PhD. Awareness was also significantly higher among employed individuals compared with homemakers and students and among those with annual household incomes over $50,000 compared to those with annual household incomes under $50,000. Respondents from Western Massachusetts were significantly more likely to be aware of media campaigns to prevent problem gambling than those from Southeastern Massachusetts. A complete table of awareness of media campaigns by demographics can be found in Table 90 in Appendix H.

Figure 32 Awareness of media campaigns to prevent problem gambling



Note: Unweighted N refers to the total number of respondents who answered this question
Note: Weighted N is the total number of respondents who answered the question weighted to the MA population
Note: Vertical reference line represents overall % participated
Note: Insufficient Information (NSF) indicates estimates are unreliable, relative standard error > 30%
Note: This information is presented in detail in Table 91 in Appendix H

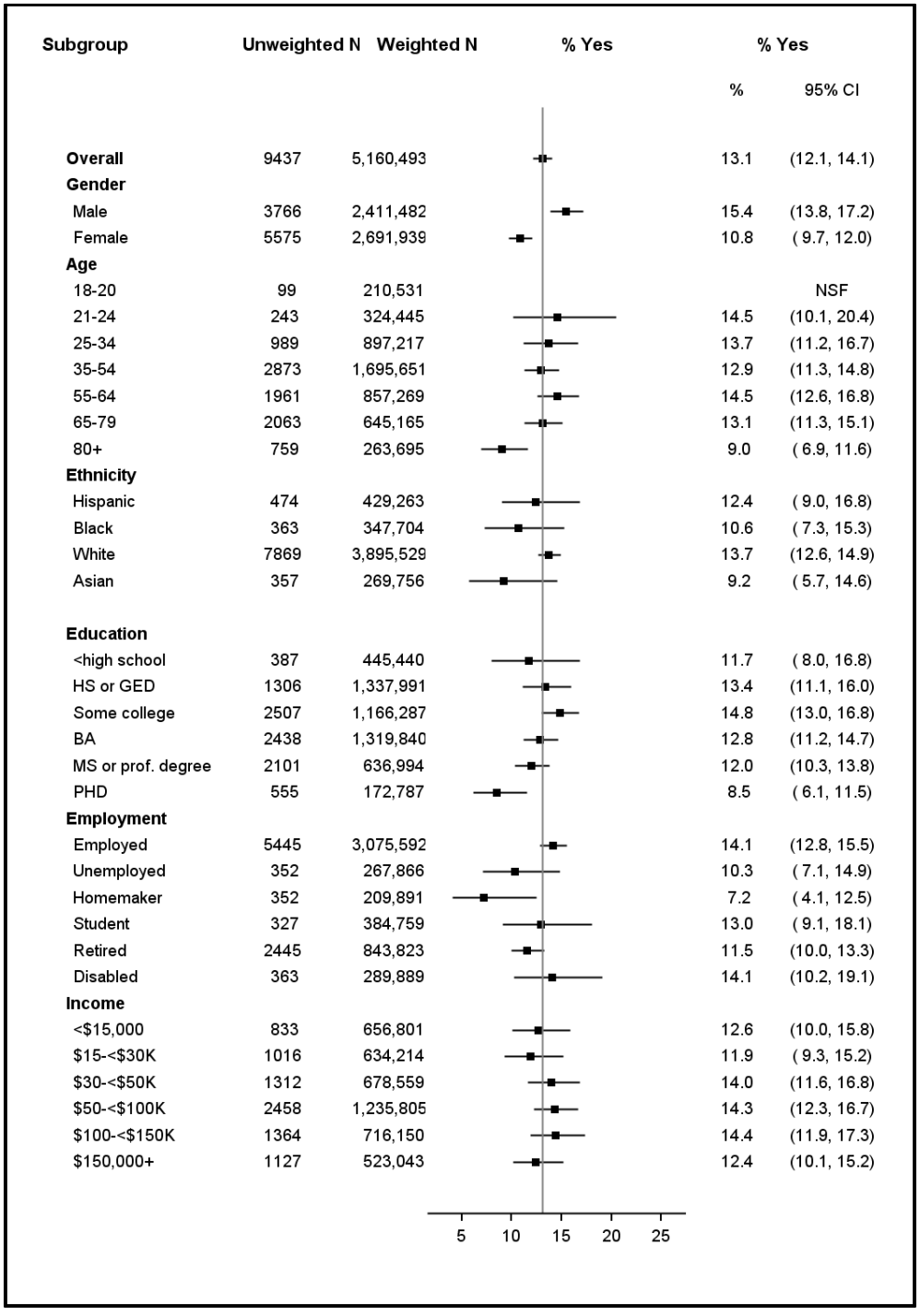
Table 91 in Appendix H presents information about awareness of media campaigns to prevent problem gambling by gambling type. This table shows that awareness of media campaigns was significantly lower among non-gamblers compared with recreational, at-risk, and problem gamblers. Awareness did not differ significantly across the three gambling groups.

Awareness of problem gambling prevention programs other than media campaigns in Massachusetts was much lower (13.1%) compared to awareness of media campaigns (41.0%) (Figure 32-Figure 33). As shown in Figure 33 below, awareness of non-media prevention efforts was significantly lower among women compared with men. Awareness of non-media prevention efforts was also significantly higher among employed individuals compared with homemakers. Very few respondents who were aware of non-media campaigns (2.1%) indicated that they had participated in any of the problem gambling prevention programs that they had heard of in the past year.

A complete table of awareness of other programs by demographics can be found in Table 92 in Appendix H. This table shows that awareness of problem gambling prevention programs other than media campaigns was significantly higher among those with drug or alcohol use problems compared with individuals without such problems and among respondents from Western Massachusetts compared to those from Greater Boston.

Table 93 in Appendix H presents information about awareness of problem gambling prevention programs other than media campaigns by gambling type. This table shows that awareness of such programs was significantly lower among non-gamblers compared with recreational gamblers. The table also shows that awareness of such programs was significantly higher among at-risk and problem gamblers compared with recreational gamblers.

Figure 33 Awareness of other programs to prevent problem gambling



Note: Unweighted N refers to the total number of respondents who answered this question
Note: Weighted N is the total number of respondents who answered the question weighted to the MA population
Note: Vertical reference line represents overall % participated
Note: Insufficient Information (NSF) indicates estimates are unreliable, relative standard error > 30%
Note: This information is presented in detail in Table 93 in Appendix H

Use of Problem Gambling Treatment Services and Barriers to Treatment-Seeking

The Baseline General Population Survey also included questions about desire for treatment and treatment-seeking among respondents who were classified as problem gamblers. Respondents who scored 5 or higher on the CPGI were asked if they wanted help for gambling problems within the past 12 months.[13] If they responded yes, they were asked if they sought help for these problems. Similarly, if a respondent reported that they sought help, they were asked to rate how helpful it was. A very small number of respondents answered "yes" to any of these questions. For this reason, we have not included the results of these questions within this chapter. However, it is interesting to consider these low numbers in contrast to the 83,152 to 135,122 people represented by the 129 respondents who scored as having a gambling problem as reported in an earlier chapter (see Table 9 in Chapter 5). This hints at possible disparities between the experience of having a gambling problem, recognizing that problem, desiring treatment, and seeking treatment.

Due to the low base rate of problem gambling in the population (our baseline survey found a rate of 2.0%, reported in Chapter 5, Table 9), and the small number of people who reported seeking treatment for a gambling problem, we did not ask about barriers to treatment in our survey. However, a growing research literature tells us a lot about the barriers people face in seeking treatment for gambling problems. A qualitative study in New Zealand, using focus groups and open-ended interviews, found that the main barriers to seeking professional help for a gambling problem were feelings of pride, shame, and denial of a gambling problem. The study found that the main motivation for seeking professional help was a crisis event, most often involving financial loss or hardship, and accompanied by significant psychological distress. These barriers to help-seeking were consistent across gender, age groups, and ethnicities in New Zealand. The authors concluded that increasing general awareness of available services, raising awareness among family, friends, and non-specialist health professionals, and encouraging gamblers to seek help before reaching a traumatic or critical point were all needed to increase the numbers of people seeking professional help for a gambling problem (Bellringer, Pulford, Abbott, DeSouza, & Clarke, 2008; Pulford et al., 2009).

A larger study in Australia used surveys and semi-structured interviews with problem gamblers in recovery and family members to examine barriers to accessing treatment (Gainsbury, Hing, & Suhonen, 2013; Hing, Nuske, & Gainsbury, 2011). Rates of help-seeking were very low across all of the samples surveyed (i.e., regular gamblers, helpline callers, clients in counselling). As in New Zealand, the most common motivators for help-seeking were serious financial losses and emotional distress. In response to specific questions about barriers to help-seeking, respondents indicated that the most common barriers were the desire to solve their problems on their own, shame, pride, and denial. The researchers concluded that there was a clear need to raise awareness of problem gambling services through publicity, advertising, and public education. They also recommended that more attention be directed at individuals who were just beginning to experience difficulties related to their gambling rather than focusing only on gamblers with severe problems.

Finally, a systematic literature review identified 19 studies conducted in five countries that assessed obstacles preventing problem gamblers from seeking treatment for their gambling problems (Suurvali, Cordingley, Hodgins, & Cunningham, 2009). Despite differences in methodology, many of the same barriers to treatment were identified across the studies. The most commonly reported barriers included the wish to handle the problem by oneself; shame/embarrassment/stigma; unwillingness to admit a gambling problem; and uncertainty about the effectiveness of treatment. Other frequently reported barriers included lack of knowledge about treatment options and practical issues around attending treatment. The authors of the review concluded that more research was needed on barriers to treatment-seeking that are experienced by different

[13] Creating an algorithm for this skip rule in the questionnaire using the PPGM proved difficult. The CPGI cutoff that produces the closest approximation of the PPGM typology was used instead.

groups of gamblers. In another review of literature on barriers to access and utilization of health care services for alcohol abuse, substance abuse, and mental health programs, a distinction was made between the intrinsic barriers most often identified in the problem gambling literature (e.g., individual cognitions and behavior) and extrinsic barriers that have received far less notice in the literature. Extrinsic barriers are usually social in nature and involve the availability, affordability, accessibility, and acceptability of services (Clarke, 2007).

How Many Problem Gamblers to Plan For?

One important purpose of problem gambling prevalence surveys is to identify the number of individuals in a jurisdiction who may need treatment services for gambling-related difficulties at a given point in time. Experience in most jurisdictions suggests that only a minority of individuals who would benefit from treatment for a mental health problem will seek out such treatment. From a policy perspective, the question is: For how many individuals should we plan to provide prevention programs or treatment services?

Research in the early 1990s suggested that approximately 3% of individuals with severe gambling-related problems would seek treatment in any one year (Dickerson, 1997; Volberg, 1997). This proportion was similar to the proportion of alcohol-dependent individuals in the general population who sought treatment on an annual basis (Smith, 1993). More recent research suggests that the proportion of individuals in the population with serious alcohol or substance abuse problems who seek specialized treatment in any one year is substantially higher—15% among alcohol abusers and 16% among substance abusers (Cohen, Feinn, Arias, & Kranzler, 2007; Huebner & Kantor, 2011; U.S. Department of Health and Human Services, 2015). These increases in treatment-seeking for alcohol and drug abuse appear to be related to advances in pharmaceutical treatments, greater likelihood of reimbursement from insurance companies, and decreases in the stigmatization of addictive disorders (Fong, 2010).

Help-seeking for gambling problems is on the rise in jurisdictions where specialized services are widely available and well-publicized. For example, data from New Zealand—where problem gambling services are widely available—show that approximately 10% of individuals with severe gambling-related problems seek help in any given year (Bellringer et al., 2008). In a recent study in Ontario, 50% of problem gamblers who wanted treatment actually sought out treatment, perhaps because of the largely free and widely available services in that Canadian province (Williams & Volberg, 2013).

In calculating the number of problem gamblers who might seek treatment in Massachusetts, we focused on the group of individuals who score as problem gamblers (i.e., the 83,152 – 135,122 individuals represented by the confidence interval around the point estimate for problem gambling in the survey; see Chapter 5, Table 9) along with estimates of treatment-seeking from other jurisdictions. The assumption underlying this approach is that treatment-seeking in Massachusetts will be similar to the level identified in U.S. jurisdictions in the early 1990s (3%). Based on this approach, we estimate that the number of individuals that could seek treatment for a gambling problem on an annual basis in Massachusetts will initially be between 2,500 and 4,050. Over time, it is possible that the number of individuals seeking treatment for a gambling problem on an annual basis could double (to between 5,000 and 8,000) with greater availability and awareness of treatment resources.

Future Directions

Information regarding experiences with problem gambling prevention and treatment services in the Baseline General Population Survey is limited by the relatively small number of individuals in the survey who have actually desired or sought treatment. To address this challenge, the SEIGMA research team is in the process of conducting a broader evaluation of problem gambling services in Massachusetts. While the results of the baseline survey will contribute to our services evaluation, we are conducting a number of additional research

activities to more meaningfully capture information about treatment desire, treatment-seeking, and the barriers people face in seeking help for gambling problems.

Additional research activities related to this evaluation include analysis of data from a Baseline Online Panel Survey (n=5,000) that the SEIGMA team conducted last year. Online panel surveys are different from online survey administration (which was used in the Baseline General Population Survey) because they involve groups of respondents who have agreed to participate in a variety of surveys for some form of compensation. Because participants are not randomly selected to participate, online panel surveys are not representative of the population. However, previous research has found higher rates of problem gambling prevalence in online panels (Back et al., 2015; Lee, Back, Williams, & Ahn, 2015; Williams, Belanger, et al., 2011; Williams & Volberg, 2013). Preliminary analysis of data from the SEIGMA Baseline Online Panel Survey indicates that a relatively large number of these respondents have indeed experienced a gambling problem. As such, information from this source will shed a brighter light on the population of people who desire and seek treatment for gambling problems in Massachusetts. In addition to the online panel, the SEIGMA team will analyze data from MCCG's Problem Gambling Helpline, focus groups with treatment providers across the state, and key informant interviews. This will enable us to more closely examine treatment-seeking experiences in this population. Furthermore, because many of the barriers identified in the literature are conceptually complex and of a sensitive nature, we believe that qualitative research methods may be more suitable for exploring these concepts. The SEIGMA team will summarize the findings of its Problem Gambling Services Evaluation in a future report.

CHAPTER 8:

Summary and Conclusion

The main purpose of Baseline General Population Survey was to establish baseline levels of gambling participation and problem gambling prevalence in the adult population of Massachusetts prior to the opening of any new gaming facilities in the Commonwealth. A secondary goal was to assess awareness and utilization of problem gambling services in Massachusetts and obtain information about the public's knowledge of available resources for addressing gambling problems. Drawing from these two aims and an understanding of the research literature, we generated a list of important research questions that can be answered, to a greater or lesser extent, using data from the survey.

Answering the Research Questions

In this chapter, we provide answers to the research questions posed at the beginning of this report. This information is fundamentally important to understanding the nature and magnitude of gambling and problem gambling in Massachusetts prior to the introduction of casino gambling. The information will be valuable in developing approaches to enhance and improve existing problem gambling prevention and treatment services in the Commonwealth.

What are current attitudes toward gambling in Massachusetts?

There was a range of opinion among Massachusetts adults concerning legalized gambling in general as well as legalized gambling within the state. The majority of Massachusetts residents believed that some forms of gambling should be legal and that the current availability of gambling in the Commonwealth was acceptable. Since this was assessed after the Expanded Gaming Act passed but before any casinos opened in Massachusetts, it will be interesting to see if this attitude changes in the future.

Massachusetts residents had mixed opinions about the impact of the planned introduction of casinos and a slots parlor in the state, with almost equal numbers of people believing it would be harmful and beneficial and a group in the middle who felt that the benefit of expanded gaming would equal the harm. People viewed the impact of having a new casino or slot parlor in their own community somewhat more negatively than for Massachusetts as a whole. Only 9.0% of Massachusetts residents felt that gambling was somewhat or very important to them as a recreational activity.

What is the current prevalence of gambling in Massachusetts?

In 2014, 73.1% of the Massachusetts respondents acknowledged participating in one or more gambling activities in the past year. Almost four in ten Massachusetts adults (38.5%) gambled once a month or more often and 18.1% of Massachusetts adults gambled once a week or more often in 2014. Past-year participation was highest for lottery games (61.7%), raffles (31.5%), and casino gambling (21.5%). The past-year participation rate for sports betting was 12.6% and, for private wagering, it was 11.1%. Rates of past-year betting on horse races, playing bingo, and online gambling were all much lower.

Past-year gamblers in Massachusetts were most likely to say that winning money was the main reason they gambled, followed by excitement/entertainment, socializing with family/friends, and supporting worthy causes. As gambling frequency increased from past-year to monthly to weekly, winning money became an increasingly important reason for gambling as did excitement and/or entertainment.

What is the demographic, game type, and geographic pattern of gambling in Massachusetts?

There were significant differences in overall gambling participation associated with gender, age, and race/ethnicity. There were also important differences in gambling participation associated with education, employment, income level, and geographic region. Men were more likely to be monthly or weekly gamblers while women were more likely to be non-gamblers or to have gambled in the past year but not monthly or weekly. Adults aged 55 to 79 were more likely to be weekly gamblers compared to adults between the ages of 21 and 54. Adults with a high school diploma or less were more likely to be weekly gamblers than adults with higher education. Adults with graduate degrees were least likely to be weekly gamblers. There were many differences in participation rates for specific activities across groups of respondents. Table 18 provides an overview of demographic groups who reported high levels of past-year participation in specific gambling activities.

Table 18 Demographic groups with high levels of past-year gambling participation

Gambling Activity	Demographic Group
Overall	• Male • Aged 25 to 79 • White • HH income between $100,000 and $150,000
Lottery	• Male • Aged 35 to 64
Raffles	• Aged 35 to 64 • White • College degree (BA or Masters) • Employed or retired • HH income over $50,000
Casino	• Male • Aged 25 to 34 • Some college or BA • Employed • HH income over $50,000
Sports	• Male • Aged 25-54 • College degree (BA or Masters) • HH income over $50,000
Private	• Male • Aged 18-34 • HH income over $50,000
Horse racing	• Male • HH income over $50,000
Bingo	• Female • Aged 65 and over • HS diploma or some college
Online	• Male • Aged 25-34

With regard to the geographic pattern of gambling in Massachusetts, we found that Greater Boston had the lowest rates of past-year and weekly gambling. This was primarily due to lower rates of participation in lottery games and raffles compared to Western and Southeastern Massachusetts. Past-year participation in horse race betting was higher in Western Massachusetts than in Southeastern Massachusetts.

What is the current prevalence of problem gambling in Massachusetts (as well as the actual number of problem gamblers)?

Based on the survey, the current prevalence of problem gambling in Massachusetts was 2.0%; this represents between 83,152 and 135,122 adult residents of Massachusetts. An additional 8.4% of our respondents scored as at-risk gamblers; this represents between 389,776and 488,519adult residents of Massachusetts. In contrast to these prevalence rates, 18.5% of Massachusetts residents reported knowing someone who they considered gambled too much in the past year.

What is the geographic and demographic pattern of problem gambling in Massachusetts?

Problem gambling in Massachusetts was significantly higher among men compared with women, among Blacks compared with Whites, and among individuals with a high school diploma compared with a college degree. There were also significant differences in at-risk gambling associated with gender, education, and employment. At-risk gambling in Massachusetts was significantly higher among men compared with women, and individuals with a high school diploma or less compared with a college degree. Additionally, there were notable distinctions between recreational, at-risk, and problem gamblers. At-risk and problem gamblers in Massachusetts were significantly more likely than recreational gamblers to be male and unemployed. There were no significant differences in problem gambling between the Western, Southeastern, and Greater Boston regions of the state.

Which particular forms of gambling are most strongly related to problem gambling in Massachusetts?

Generally speaking, the prevalence of at-risk and problem gambling was higher for gambling activities with lower levels of participation. While the prevalence of problem gambling was somewhat higher among lottery players (3.1%) compared with Massachusetts as a whole (2.0%), prevalence rates among horse race bettors (13.1%), and those who played daily lottery games (7.6%) were much higher than for Massachusetts as a whole.

What are the social, health, and economic consequences of problem gambling to individuals in Massachusetts with this condition?

The Baseline General Population Survey is a cross-sectional "snapshot" of the Massachusetts population. This means that we can identify correlates of problem gambling but cannot determine the causal direction of the relationship. That is, we cannot answer the question of whether something causes problem gambling, arises as a consequence of problem gambling, or whether the conditions are correlated due to some shared underlying cause.

Problem gamblers in Massachusetts reported poorer physical health compared with recreational gamblers. At-risk and problem gamblers were more likely than recreational gamblers to acknowledge serious problems with depression, anxiety, and other mental health problems and to use tobacco. Problem gamblers were more likely than recreational gamblers to use illicit drugs. At-risk and problem gamblers in Massachusetts did not report consuming alcohol more frequently than others in the population; however, they were more likely to report often consuming large amounts of alcohol at one time.

How aware is the general public of existing problem gambling prevention initiatives?

Awareness of existing problem gambling prevention initiatives in Massachusetts is quite variable. While 41.0% of Massachusetts adults were aware of media campaigns to prevent problem gambling, 13.1% of adults were aware of non-media prevention efforts in schools and communities around the Commonwealth and only 2.1% of

those who were aware had participated in such programs. Awareness of media campaigns was highest among men and Whites as well as among those who were employed and had a higher income.

How many problem gamblers in Massachusetts desire treatment and how many seek treatment?

A very small number of problem gamblers in the survey indicated that they would like help for a gambling problem or had sought help for such a problem. However, assuming that treatment-seeking in Massachusetts will be similar to other U.S. jurisdictions prior to the introduction of casino gambling, we estimate that the number of individuals who would potentially seek treatment for a gambling problem on an annual basis in Massachusetts is between 2,500 and 4,050. This number could increase with the advent of successful public awareness and education programs along with greater availability of treatment resources. We expect to learn much more about the discrepancies between treatment desire and utilization from our Baseline Online Panel Survey, which contains a large number of problem gamblers, and from our evaluation of problem gambling services.

Where do problem gamblers go to receive treatment in Massachusetts?

Given the small number of individuals in the Baseline General Population Survey who had sought help for a gambling problem, we are unable to say with confidence where problem gamblers go to receive treatment in Massachusetts. We expect to learn more about treatment-seeking among problem gamblers from our Baseline Online Panel Survey and from the separate Problem Gambling Services Evaluation that we are currently conducting.

What barriers exist to treatment seeking?

Again, due to the small numbers of people in our survey who reported desiring or seeking treatment, we did not learn much about barriers to treatment in the Baseline General Population Survey. However, existing literature tells us a lot about the barriers people face in seeking help for gambling problems. A growing research literature suggests that people face substantial individual and behavioral barriers as well as social and structural barriers in seeking treatment for gambling problems. The SEIGMA research team will be conducting additional research activities to more thoroughly study desire for treatment, treatment-seeking, and barriers to accessing treatment.

Strengths and Limitations of the Study

Strengths

A primary concern when designing the Baseline General Population Survey was that the data needed to be representative of the state of Massachusetts. The introduction of a multimode survey approach in addition to the ABS design allowed for a more inclusive sample comprising households without a telephone or who only own a cell phone and households without access to a computer or the Internet. In this respect, the SEIGMA Baseline Population Survey had considerably higher coverage of the target population than a telephone-only survey.

With a sample of 9,578 respondents, the Baseline Population Survey is the largest problem gambling survey conducted to date in the United States. Use of standardized methods of data collection, including address-based sampling, multiple modes of data collection, and a highly-structured instrument reduced potential bias and enhanced the validity of the results. Strenuous efforts were made to recruit a fully representative sample of Massachusetts residents into the survey, including several mailings of advance letters and postcard reminders.

Limitations

There are some limitations to the SEIGMA Baseline General Population Survey. One potential limitation is the 36.6% response rate attained in the survey. Survey response rates in developed countries have fallen

precipitously in recent years; this increases the likelihood that participants differ from non-participants in some important and systematic way, making the sample non-representative. While this does not always occur (Curtin, 2000; Groves et al., 2006; Keeter, Miller, Kohut, Groves, & Presser, 2000), the risk is always present and tends to increase as a function of the degree of non-response. While we attempted to minimize systematic bias by introducing the study as a survey of "health and recreation," the response rate for the Baseline General Population Survey was lower than desirable and, as a consequence, generalization of our results should be undertaken with care.

Another limitation is that the survey was restricted to adults living in households—the sample did not include adults living in group quarters, incarcerated individuals, or homeless individuals. Although rates of problem gambling tend to be very high in these groups, they represent only small proportions of the total population and research has shown that their inclusion is unlikely to affect the overall prevalence rate (Abbott & Volberg, 2006; Williams & Volberg, 2010).

A third limitation is that the questionnaire was translated into Spanish but not into other languages. Some communities in Massachusetts have high proportions of adults with no or limited English language abilities. By not providing for surveys in additional languages, we were unable to include such individuals in our sample. However, it is our belief that alternate research strategies are needed to fully explore the role of gambling in a variety of small but important cultural communities, including Asians and South Asians as well as immigrant and refugee communities.

A fourth limitation relates to the small size of several subgroups in the sample such that the prevalence rates of problem gambling in these groups are associated with large confidence intervals. These estimates should be viewed with caution since they may be unreliable. Finally, it is important to emphasize that, like other prevalence surveys, the Baseline General Population Survey is a cross-sectional "snapshot" of gambling and problem gambling at a single point in time. This limits our ability to draw any cause and effect conclusions from associations reported between gambling participation, gambling problems, and other variables in Massachusetts.

Future Directions

When the results of a new problem gambling prevalence study are published, policy makers and the media generally focus their attention on a single number—the overall rate of problem gambling in the general population. Comparisons are made with prevalence rates in other jurisdictions and questions are asked about the number of people that this overall rate represents and how many of them may seek treatment if specialized services are made available. While these are important reasons for conducting prevalence research, there is much more to be learned by looking beyond the overall prevalence rate. There is also much more to be learned through extensive additional analyses of the data from the Baseline General Population Survey, additional research activities to supplement these findings, and subsequent iterations of this survey once all of the new gambling facilities open in Massachusetts.

As we have noted several times in this report, we plan to carry out deeper analyses, using multivariate and latent class approaches, to examine relationships between attitudes toward gambling and participation in specific gambling activities as well as relationships between clusters of similar gambling activities and demographics. We also plan further multivariate analyses to assess the relationships between at-risk and problem or severe problem gambling and demographics, gambling involvement, and comorbid conditions. These analyses will help us identify risk factors that remain predictive of at-risk and problem gambling status after controlling for underlying relationships in the data.

We also plan deeper analyses of data that were not highlighted in this report because of the small numbers of respondents who reported certain behaviors. For example, survey respondents in military service since September 11, 2001 reported a particularly high rate of problem gambling. We plan to look at this group more closely in future analyses of our data to ascertain if this is an independent risk factor for problem gambling or the result of a correlation with some other condition or characteristic. Additionally, although estimates of suicidal ideation and attempted suicide obtained in the Baseline General Population survey are too small to be reliable, the data do indicate that suicidality is somewhat higher among problem gamblers in Massachusetts compared with others in the population. We plan to investigate this preliminary finding further using multivariate analyses and other data sources to clarify the relationship between problem gambling status and suicidality, and in particular whether problem gambling is an independent predictor of suicidality.

Additional research activities will add depth to the findings presented in this report. In particular, the SEIGMA research team plans to analyze data from a Baseline Online Panel Survey (n=5,000) that was conducted in 2014. Due to the way in which respondents are selected to participate in online panels, previous research has found higher rates of problem gambling prevalence in online panels compared to population samples in the same jurisdictions (Back et al., 2015; Lee et al., 2015; Williams, Belanger, et al., 2011; Williams & Volberg, 2013). We noted above that we were unable to identify where problem gamblers go to receive treatment in Massachusetts with any confidence, given the small number of individuals in the Baseline General Population Survey who had sought help for a gambling problem. By analyzing a dataset with a higher proportion of problem gamblers, we expect to learn much more about their desire for treatment, treatment-seeking behavior, and the barriers they face in seeking treatment.

We also plan to use data from the Baseline Online Panel Survey to more closely examine potential social impacts of gambling such as bankruptcy, crime, relationship problems, and suicidality. The questionnaire for both the Baseline General Population Survey and the Baseline Online Panel Survey included items that serve an important triangulating function in establishing the particular social impacts of gambling. Whenever a gambler reported financial problems deriving from their gambling, they received an additional question about gambling-related bankruptcy. Similarly, if they reported committing illegal acts because of their gambling, they received several additional questions asking about type of crime as well as conviction and incarceration. If they identified relationship problems due to gambling, they were asked additional questions about domestic violence, separation, divorce, and child neglect. If they reported mental health problems due to their gambling, they were asked additional questions about suicide attempts. Collecting data in this way establishes the association between specific impacts and gambling behavior with greater confidence because the person is making a direct attribution that the behavior occurred *because* of his/her gambling. While endorsement rates for these questions were low in the Baseline General Population Survey, rates are likely to be higher in our Baseline Online Panel Survey. In seeking to understand the social, health, and economic consequences of problem gambling in Massachusetts, these *directly attributed* impacts are of interest and we plan to explore these data carefully.

In addition to the online panel survey, the SEIGMA research team is in the process of completing the second of two targeted population surveys, which will be used to more closely examine geographic patterns of gambling and problem gambling in the Commonwealth. Beyond survey data collection, the SEIGMA team will supplement its findings using additional research methods. For example, because the profile of problem gamblers in Massachusetts is similar to what has been reported in many other jurisdictions, we can hypothesize that prevention and treatment programs that have been found effective elsewhere are likely to be effective in Massachusetts. Using literature searches and key informant interviews, we can identify best practices in problem gambling prevention and treatment and explore ways to adopt and adapt these best practices in the Commonwealth.

Conclusion

The descriptive statistics presented in this report tell us a lot about gambling attitudes, behavior, problems, and prevention awareness. The Baseline General Population Survey dataset will continue to enrich our understanding of gambling and problem gambling in Massachusetts through the additional analyses and research activities discussed in this chapter. Additionally, all of the data collected by the SEIGMA team will be made public over time to enable other researchers and stakeholders to interact with the data and conduct their own analyses, adding to the body of knowledge about gambling in Massachusetts. Moreover, because the SEIGMA research plan calls for the same survey to be repeated one year after all of the new gaming facilities have become operational in Massachusetts, subsequent datasets will allow us to measure the impacts of gambling expansion in Massachusetts. Measuring the same behaviors and using the same methods at subsequent points in time will be useful in monitoring changes over time in attitudes, gambling participation, and problem gambling prevalence in Massachusetts. Individually and in tandem, results of the Baseline General Population Survey and subsequent surveys can be used by the Commonwealth to develop data-driven strategies to promote responsible gambling, raise awareness about problem gambling, and design general and targeted prevention and treatment programs for problem gamblers and their families throughout Massachusetts.

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Appendix A: Methods

This appendix describes the methodology and statistical techniques employed in the 2014 Massachusetts Baseline General Population Survey.

Appendix A1 provides a timeline of the project and a graph showing the progress of data collection.

Appendix A2 provides an overview of established best practices in the population assessment of problem gambling that were incorporated in the SEIGMA Baseline General Population Survey.

Appendix A3 describes in detail how the Baseline General Population Survey was fielded. This includes information about ethical and peer review, development and final content of the questionnaire, how the appropriate sample size was calculated, and how the survey was designed and conducted to obtain a representative sample of the adult Massachusetts population. This section includes discussion of several obstacles encountered and addressed during data collection and concludes with a description of our data preparation procedures, including cleaning and weighting.

Appendix A4 provides the final disposition report submitted by NORC to the SEIGMA research team with enough information to allow technical readers to calculate alternate response rates for the survey.

Appendix A5 presents response rates for each question in the survey separately by mode of data collection (online, SAQ and telephone).

Appendix A1: Timeline and Progress

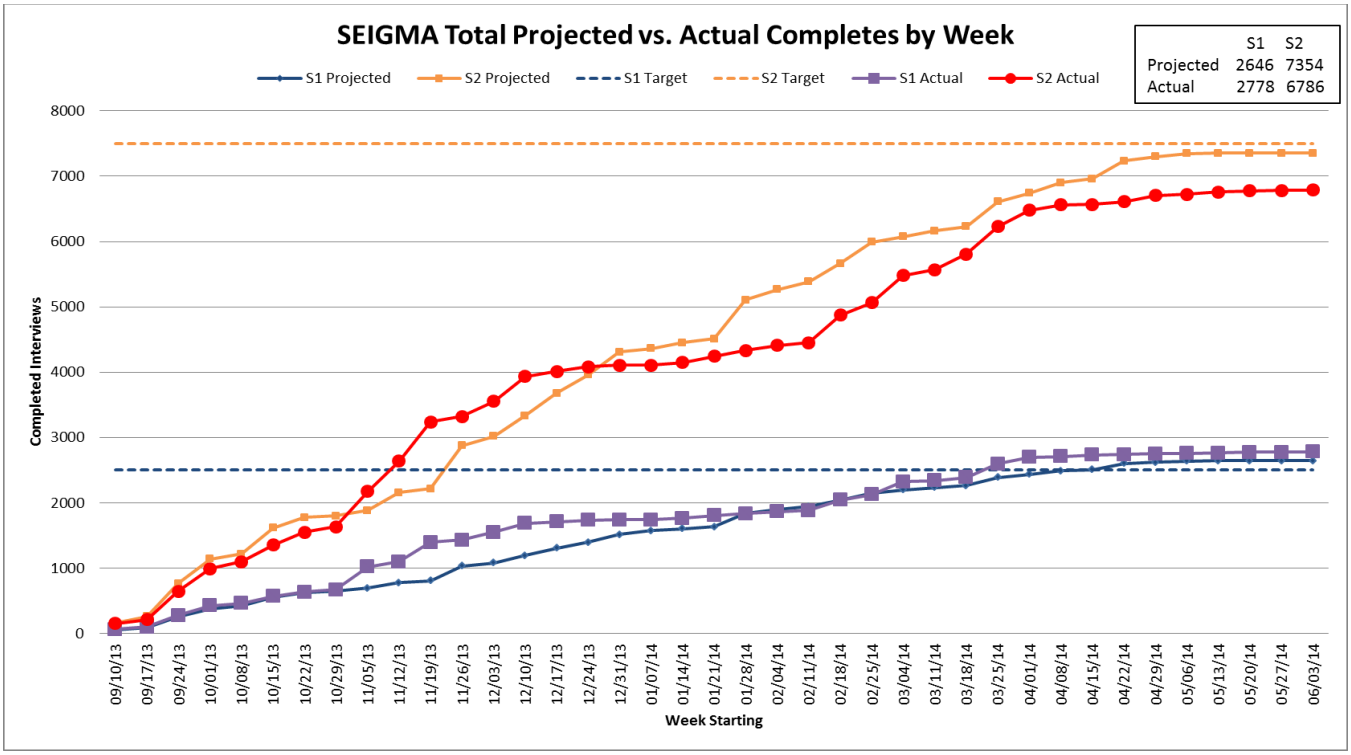
The table below presents a timeline of the project to provide readers with an understanding of the sequence of critical events that occurred over the course of the survey.

Table 19 Baseline population survey timeline

Task	Date Achieved
Contract approval	5/3/13
Weekly meetings (SEIGMA team, NORC)	Ongoing
Monthly progress reports to MGC	Ongoing
Sampling plan finalized	5/22/13
Questionnaire finalized	6/27/13
Ethics approval (NORC & UMass)	7/10/13
Programming (CAWI, CATI) complete	9/4/13
Data collection begins	9/11/13
Additional batches released	1/14/14
Data collection completed	5/31/14
Data cleaning (NORC) completed	7/31/14
Data cleaning (SEIGMA) completed	12/31/14
Data analysis	Ongoing
Draft report	3/23/15
Second draft report	4/17/15
Final report	5/28/15

On the next page, we present a figure illustrating progress over the entire data collection period. Progress was tracked separately for Western MA and Eastern MA (or Rest of the State) and was monitored against projections created by NORC prior to the beginning of data collection and based on experience with other ABS multi-mode surveys. In the figure, S1 is Western MA and S2 is Eastern MA. From the figure, it is clear that the projection for Western MA was quite good but difficulties were encountered in meeting projections for Eastern MA. This was the reason that additional sample was released in January, 2014.

Figure 34 Baseline Population Survey projected and actual completed interviews



Appendix A2: Best Practices in the Population Assessment of Problem Gambling Adopted in the SEIGMA Baseline Population Survey

The following is a summary of the current best practices in the population assessment of problem gambling that were employed in the SEIGMA survey. These practices derive from survey research generally (Fowler, 2009; Groves et al., 2001; Volberg, 2007) as well as from research specific to gambling (Williams & Volberg, 2010, 2012).

1. Employ a survey company with the greatest potential to achieve a high response rate. Respondents are more likely to agree to participate in surveys conducted by university affiliated survey companies compared to private commercial firms.
2. Pilot test the questionnaire to ensure it is properly programmed and all questions are clear.
3. Keep the questionnaire short to increase the chances of participation (under 15 minutes is optimal).
4. Provide pre-notification of the impending survey so as to increase response rates.
5. Use computer assisted interviewing methods to standardize survey administration.
6. Random sampling from a comprehensive listing of the population is the best way to ensure representative sampling. In lieu of a population database, random sampling of observable residences can potentially be used. Another strategy is "random digit dialing" so as to capture all possible listed and unlisted telephone numbers.[14] If using this approach it is essential that:
    a. cell phones are included in the pool of eligible numbers;[15] and
    b. it is supplemented by face-to-face and/or mail-in surveys when a large percentage of the population of interest does not have cell phones or landlines (e.g., First Nation reserves).[16]

    When researchers have access to a population database, then response rates can be improved by sending questionnaires to the addresses of people who could not be contacted.
7. Face-to-face residential interviewing is the method best able to achieve representative and valid results. However, sensitive parts of the questionnaire (e.g., problem gambling) are best self-administered. Telephone interviews are currently the next best method of survey administration, but the representativeness of this approach is increasingly limited.
8. Randomly select the adult to be interviewed within the household to compensate for the tendency of females to answer the telephone or door.
9. Have minimum age x gender cell quotas that are at least 50% of the true prevalence of these cells in the population (as established by the most recent population census) so as to minimize the amount of data weighting that has to be done after data collection.
10. Use sustained efforts to contact the randomly selected individual or household to ensure that the obtained sample does not consist only of easily contactable people.
11. Recontact "soft refusals" at a later point to see if they would be willing to participate ("refusal conversion").

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[14] While this approach tends to be inefficient because of the many nonexisting or noneligible numbers (e.g., businesses, fax numbers, etc.), it is often more cost effective than face-to-face residential interviews.

[15] Although cell phone response rates are even lower than landline response rates, they capture a demographic group that would not be adequately captured otherwise (Williams & Volberg, in preparation).

[16] Households without residential telephone service historically have had significantly higher rates of poverty, unemployment, health problems, and substance use (Ford, 1998; Pearson, Cheadle, Wagner, Tonsberg, & Psaty, 1994). However, because only about 0.5%-2% of the population in most Western countries do not have residential phone service (at least between the period ~1960 to ~2000), the failure to include these individuals in jurisdiction-wide prevalence studies usually did not have a marked effect.

12. For quality assurance, have a supervisor conduct periodic visual and audio evaluation of the interviewers' work.
13. Have the ability to conduct the interview in different languages, depending on the language abilities of the population being surveyed.
14. Knowing the survey topic in advance produces a bias in the people who choose to participate and not participate. Thus, the description of the survey to prospective participants needs to be somewhat ambiguous (e.g., "health and recreation survey," "recreational activities"). Alternatively, the gambling survey should be inserted as an additional module in a larger multi-topic study.
15. Use question wordings about gambling frequency and expenditure that are documented to have the best reliability and validity (Wood & Williams, 2007).
16. Use a problem gambling assessment instrument with good established correspondence between gambling classifications obtained in population prevalence surveys and clinical assessment of these categorizations.
17. Conduct post-hoc weighting of the obtained sample to compensate for:
    a. Oversampling of single person households and undersampling of individuals from large households.
    b. Oversampling of people with multiple means of potential contact (e.g., people with a landline as well as a cell phone).
    c. Sampling deviations from the known demographic profile of the population (typically age x gender distributions, but could include other relevant attributes).
18. Response rates should be calculated using procedures recommended by the Council of American Survey Research Organizations (1982) and the American Association for Public Opinion Research (AAPOR) (2011).
19. Ensure the final report provides full documentation of the methods employed in the survey.

Appendix A3: Fielding the SEIGMA Baseline General Population Survey

Ethical and Peer Review

The research protocol for the survey was thoroughly reviewed and discussed among staff at UMass Amherst and NORC. Both groups have considerable experience with social science research, large-scale population surveys, and gambling research. For example, Dr. Rachel Volberg, SEIGMA's Principal Investigator, has been involved in research on gambling and problem gambling since 1985. Dr. Volberg has guided numerous studies of gambling and problem gambling in the general population and is widely regarded as one of the most experienced problem gambling epidemiologists in the world. Dr. Robert Williams, one of SEIGMA's Co-Principal Investigators, is an internationally recognized gambling researcher and leading authority on the socioeconomic impacts of gambling, etiology and prevention of problem gambling, population surveys, assessment of problem gambling, indigenous gambling, and Internet gambling.

NORC has been conducting objective social science research in the public interest for over seventy years. This longevity can be partially attributed to their persistent dedication and adherence to ethical standards. NORC abides by the AAPOR Code of Professional Ethics and Standards and therefore has set high data collection standards for itself. The SEIGMA questionnaire was reviewed by several experts at NORC including Dr. Michael Stern, a Methodology Fellow and expert in web survey design, measurement error, and use of innovative technologies in survey data collection. Dr. Stern has more than twelve years of experience in examining pioneering ways to reduce measurement error through testing the effects of visual design on respondents' answers in web and mail surveys. He has been involved in the design and implementation of a large number of web, mail, and telephone surveys, which have included dozens of experimental treatments. The questionnaire was also reviewed by Dr. Kari Carris, who served as Project Director for the 2006 California Problem Gambling Prevalence Survey.

Federal Certificate of Confidentiality

Due to the sensitive nature of certain topics within the survey, including questions regarding mental health, substance abuse, and crime, a certificate of confidentiality was submitted to and approved by the National Institute of Mental Health. The certificate protects against the disclosure of personally identifiable information.

IRB Review

All data collection efforts were subject to approval by both the UMass Amherst and NORC IRBs. UMass Amherst received IRB approval on July 9, 2013. NORC received approval shortly after on July 19, 2013. NORC submitted a request to the IRB to waive the requirement of obtaining informed consent documentation in exchange for including informed consent statements in each survey mode. The informed consent statement read as follows:

> *"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 a court order or 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 to 15 minutes."*

For web respondents, the informed consent statement was read as part of the screening process. A hyperlink was included to a list of frequently asked questions (FAQs) about the Federal Certificate of Confidentiality. If the respondent clicked 'Next' to move past the informed consent screen, he or she was presumed to be informed of his or her rights as a participant. For mail, the informed consent statement was printed on the inside cover of the hardcopy questionnaire with a link to the Federal Certificate of Confidentiality. Respondents returning a booklet with valid response data were considered to have provided consent. Finally, respondents completing by telephone were read the informed consent script. Interviewers captured consent by clicking 'Continue' if the respondent did not voice any objections. Respondents were also notified that the calls would be recorded. If the respondent objected, the interviewer would select that the respondent refused to be recorded.

NORC submitted all materials (letters, brochures, questionnaire) to the IRBs for review. As data collection progressed, any materials requiring modification or new materials not included in the original submission were sent as an amendment to the IRBs for review.

External Review

The draft report was reviewed by MGC staff, staff at the Massachusetts Department of Public Health (MA DPH), members of two MGC advisory committees, and two specialist reviewers. All of the feedback from the two rounds of review was carefully considered and much of the feedback was incorporated in the final report.

Questionnaire

Overview of the Questionnaire

The primary goal of the SEIGMA study is to understand the social and economic effects of expanded gambling in Massachusetts. The Baseline General Population Survey provided a unique opportunity to collect pre-casino baseline data on the status of residents' health, participation in recreational activities including gambling, attitudes pertaining to the introduction of gambling in the state, and issues associated with problem gambling. To achieve a random sample, the survey targeted an adult in the household (18 years or older) who had the most recent birthday. Estimated survey completion time for most respondents was 10 to 15 minutes.

NORC worked alongside the SEIGMA research team to finalize the questionnaire, which included sections on respondent physical and mental health, employment and finances, relationship status, treatment sought for gambling, attitudes toward gambling, and past year gambling behavior. A few sensitive topics were addressed including drug and alcohol use and mental health. If respondents reported experiencing problems with these issues, contact information for treatment providers was provided. The Problem and Pathological Gambling Measure (PPGM) was used as the primary measure of problem gambling.

If respondents completed the survey online or by telephone, *only those who reported gambling in the past year* were directed to this series of questions. Those respondents who reported not gambling within the past year, or who failed to report gambling activity, were skipped past the problem gambling section. Respondents completing the SAQ could have answered the problem gambling questions regardless of whether they reported gambling in the past year. The skip logic involved was too complex to include as respondent instructions within the SAQ. If a respondent did not report gambling in the past year, but provided responses to the series of questions, these responses were removed during the data cleaning process.

Questionnaire Development

The research team at UMass Amherst created the initial questionnaire. NORC then reviewed the questionnaire and provided feedback on content, formatting, and overall layout. Upon receipt of the final questionnaire, NORC's Desktop Publishing staff formatted the SAQs that would be mailed to respondents. NORC IT staff programmed the web and telephone versions of the survey. Extensive testing was completed in order to verify that the survey functioned as intended including question text, skip logic, case disposition assignment, and callback rules. NORC utilized Voxco, a commercial online case management system (CMS) that stores data for each case. The CMS was designed to manage telephone, web, and mixed-mode surveys in addition to allowing for extensive flexibility in manipulating test data to accommodate various testing scenarios. Following development, the SEIGMA research team conducted mock interviews to review the flow and logic of the survey and also to gauge completion time. Finally, NORC conducted a live dial, which was a test of the production environment that ensured cases were delivered to telephone interviewers correctly and to provide experience to interviewers administering the questionnaire.

Questionnaire Content

The questionnaire content was guided by the aims of the SEIGMA study, a desire to maintain comparability with previous gambling surveys, interview length considerations, and opportunities to address gaps in the gambling research literature. The questionnaire was introduced to potential participants as a survey of "health and recreation," to improve the likelihood of interviewing a representative sample of the Massachusetts adult population.

Comorbidities

The questions that started the survey had two purposes. The first was to provide legitimacy to the "health and recreation" description of the survey to eligible respondents. The second purpose was to establish the presence or absence of typically reported comorbidities for problem gambling (e.g., substance use, mental health problems). All respondents were asked general questions about their preferred recreational activities and their physical and mental health status before more specific questions were posed about their use of tobacco, alcohol and illicit drugs. Additional questions in this section inquired about respondents' perception of their physical health, experience of stress, and overall level of happiness.

Gambling Attitudes

All respondents were asked questions about their beliefs about the benefit versus harm of gambling, the morality of gambling, whether gambling should be legal, and their opinion about the availability of gambling opportunities in Massachusetts and in their own communities. Additional questions in this section assessed views about the anticipated impacts of expanded gambling in Massachusetts.

Past-Year Gambling Behavior

All respondents were asked about the frequency of their participation and their expenditures on 11 types of gambling, using questions with optimal wording for obtaining this information (Wood & Williams, 2007). Participation and expenditures were assessed for traditional, large jackpot lottery games, instant lottery tickets, daily lottery games, charitable raffles, sports events, bingo, casino gambling, pari-mutuel wagering on horse races, private wagering, high risk stocks and online gambling.

Gambling Motivation

All respondents who had gambled in the past year were asked one question about their primary motivation for gambling.

Gambling Recreation/Entertainment

All respondents who had gambled in the past year were asked about the importance to them of gambling as a recreational activity and whether gambling had replaced other recreational activities.

Prevention Awareness

All respondents were asked questions to assess their awareness of problem gambling prevention activities in Massachusetts. Prevention activities included media campaigns and programs offered in schools, workplaces or in the community. Respondents were asked if they had participated in any problem gambling prevention programs and if so, whether any of these programs had led them to alter their gambling behavior.

Gambling Problems (Others)

All respondents were asked questions about people in their own social circle who gambled regularly and whether there was anyone in their social circle who they felt gambled too much. Respondents who indicated that there was such a person were asked about that person's relationship to them and how that person's gambling had affected them.

Gambling Problems (Self)

All respondents who had engaged in one or more of the gambling activities included in the Gambling Behavior section once a month or more often or indicated that gambling was an important recreational activity or had replaced other recreational activities in the past five years were administered two validated problem gambling instruments.

The first nine questions of this section comprise the Problem Gambling Severity Index (PGSI) from the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001). The PGSI has very good internal consistency (alpha = .89) and good test-retest reliability (r = .78). Criterion validity is established by its correlation (r = .83) with the SOGS and DSM-IV. Construct validity of the PGSI is established by its significant correlations with gambling involvement.

The remaining questions in this section comprise the Problem and Pathological Gambling Measure (PPGM). The PPGM is a relatively new instrument with superior sensitivity, positive predictive power, diagnostic efficiency, and overall classification accuracy compared to the PGSI/CPGI, DSM-IV, and SOGS (Williams & Volberg, 2010, 2014). The PPGM serves as the primary problem gambling measure in the Massachusetts survey while the PGSI/CPGI provides a direct comparison to other gambling surveys conducted worldwide. The PPGM is described in detail in Chapter 5 of this report (see *Problem Gambling in Massachusetts*) and in Appendix E.

Several branching questions were added to many of the CPGI and PPGM questions if the person answered the "stem" question in the affirmative. These supplemental questions provide an important quantification of the social and economic impacts of gambling in Massachusetts by assessing the number of bankruptcies, health care visits, suicide attempts, incidents of domestic violence, divorces, cases of child welfare involvement, illegal acts, arrests, incarcerations, and lost work/school days attributable to problem gambling.

Demographics

All respondents were asked about gender, age, marital status, number of children in the household, highest level of education, employment status, veteran status, healthcare coverage, household income, household debt, immigrant status, Massachusetts residence status, and race/ethnicity. All respondents

were also asked to provide contact information to allow the SEIGMA research team to reach them in the future and invite them to participate in related studies.

To allow for alignment with other gambling surveys conducted in Massachusetts in the same period, the research team reviewed the wording of items with overlapping content in the 2013 BRFSS and revised some items in the questionnaire to match the questions included in the BRFSS. Items that were aligned with the 2013 BRFSS included questions about tobacco use, alcohol use, mental health problems, suicide ideation and attempts, health problems that require the use of special equipment, and level of education.

Translation of the Questionnaire

All of the survey materials were translated into Spanish by Briljent, a company based in Fort Wayne, Indiana, that specializes in translation services. Because an estimated 10% of the Massachusetts population is of Puerto Rican/Dominican descent, all questionnaire and mail materials were translated to accommodate Spanish-speaking residents with the translation specifically directed to the Puerto Rican/Dominican population. Upon completion, translations were reviewed by NORC staff fluent in Spanish. Recommended changes were then returned to Briljent for final comment.

Other languages spoken in a significant proportion of Massachusetts households include Portuguese, French and Chinese. However, less than 1% of Portuguese and Chinese speakers do not speak English well or at all (Modern Language Association, 2010). It was therefore deemed impractical to translate the survey materials into these languages.

Sample Size and Power Calculation

An important methodological consideration in population surveys is that they contain a sufficient sample size for the purposes of estimating (a) the prevalence of problem gambling with some degree of confidence; (b) the levels of gambling-related harm associated with problem gambling; and (c) whether changes from one survey to the next are attributable to chance.

Based on existing research (Williams, Rehm, et al., 2011), the SEIGMA research team estimated that the past-year prevalence rate of problem gambling in Massachusetts was likely to be in the 1% to 2% range (and would likely increase to some extent after the new gambling venues open). Such a low prevalence rate makes it difficult to detect statistically significant changes from Baseline to Post-Opening. As illustrated in the following table, a doubling of rates can be detected with as few as 1,826 people. However, we estimate that the state-wide increase in the problem gambling rate in Massachusetts is more likely to be in the 25% to 50% range.

Table 20 Sample size required to detect significant changes in PG prevalence

25% change		50% change		100% change	
1.0% to 1.25%	22,006	1.0% to 1.5%	6,104	1.0% to 2.0%	1,826
1.5% to 1.875%	14,587	1.5% to 2.25%	4,043	1.5% to 3.0%	1,208
2.0% to 2.5%	10,877	2.0% to 3.0%	3,013	2.0% to 4.0%	899

One-sided test, with alpha = .05 and power = .80

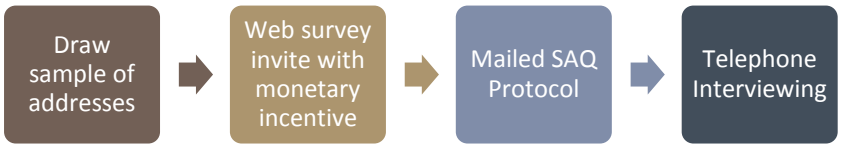
The sample size for the Baseline General Population Survey was designed to detect a 25% increase in the prevalence of problem gambling from a baseline prevalence rate of 2% and a 50% increase in the prevalence of problem gambling from a baseline prevalence rate of 1%.

Survey Design

Multi-Mode Process

Participants in the survey were selected by means of address-based sampling (ABS), a method that ensures each Massachusetts household has an equal probability of selection into the sample whether they have a landline, cell phone or no telephone (Iannacchione, 2011; Link, Battaglia, Frankel, Osborn, & Mokdad, 2008). In an effort to increase overall response rates, the survey was offered in three modes—web, mail, and telephone. The figure below outlines this sequential multi-mode approach.

Figure 35 Multi-mode data collection approach



Sample Size

The initial sample for this survey included 24,400 Massachusetts housing units with a targeted completion rate of approximately 42%, or 10,000 completes. This large number was established in order to recruit a representative sample of Massachusetts residents and to permit detailed analysis of the resulting data. With lower than expected SAQ returns and telephone completes, the release of two additional batches during data collection increased the sample size to 33,368 (see description of *Additional Sample Release* below).

Case Flow

Respondents were first invited to participate in the survey online.[17] If respondents did not complete the survey online, they were sent a hardcopy questionnaire with a postage-paid business reply envelope. Respondents who did not reply in the first two modes were then contacted by telephone. Respondents could also call the study's toll-free line to complete the survey over the telephone at any time.

Data Collection

Data collection began in September, 2013 with the mailing of the first web invitation packet. Mailings were scheduled approximately two weeks apart to give respondents enough time to receive and complete the questionnaire so that NORC could remove completed cases from follow-up mailings. Data collection for the two additional batches began in January, 2014 with data collection concluding at the end of May, 2014.

Advance Letter Mailings

A series of mailings were scheduled to inform households about the survey, how they were selected, encourage respondent participation, and provide contact information for NORC and UMass Amherst. Following protocols outlined by Dillman and colleagues (2009), NORC utilized the following contacts:

[17] The web survey remained open throughout data collection.

Pre-notification mailing. Respondents were first mailed a web packet asking them to complete the survey online. Enclosed with this mailing was a web invitation letter, $1 bill pre-incentive, survey brochure, web insert outlining how to access the web survey, and a list of FAQs. The invitation letter informed respondents of the purpose of the study and provided a web link and PIN to access the survey. The letter also offered a $10 gift code if respondents completed the survey online within 14 days.

Thank-you/reminder postcard. A reminder postcard was then mailed thanking those who had previously completed the survey while reminding non-responders to complete the survey online.

Follow-up web letter. The postcard was followed with a second web mailing. The letter encouraged respondents to complete the survey online and included the web link and PIN to access the survey.

Initial questionnaire mailing. Those who had not completed the survey via the web were sent a SAQ packet. The SAQ packet included a letter, hardcopy questionnaire, postage-paid business reply envelope, $5 bill, and survey brochure. The letter provided instructions for completing the questionnaire online and for returning the questionnaire.

Thank-you/reminder postcard. A second reminder postcard was then mailed thanking those who had previously completed the survey while reminding non-responders to complete the survey.

Replacement survey. The final mailing was a replacement questionnaire to the remaining non-responders with a letter emphasizing the importance of the study.

Prior to each mailing, households that had already completed the survey were removed from the mailing list. Letters were typed on UMass Amherst letterhead with the signature of Dr. Edward Stanek, Co-Principal Investigator on the SEIGMA project. Each mailing provided the study's toll-free number and email address so that respondents could contact NORC with questions or requests for assistance. The data collection schedule for the mailing component for Batches 1 through 3 is outlined in the table below.

Figure 36 Data collection schedule, Batches 1-3

	9/3	9/10	9/17	9/24	10/1	10/8	10/15	10/22	10/29	11/5	11/12	11/19	11/26	12/3	12/10	12/17
Web Packet 1	■			■			■									
Web Reminder Postcard		■			■			■								
Web Packet 2				■			■			■						
SAQ Packet 1						■			■			■				
SAQ Reminder Postcard								■			■			■		
SAQ Packet 2										■			■			■

Languages

The survey was offered in English and Spanish. Spanish-speaking households were flagged so that they would receive bilingual mail materials. Respondents were asked in the web screener whether they would like to continue the survey in English or Spanish. For those completing by telephone, a flagged case would be assigned a Spanish-speaking interviewer. Interviewers also had the option to switch languages at each screen during the survey.

Web Survey Procedures

The first web letter outlined the purpose of the survey and requested that the adult (18 years old or older) in the household who had the most recent birthday complete the study online. The website URL and unique Personal Identification Number (PIN) to access the survey were provided. The letter also stated that if the survey was completed online within 14 days, the respondent would receive a $10 gift code. This 14-day early bird incentive was offered with each initial web packet mailing.

Upon accessing the survey website, a welcome screen asked respondents to enter their assigned PIN. Respondents were then asked a series of screener questions before continuing with the survey—if a respondent did not meet the eligibility requirements, he or she was taken to an exit screen. Eligible respondents would progress past the screener into the online instrument. Respondents could skip any question they did not wish to answer. If the web survey was completed within the 14-day window, respondents were asked at the end of the survey if they would like to receive the $10 Amazon.com gift code. If respondents answered yes, the next screen displayed the gift code. Respondents could then elect to have the gift code emailed to them.

Self-Administered Questionnaire (SAQ) or Mailed Survey Procedures

The first SAQ packet was mailed approximately one month after the first web packet. The letter asked respondents to complete the enclosed hardcopy questionnaire and to return it in the postage paid envelope. The letter also provided the URL and PIN for completing online. The hardcopy questionnaire outlined instructions for completing the survey along with a confidentiality statement. The back cover contained instructions for returning the completed questionnaire to NORC as well as the study's toll-free number to complete the survey over the telephone and the survey link and assigned PIN to complete online. This information was included in each mailing to provide respondents with several options for completing the survey.

Returned SAQs were processed by the Telephone Survey and Support Operations (TSSO) Department at NORC. A barcode was printed on each letter and SAQ allowing trained mail clerks to efficiently code each returned mailing. Completed or partially completed SAQs were sent to Data Services, Inc. (DSI) for data entry. NORC provided DSI with a set of data cleaning rules to follow when entering responses. DSI sent electronic data files to NORC each week followed by the returned hardcopy questionnaires. Electronic data files were shared safely using the Secure File Transfer Protocol (SFTP).

Telephone Interviewing Procedures

NORC sent all sampled addresses to the vendor Marketing Systems Group for matching telephone numbers. The overall telephone match rate was 78% for Batches 1-3, including inexact matches (i.e., matched only to a street address for a multi-unit building). NORC uploaded available telephone numbers for cases that were not already finalized (e.g., completed survey online or by SAQ, requested to be taken off the mailing list). Cases assigned a telephone number were then opened in the system for dialing. There were 12,872 telephone cases uploaded for Batches 1-3. Dialing began January 28, 2014, approximately four months after the first web packet was mailed. Telephone surveys were conducted and monitored by the TSSO department.

Interviewer Training

Interviews were conducted by trained telephone interviewers in the NORC Chicago office. Interviewers were closely monitored for technique and adherence to procedures. In addition to general training in telephone interviewing techniques, interviewers received training in the specific requirements for the study including screening eligible households and maintaining data integrity and confidentiality.

Conducting the Interview

Interviews were conducted using computer-assisted telephone interviewing (CATI) which minimizes potential interviewer errors by controlling progression through the questionnaire and preventing out-of-range responses. If the adult household member with the most recent birthday was not available, a callback was scheduled. In the event of respondent refusals, the case was finalized if it was a hostile or second refusal from the household; no other household members were allowed to continue with the interview. The case management system allowed for "blended" inbound dialing, which provides interviewers the ability to make outbound calls, while also receiving inbound calls to the study's toll-free line. At the end of each call, the interviewer was directed through a series of exit questions to establish the call disposition and set a callback time if necessary.

Refusal Conversion

Each interviewer was given a project-specific job-aid and a list of frequently-asked-questions (FAQs). The FAQs provided interviewers with example refusal statements and responses to obtain respondent cooperation. If a case was coded a refusal and scheduled for a call back, an experienced refusal converter was assigned to the case. If a respondent contacted UMass Amherst or the IRB office at NORC at any point during data collection to refuse to participate in the study, the case was finalized in the case management system. These cases would no longer receive mailings or be dialed in CATI. Refusal notes submitted by respondents via email or mail were documented and analyzed for recurring issues or concerns. An experiment was conducted with Batches 4 and 5 utilizing this information.

Additional Sample Release

Because of a lower-than-anticipated number of SAQ returns, NORC released additional sample and extended the data collection timeline. The first three batches released included 24,400 sample cases; batches 4 and 5 included 1,952 and 7,016 sample cases respectively. Batches 4 and 5 followed the same mailing procedure as previous batches except households were not mailed a web reminder postcard due to a shortened data collection schedule. The following table presents the data collection schedule for Batches 4 and 5.

Figure 37 Data collection schedule, Batches 4 and 5

	1/14	1/21	1/28	2/4	2/11	2/18	2/25	3/4	3/11	3/18	3/25	4/1	4/8
Web Packet 1	■				■								
Web Packet 2			■				■						
SAQ Packet 1					■				■				
SAQ Reminder Postcard						■				■			
SAQ Packet 2									■				■

With the release of additional sample cases, NORC conducted an experiment whereby text was added to materials in the second SAQ packet—the letter, brochure, and hardcopy questionnaire. The text

informed respondents that several questions ask about gambling but encouraged respondents to participate even if they never gambled.

Once all packets were mailed, Batches 4 and 5 were eligible for telephone interview; the overall address to telephone match rates for Batches 4 and 5 were 79% and 77% respectively. There were 1,081 telephone cases uploaded for Batch 4 with dialing beginning on March 25, 2014. Batch 5 had 3,630 telephone cases uploaded with dialing beginning April 22, 2014. Dialing for Batches 4 and 5 began only two and a half months after the first web packets were mailed due to the shortened schedule.

Obstacles Encountered and Solutions Implemented

Missing Gift Codes

Shortly after the start of data collection, it was discovered that the Amazon.com gift code was not being displayed for some eligible respondents upon completing the survey. The screen informing respondents they had qualified for a gift code appeared, however, it did not list the gift code. NORC submitted a form notifying the IRB of the unanticipated problem. These cases were identified on a daily basis and sent a gift code via email from MAHealth@norc.org informing respondents of the technical error. IT staff from NORC assembled an emergency team to troubleshoot the error and found that the gift codes were not always being pulled from the database. IT programmed a new screen that would appear for respondents when a gift code was not pulled. The screen contained text asking for respondents to enter an email address so that a gift code could be emailed within 24 hours. Most respondents entered an email address. For those that did not, the case number and address were matched and the gift code was mailed. Although this system glitch continued intermittently throughout data collection, each case was identified and sent a gift code.

Production Issues

Using data from past research of similar scope, NORC prepared a model of projected completes for each stage of data collection. As data collection progressed, the actual number of completes in web was very close to these projections, which was likely due to the web being a convenient method of completion, the first mode offered, and also because of the offer of an early bird incentive. For those who opted to complete via the web, most were within the 14-day incentive window.

Once the SAQs were mailed, a noticeable gap between the projected number of completes and actual completes emerged. While the exact cause of the gap cannot be known, we speculate that mailing the hardcopy questionnaires during the holiday season may have contributed to the shortfall.

As the survey moved into CATI administration the gap between projected and actual completes continued to widen. The NORC and SEIGMA teams discussed several options to reach the target goal of 10,000 completes. The first alternative discussed was to release additional sample cases. Releasing Batches 4 and 5 provided the best opportunity to reach the target number of completes because it guaranteed an increase in the number of completes within the scheduled timeline without a significant impact on the resulting response rates.

A second method explored to increase response rates stemmed from written feedback from respondents. If respondents returned notes with the SAQ or if they sent an email with comments about the study, the comments were entered into a spreadsheet and monitored to identify any recurring themes or issues. A frequently cited reason that eligible respondents gave for not participating in the study was that they felt the survey was misleading and that it was more focused on gambling and drug

and alcohol use, rather than health and recreational behavior. An experiment was conducted with Batches 4 and 5 in which text was added to the second SAQ packet informing respondents that the survey asked a lot of questions about gambling as a recreational activity but encouraged respondents to participate so that the data would be representative of Massachusetts. This experiment was considered successful and will be more fully implemented in the next SEIGMA Population Survey.

A third approach concerned the definition of a completed case. For a case to be complete in web or CATI, the respondent had to answer the final question in the survey (prior to the series of questions requesting follow up contact information) which asks, "Which one or more of the following would you say is your race?" For a SAQ to be considered complete, the respondent had to answer a set number of questions in the Past-Year Gambling Behavior Section and the Gambling Problems Section. It was determined that if the criteria for a SAQ complete were adjusted to correspond with the rule for web and CATI completes, then the number of completes would increase by approximately 200 cases.

A fourth approach, implemented close to the end of data collection, was to mail a third web letter to a random sample of 1,000 confirmed households from Batches 1-3 inviting them once again to complete the web survey. The web letter was sent using FedEx and USPS Priority for faster delivery. The letter included a similar incentive format with a $1 bill pre-incentive and an offer of a $10 (or, in a subset of cases, $20) gift code upon completion of the survey within 14 days. While this experiment did elicit additional completes (n=50), it was not enough to justify an additional third web letter to a larger sample of Batch 1-3 households.

Additional methods were explored but not implemented due to scheduling and budget constraints. For example, another option was to identify SAQ partial completes and target dial households to ask for responses to only the questions that would need to be answered in order for the SAQ to be complete. Interviewers would have a shortened version of the SAQ so they could fill in the missing responses. The interviewer would also have a hardcopy script available. It was also proposed that the third web letter be sent to an additional sample from Batches 1-3. However, with the below target results from the initial third web mailing, the decision was made not to send any additional mailings.

Data Preparation

Data Editing and Cleaning

A series of data editing and cleaning procedures were implemented in order to provide the SEIGMA research team with the most accurate and comprehensive data files. Throughout data collection, SAS programs were run to identify errors that occurred in the web or CATI systems. This allowed NORC to reconcile inconsistencies in the data and fix system or questionnaire errors as they occurred, minimizing additional data cleaning that would be required at the end of data collection. NORC also worked alongside the SEIGMA research team to establish a series of data cleaning procedures for the raw data. As mentioned previously, questionnaires were sent to DSI for data entry. DSI was directed to enter responses as written without altering any information provided. Then if necessary, NORC would run data cleaning steps based on its established procedures. NORC maintained an Access metadatabase to aid in the data delivery process. The metadatabase included a Master table which listed all variables to be included in the final datasets. Data cleaning procedures that applied to individual cases were listed in the Case Cleaning table while procedures that applied to a large number of cases were listed in the Global Cleaning table. In addition to the metadatabase, SAS programs were written for extensive data cleaning procedures that could not fit within the parameters of the metadatabase tables.

As mentioned previously, respondents were allowed to skip questions in the web while telephone interviewees had the option to select Don't Know and Refused. To maintain consistency across modes, questions in the SAQs that should have been answered based on other responses but instead were left blank, were identified during the data cleaning process and assigned the skip code used in web. The only question that NORC back-coded was D14a "Please specify your race."

Derived Variables

Several derived variables were created for the final dataset in order to provide additional descriptive information for each household. For example, derived variables were created to indicate the mode in which each respondent completed the survey—web, phone, and mail. SAS programs were written utilizing data from existing variables to create the derived variables.

Data Weighting Procedures

In October 2013, NORC provided the SEIGMA research team with an outline of the weighting plan proposed for the Baseline General Population Survey. After review and discussion, NORC agreed to provide an expanded data delivery, including information about partial interviews (as well as completed interviews) and a call history file inclusive of outbound mailing dates. This expanded data delivery will allow the SEIGMA research team to carry out additional methodological investigations, including conducting simulations to evaluate whether survey mode had an impact on response rate. Following agreement on the expanded data delivery, a finalized weighting plan was adopted and NORC constructed the weights.

The weights constructed by NORC accounted for the survey design, screening rates, completion rates, and post-stratification to the 2012 MA population based on four variables (region, age, gender, and race/ethnicity). These weights were used in the analysis of data included in the initial Baseline General Population Survey report (May 2015). Reviewers of the initial report questioned the appropriateness of the weights, and recommended that other variables, such as education, be included in the weights. The reviewers also recommended that raking be used in place of post-stratification as the final step in development of the weights. The weights described here are modified from the original weighting procedure completed by NORC. The modifications were made to address the recommendations of the reviewers, after discussions between NORC and the study investigators.

Summary of New Weighting Procedures

The new weights were constructed by the SEIGMA research team rather than by NORC. Data from the survey were weighted to account for the stratified survey design (wt1), differential screening rates associated with address characteristics (wt2), and response completion rates (wt3). These weights were constructed using the survey address frame and the new weights constructed by the SEIGMA research team used procedures nearly identical to those developed by NORC. The only difference in weight development to this point was accounting for the stratification of addresses by region.

Three additional steps were taken to create new weights. First, weights were added to account for the number of household members aged 18 and over (wt4). Next, 2012 Census estimates of the MA 18+ population from PUMS data were used to form 10 raking variables. An iterative raking process was used until marginal weights converged to PUMS totals (wt5). Finally, the impact of trimming the weight range was evaluated based on the accuracy of estimates of key variables. Weights were trimmed so that the minimum weight was 1/8th the average weight, and the maximum weight was 8 times the average weight (wt6).

Weighting Scheme for the SEIGMA Survey

As summarized above, the weighting scheme involved the following steps:

1. Base sampling weight;
2. Adjustment for screening;
3. Adjustment for completion status at an address;
4. Adjustment for household size;
5. Adjusting weights using raking based on cross-classified pairs of the variables region, age, gender, age, race/ethnicity, education;
6. Trimming of weights by setting the minimum weight to be the average weight divided by 8, and the maximum weight to be the average weight times 8.

Each individual weighting step is discussed in detail below.

Step 1. Base Sampling Weight

The base weight reflected the probability of a household being selected and was equal to the inverse of the probability of selection (π):

$$WT1 = \frac{1}{\pi}$$

where $\pi = \frac{\text{sampled addresses}}{\text{addresses in Frame}}$.

The number of addresses in the frame, and the number selected in the sample are given in Table 21 Design Weights by Region for SEIGMA Baseline General Population SurveyTable 21Table 21

Table 21 Design Weights by Region for SEIGMA Baseline General Population Survey

Massachusetts Region: REGION	# Pop Addresses: AD_POP	# Sampled Addresses: AD_SAMP	Design Wt: WT1
1=West MA	339,199	8,342	40.66
2=East MA	2,391,969	25,026	95.58
	2,731,168	**33,368**	

The design weight is the variable WT1 in the baseline survey dataset. The design weight was assigned to all sampled addresses.

Step 2. Adjustment for Screening

The first adjustment to the weight was to account for those addresses that were unable to be contacted or sufficiently screened and thus had an unknown eligibility status. We note that the 'screened' addresses were classified as 'eligible' or 'in-eligible' addresses. In this adjustment, the weight assigned to addresses that were screened was adjusted to account for addresses not screened. This assumes that the proportion of 'un-screened' addresses that are 'eligible' is equal to the proportion among the 'screened' addresses.

Adjustments were made for different strata using variables that were available for all sampled addresses. First, a logistic regression model was fit to the binary response variable (screened, not-screened) to identify characteristics of the addresses where screening rates differed. Based on these analyses, the three variables most strongly related to screening rates were region, address type (PO Box, single family dwelling, or multiple family dwelling), and language (English or Spanish based on census demographic information from adjacent areas). These variables were used to stratify the n=33,368 sample addresses (see Table 22). No addresses were selected from PO Box areas classified as Spanish speaking in Western MA. In Eastern MA, PO Box addresses were combined across language type, since the number of sampled Spanish speaking addresses was small.

Table 22 Screening Rates by Region, address type and language

Massachusetts Region: REGION	Type of Address: ADDTYP	Language (Pooled): LANGSP2	# Sampled Addresses: SCR_N	# Screened Addresses: SCR_T	% Screened: SCR_P	Screen Adjusted Wt: WT2
1=West MA	1=SFDU-SFam	0=Non-Span	5,137	2,007	39.1%	104.34
1=West MA	1=SFDU-SFam	1=Spanish	851	199	23.4%	174.32
1=West MA	2=MFDU-MFam	0=Non-Span	1,470	461	31.4%	128.94
1=West MA	2=MFDU-MFam	1=Spanish	755	147	19.5%	207.68
1=West MA	9=PO Box	0=Non-Span	129	35	27.1%	146.77
2=East MA	1=SFDU-SFam	0=Non-Span	13,852	4,549	32.8%	290.56
2=East MA	1=SFDU-SFam	1=Spanish	1,225	272	22.2%	429.75
2=East MA	2=MFDU-MFam	0=Non-Span	7,543	1,769	23.5%	408.65
2=East MA	2=MFDU-MFam	1=Spanish	2,019	346	17.1%	559.24
2=East MA	9=PO Box	2=Any Lang	387	67	17.3%	550.79
			33,368	**9,852**		

The screening rate ranged from 17.1% (among multiple family addresses in Spanish speaking areas in Eastern MA) to 39.1% (among single family addresses in non-Spanish speaking areas in Western MA). The screen adjusted weight is the variable WT2 in the baseline survey dataset, given by dividing the design weight (WT1) by the proportion of screened addresses (SCR_P),

$$WT2 = \frac{WT1}{SCR\_P} \ .$$

This weight was assigned to all screened addresses. Addresses that were not screened were dropped from the remaining weighting steps.

Step 3. Adjustment for Completion Status at an Address

The next adjustment accounted for differences in the rate of completed interviews by characteristics of the address, including the final mode of the interview. Before making this adjustment, 10 addresses were dropped since it was determined that the addresses did not have any eligible respondents (based on a telephone interview). As a result, adjustments were made to 9,842 screened addresses.

A complete response was not obtained from all screened addresses. For addresses with a complete response, the non-response adjusted weight accounted for other screened addresses without a complete response. The process used to determine the adjustment strata was similar to the process in Step 2. First, a logistic regression model was fit to the binary response variable (complete, not complete) to identify characteristics of the addresses where completion rates differed. Based on these analyses, the three variables most strongly related to completion rates were region, language (English or

Spanish based on census demographic information from adjacent areas), and mode of interview (Web, SAQ, and CATI). These variables were used to stratify the 9,842 screened sample addresses (see Table 23). We note that some categories (such as PO Box addresses in Western MA) had no sample respondents.

Using the completion rate in each stratum, the completion adjusted weight was evaluated as

$$WT3 = \frac{WT2}{COMP\_P}.$$

The complete response adjusted weight is the variable WT3 in the baseline survey dataset. This weight was assigned to all addresses with a complete response. Addresses where a response was not completed were dropped from the remaining weighting steps.

Table 23 Description of Completion Adjustment Factor for Address Weights from NORC

Massachusetts Region: REGION	Language: LANGSP	Language (Pooled): LANGSP2	Mode of Resp: MODE_ATTEMPT	Type of Address: ADDTYP	# of Screened Addresses: SCR_N	# Addresses with Completed Interview: COMP_N	% Complete: COMP_P	Screen Adjusted Wt: WT2	Completion Adjusted Wt: WT3
1=West MA	0=Non-Span	0=Non-Span	Web	1=SFDU-SFam	620	619	99.74%	104.34	104.60
1=West MA	0=Non-Span	0=Non-Span	Web	2=MFDU-MFam	152	151	99.74%	128.94	129.27
1=West MA	0=Non-Span	0=Non-Span	Web	9=PO Box	10	10	99.74%	146.77	147.15
1=West MA	0=Non-Span	0=Non-Span	SAQ	1=SFDU-SFam	1211	1183	97.46%	104.34	107.06
1=West MA	0=Non-Span	0=Non-Span	SAQ	2=MFDU-MFam	260	251	97.46%	128.94	132.30
1=West MA	0=Non-Span	0=Non-Span	SAQ	9=PO Box	24	23	97.46%	146.77	150.60
1=West MA	0=Non-Span	0=Non-Span	CATI	1=SFDU-SFam	175	162	91.07%	104.34	114.56
1=West MA	0=Non-Span	0=Non-Span	CATI	2=MFDU-MFam	48	41	91.07%	128.94	141.58
1=West MA	0=Non-Span	0=Non-Span	CATI	9=PO Box	1	1	91.07%	146.77	161.16
1=West MA	1=Spanish	1=Spanish	Web	1=SFDU-SFam	41	41	100.0%	174.32	174.32
1=West MA	1=Spanish	1=Spanish	Web	2=MFDU-MFam	34	34	100.0%	207.68	207.68
1=West MA	1=Spanish	1=Spanish	SAQ	1=SFDU-SFam	139	132	96.61%	174.32	180.44
1=West MA	1=Spanish	1=Spanish	SAQ	2=MFDU-MFam	97	96	96.61%	207.68	214.97
1=West MA	1=Spanish	1=Spanish	CATI	1=SFDU-SFam	19	18	82.86%	174.32	210.39
1=West MA	1=Spanish	1=Spanish	CATI	2=MFDU-MFam	16	11	82.86%	207.68	250.65
2=East MA	0=Non-Span	0=Non-Span	Web	1=SFDU-SFam	1374	1373	99.95%	290.56	290.72
2=East MA	0=Non-Span	0=Non-Span	Web	2=MFDU-MFam	551	551	100.0%	408.65	408.65
2=East MA	0=Non-Span	2=Any Lang	Web	9=PO Box	19	19	100.0%	550.79	550.79
2=East MA	0=Non-Span	0=Non-Span	SAQ	1=SFDU-SFam	2667	2610	97.69%	290.56	297.43
2=East MA	0=Non-Span	0=Non-Span	SAQ	2=MFDU-MFam	1015	987	97.73%	408.65	418.15
2=East MA	0=Non-Span	2=Any Lang	SAQ	9=PO Box	44	43	97.73%	550.79	563.60
2=East MA	0=Non-Span	0=Non-Span	CATI	1=SFDU-SFam	502	454	90.18%	290.56	322.19
2=East MA	0=Non-Span	0=Non-Span	CATI	2=MFDU-MFam	201	180	100.0%	408.65	408.65
2=East MA	0=Non-Span	2=Any Lang	CATI	9=PO Box	2	2	100.0%	550.79	550.79
2=East MA	1=Spanish	1=Spanish	Web	1=SFDU-SFam	61	61	100.0%	429.75	429.75
2=East MA	1=Spanish	1=Spanish	Web	2=MFDU-MFam	75	75	100.0%	559.24	559.24
2=East MA	1=Spanish	2=Any Lang	Web	9=PO Box	1	1	100.0%	550.79	550.79
2=East MA	1=Spanish	1=Spanish	SAQ	1=SFDU-SFam	178	170	96.39%	429.75	445.83
2=East MA	1=Spanish	1=Spanish	SAQ	2=MFDU-MFam	210	204	100.0%	559.24	559.24
2=East MA	1=Spanish	2=Any Lang	SAQ	9=PO Box	1	1	100.0%	550.79	550.79
2=East MA	1=Spanish	1=Spanish	CATI	1=SFDU-SFam	33	26	81.91%	429.75	524.63
2=East MA	1=Spanish	1=Spanish	CATI	2=MFDU-MFam	61	51	81.91%	559.24	682.70
					9842	**9581**			

Step 4.Adjustment for Household Size

The number of persons 18 years or older was reported by respondents for some of the addresses, depending upon whether the respondent completed the questionnaire on the Web, via a SAQ, or via a telephone interview. The number of 18+ persons in a household was not recorded as part of the SAQ so this value is missing for respondents who completed the survey in this mode. Three respondents with completed questionnaires were under age 18 and dropped from further analyses. For this reason, the total number of completed responses is 9,578. The number of 18+ household members was not reported for 4,994 (52.1%) of the respondents. The distribution of the number of household members 18+ is given in Table 24Table 24 Number of 18+ Household MembersTable 24Table 24Table 24Table 24.

Table 24 Number of 18+ Household Members

# HH members	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	1188	25.92	1188	25.92
2	2435	53.12	3623	79.04
3	590	12.87	4213	91.91
4	293	6.39	4506	98.30
5	52	1.13	4558	99.43
6	16	0.35	4574	99.78
7	3	0.07	4577	99.85
8	1	0.02	4578	99.87
10	1	0.02	4579	99.89
11	1	0.02	4580	99.91
20	1	0.02	4581	99.93
22	1	0.02	4582	99.96
25	1	0.02	4583	99.98
40	1	0.02	4584	100.00

Based on discussions with NORC, a decision was made to classify household size as 4 when the number of 18+ persons in a household was reported to be greater than or equal to 4. This truncation was made to avoid assigning very large weights to any one respondent and affected 78 respondents. Table 25 Table 25Table 25below is organized in a similar manner to Table 23, but with the frequency of responses for various size households listed instead of the weights. The total number of respondents in Table 25 is 9,578 corresponding to the number of respondents in the baseline survey. In order to account for household size in the weighting, we multiply the weight (WT3) from Table 23 by the number of household members in a household (using a multiple of 4 for households with 4+ household members). The total weight for respondents with known household size is given in Table 26.

Table 25 Description of Household Size by other Address Characteristics

Massachusetts Region: REGION=1=West

Massachusetts Region: REGION	Language: LANGSP	Language (Pooled): LANGSP2	Mode of Resp: MODE_ATTEMPT	Type of Address: ADDTYP	Missing HH Size	HH Size: 1	HH Size: 2	HH Size: 3	HH Size: 4+
1=West	0=Non-Span	0=Non-Span	Web	1=SFDU-SFam	7	122	369	70	51
1=West	0=Non-Span	0=Non-Span	Web	2=MFDU-MFam	1	81	58	6	5
1=West	0=Non-Span	0=Non-Span	Web	9=PO Box		3	5	2	
1=West	0=Non-Span	0=Non-Span	SAQ	1=SFDU-SFam	1,027	36	89	24	7
1=West	0=Non-Span	0=Non-Span	SAQ	2=MFDU-MFam	218	15	16	2	
1=West	0=Non-Span	0=Non-Span	SAQ	9=PO Box	21	1	1		
1=West	0=Non-Span	0=Non-Span	CATI	1=SFDU-SFam	35	39	63	18	7
1=West	0=Non-Span	0=Non-Span	CATI	2=MFDU-MFam	10	25	4	1	1
1=West	0=Non-Span	0=Non-Span	CATI	9=PO Box				1	
1=West	1=Spanish	1=Spanish	Web	1=SFDU-SFam	1	9	20	8	3
1=West	1=Spanish	1=Spanish	Web	2=MFDU-MFam	1	18	6	5	4
1=West	1=Spanish	1=Spanish	SAQ	1=SFDU-SFam	117	7	5	2	1
1=West	1=Spanish	1=Spanish	SAQ	2=MFDU-MFam	84	6	5	1	
1=West	1=Spanish	1=Spanish	CATI	1=SFDU-SFam	1	4	7	4	2
1=West	1=Spanish	1=Spanish	CATI	2=MFDU-MFam	2	5	2	1	1
REGION					**1,525**	**371**	**650**	**145**	**82**

Massachusetts Region: REGION=2=East

Massachusetts Region: REGION	Language: LANGSP	Language (Pooled): LANGSP2	Mode of Resp: MODE_ATTEMPT	Type of Address: ADDTYP	Missing HH Size	HH Size: 1	HH Size: 2	HH Size: 3	HH Size: 4+
2=East	0=Non-Span	0=Non-Span	Web	1=SFDU-SFam	19	198	786	213	157
2=East	0=Non-Span	0=Non-Span	Web	2=MFDU-MFam	7	223	253	43	25
2=East	0=Non-Span	0=Non-Span	SAQ	1=SFDU-SFam	2,163	60	277	74	34
2=East	0=Non-Span	0=Non-Span	SAQ	2=MFDU-MFam	818	58	91	10	10
2=East	0=Non-Span	0=Non-Span	CATI	1=SFDU-SFam	74	95	199	52	34
2=East	0=Non-Span	0=Non-Span	CATI	2=MFDU-MFam	32	87	49	9	3
2=East	0=Non-Span	2=Any Lang	Web	9=PO Box		3	13	3	
2=East	0=Non-Span	2=Any Lang	SAQ	9=PO Box	35	3	4		1
2=East	0=Non-Span	2=Any Lang	CATI	9=PO Box	1	1			
2=East	1=Spanish	1=Spanish	Web	1=SFDU-SFam	1	13	27	14	6
2=East	1=Spanish	1=Spanish	Web	2=MFDU-MFam	3	30	31	7	4
2=East	1=Spanish	1=Spanish	SAQ	1=SFDU-SFam	136	5	19	5	5
2=East	1=Spanish	1=Spanish	SAQ	2=MFDU-MFam	167	12	14	7	3
2=East	1=Spanish	1=Spanish	CATI	1=SFDU-SFam	5	4	11	4	2
2=East	1=Spanish	1=Spanish	CATI	2=MFDU-MFam	7	25	11	3	5
2=East	1=Spanish	2=Any Lang	Web	9=PO Box				1	
2=East	1=Spanish	2=Any Lang	SAQ	9=PO Box	1				
REGION					**3,469**	**817**	**1,785**	**445**	**289**
					4,994	**1,188**	**2,435**	**590**	**371**

Table 26 Description of Total WT3 Assigned by Household Size and other Address Characteristics

Massachusetts Region: REGION=1=West

Massachusetts Region: REGION	Language: LANGSP	Language (Pooled): LANGSP2	Mode of Resp: MODE_ ATTEMPT	Type of Address: ADDTYP	Missing HH Size	Total Wt3 HH Size: 1	Total Wt3 HH Size: 2	Total Wt3 HH Size: 3	Total Wt3 HH Size: 4
1=West	0=Non-Span	0=Non-Span	Web	1=SFDU-SFam	7	12,762	77,197	21,967	21,339
1=West	0=Non-Span	0=Non-Span	Web	2=MFDU-MFam	1	10,471	14,995	2,327	2,585
1=West	0=Non-Span	0=Non-Span	Web	9=PO Box		441	1,471	883	
1=West	0=Non-Span	0=Non-Span	SAQ	1=SFDU-SFam	1,027	3,854	19,056	7,708	2,998
1=West	0=Non-Span	0=Non-Span	SAQ	2=MFDU-MFam	218	1,985	4,234	794	
1=West	0=Non-Span	0=Non-Span	SAQ	9=PO Box	21	151	301		
1=West	0=Non-Span	0=Non-Span	CATI	1=SFDU-SFam	35	4,468	14,435	6,187	3,208
1=West	0=Non-Span	0=Non-Span	CATI	2=MFDU-MFam	10	3,540	1,133	425	566
1=West	0=Non-Span	0=Non-Span	CATI	9=PO Box				483	
1=West	1=Spanish	1=Spanish	Web	1=SFDU-SFam	1	1,569	6,973	4,184	2,092
1=West	1=Spanish	1=Spanish	Web	2=MFDU-MFam	1	3,738	2,492	3,115	3,323
1=West	1=Spanish	1=Spanish	SAQ	1=SFDU-SFam	117	1,263	1,804	1,083	722
1=West	1=Spanish	1=Spanish	SAQ	2=MFDU-MFam	84	1,290	2,150	645	
1=West	1=Spanish	1=Spanish	CATI	1=SFDU-SFam	1	842	2,945	2,525	1,683
1=West	1=Spanish	1=Spanish	CATI	2=MFDU-MFam	2	1,253	1,003	752	1,003
REGION					**1,525**	**47,625**	**150,190**	**53,076**	**39,518**

Massachusetts Region: REGION=2=East

Massachusetts Region: REGION	Language: LANGSP	Language (Pooled): LANGSP2	Mode of Resp: MODE_ATTEMPT	Type of Address: ADDTYP	Missing HH Size	Total Wt3 HH Size: 1	Total Wt3 HH Size: 2	Total Wt3 HH Size: 3	Total Wt3 HH Size: 4
2=East	0=Non-Span	0=Non-Span	Web	1=SFDU-SFam	19	57,562	457,004	185,767	182,569
2=East	0=Non-Span	0=Non-Span	Web	2=MFDU-MFam	7	91,129	206,777	52,716	40,865
2=East	0=Non-Span	0=Non-Span	SAQ	1=SFDU-SFam	2,163	17,846	164,777	66,030	40,451
2=East	0=Non-Span	0=Non-Span	SAQ	2=MFDU-MFam	818	24,253	76,104	12,545	16,726
2=East	0=Non-Span	0=Non-Span	CATI	1=SFDU-SFam	74	30,608	128,230	50,261	43,817
2=East	0=Non-Span	0=Non-Span	CATI	2=MFDU-MFam	32	35,553	40,048	11,034	4,904
2=East	0=Non-Span	2=Any Lang	Web	9=PO Box		1,652	14,321	4,957	
2=East	0=Non-Span	2=Any Lang	SAQ	9=PO Box	35	1,691	4,509		2,254
2=East	0=Non-Span	2=Any Lang	CATI	9=PO Box	1	551			
2=East	1=Spanish	1=Spanish	Web	1=SFDU-SFam	1	5,587	23,206	18,049	10,314
2=East	1=Spanish	1=Spanish	Web	2=MFDU-MFam	3	16,777	34,673	11,744	8,948
2=East	1=Spanish	1=Spanish	SAQ	1=SFDU-SFam	136	2,229	16,942	6,688	8,917
2=East	1=Spanish	1=Spanish	SAQ	2=MFDU-MFam	167	6,711	15,659	11,744	6,711
2=East	1=Spanish	1=Spanish	CATI	1=SFDU-SFam	5	2,099	11,542	6,296	4,197
2=East	1=Spanish	1=Spanish	CATI	2=MFDU-MFam	7	17,068	15,019	6,144	13,654
2=East	1=Spanish	2=Any Lang	Web	9=PO Box				1,652	
2=East	1=Spanish	2=Any Lang	SAQ	9=PO Box	1				
REGION					**3,469**	**311,314**	**1,208,810**	**445,626**	**384,327**
					4,994	**358,939**	**1,359,000**	**498,702**	**423,845**

In Table 26, the total weight assigned to respondents with known household size is 290,410.01 in Western MA, and 2,350,076.59 in Eastern MA. When household size is unknown, if we assume the household size is one for each household, the total weight (WT2) for respondents with unknown household size would be 188,501.26 in Western MA, and 1,215,057.73 in Eastern MA. We used these totals, along with the 2012 PUMS MA population data to determine the number of 18+ persons to be associated with respondents where household size is unknown. In Western MA, this number is 657,392-290,410.01=366,981.99, while in Eastern MA, this number is 4,587,237-2,350,076.59=2,237,160.41. Using these values, we assign an average household size of 366,981.99/188,501.26=1.95 to respondents in Western MA where household size is unknown, and an average household size of 2,237,160.41/1,215,057.73=1.84 to respondents in Eastern MA where household size was unknown.

Table 27 lists the weights adjusted for household size, using a household size of 1.95 in Western MA or 1.84 in Eastern MA when the respondent's household size was not reported. The weights adjusted for household size in Table 27 are WT4.

Table 27 Description of WT4 Assigned by Household Size and Other Address Characteristics

Massachusetts Region: REGION	Language: LANGSP	Language (Pooled): LANGSP2	Mode of Resp: MODE_ATTEMPT	Type of Address: ADDTYP	HH Size Unknown Weight: WT4	HH Size=1 Weight: WT4	HH Size=2 Weight: WT4	HH Size=3 Weight: WT4	HH Size=4 Weight: WT4
1=West	0=Non-Span	0=Non-Span	Web	1=SFDU-SFam	204	105	209	314	418
1=West	0=Non-Span	0=Non-Span	Web	2=MFDU-MFam	252	129	259	388	517
1=West	0=Non-Span	0=Non-Span	Web	9=PO Box	286	147	294	441	589
1=West	0=Non-Span	0=Non-Span	SAQ	1=SFDU-SFam	208	107	214	321	428
1=West	0=Non-Span	0=Non-Span	SAQ	2=MFDU-MFam	258	132	265	397	529
1=West	0=Non-Span	0=Non-Span	SAQ	9=PO Box	293	151	301	452	602
1=West	0=Non-Span	0=Non-Span	CATI	1=SFDU-SFam	223	115	229	344	458
1=West	0=Non-Span	0=Non-Span	CATI	2=MFDU-MFam	276	142	283	425	566
1=West	0=Non-Span	0=Non-Span	CATI	9=PO Box	314	161	322	483	645
1=West	1=Spanish	1=Spanish	Web	1=SFDU-SFam	339	174	349	523	697
1=West	1=Spanish	1=Spanish	Web	2=MFDU-MFam	404	208	415	623	831
1=West	1=Spanish	1=Spanish	SAQ	1=SFDU-SFam	351	180	361	541	722
1=West	1=Spanish	1=Spanish	SAQ	2=MFDU-MFam	419	215	430	645	860
1=West	1=Spanish	1=Spanish	CATI	1=SFDU-SFam	410	210	421	631	842
1=West	1=Spanish	1=Spanish	CATI	2=MFDU-MFam	488	251	501	752	1,003
2=East	0=Non-Span	0=Non-Span	Web	1=SFDU-SFam	535	291	581	872	1,163
2=East	0=Non-Span	0=Non-Span	Web	2=MFDU-MFam	752	409	817	1,226	1,635
2=East	0=Non-Span	0=Non-Span	SAQ	1=SFDU-SFam	548	297	595	892	1,190
2=East	0=Non-Span	0=Non-Span	SAQ	2=MFDU-MFam	770	418	836	1,254	1,673
2=East	0=Non-Span	0=Non-Span	CATI	1=SFDU-SFam	593	322	644	967	1,289
2=East	0=Non-Span	0=Non-Span	CATI	2=MFDU-MFam	752	409	817	1,226	1,635
2=East	0=Non-Span	2=Any Lang	Web	9=PO Box	1,014	551	1,102	1,652	2,203
2=East	0=Non-Span	2=Any Lang	SAQ	9=PO Box	1,038	564	1,127	1,691	2,254
2=East	0=Non-Span	2=Any Lang	CATI	9=PO Box	1,014	551	1,102	1,652	2,203
2=East	1=Spanish	1=Spanish	Web	1=SFDU-SFam	791	430	859	1,289	1,719
2=East	1=Spanish	1=Spanish	Web	2=MFDU-MFam	1,030	559	1,118	1,678	2,237
2=East	1=Spanish	1=Spanish	SAQ	1=SFDU-SFam	821	446	892	1,338	1,783
2=East	1=Spanish	1=Spanish	SAQ	2=MFDU-MFam	1,030	559	1,118	1,678	2,237
2=East	1=Spanish	1=Spanish	CATI	1=SFDU-SFam	966	525	1,049	1,574	2,099
2=East	1=Spanish	1=Spanish	CATI	2=MFDU-MFam	1,257	683	1,365	2,048	2,731
2=East	1=Spanish	2=Any Lang	Web	9=PO Box	1,014	551	1,102	1,652	2,203
2=East	1=Spanish	2=Any Lang	SAQ	9=PO Box	1,014	551	1,102	1,652	2,203

Step 5. Adjusting weights using raking based on cross-classified pairs of the variables region, age, gender, age, race/ethnicity, education.

We adjusted weights assigned to subjects to more closely align with the distribution of 18+ year old persons in MA by region (Western, Eastern MA), age (18-34, 35-49, 50-64, 65+), gender (male, female), race/ethnicity (Hispanic, Black (only), Asian (only), White and other), and education (high school or less, some college/college graduate, some post graduate education). Weights for the original report in May 2015 were adjusted via post-stratification excluding education. The weights developed in Step 5 are based on raking based on recommendations by the MGC Gaming Research Advisory Committee and senior statisticians at NORC.

We determined raking variables via a preliminary analysis of the 2012 one-year American Community Survey Public Use Microdata Sample (PUMS) files. In an ideal setting, reliable PUMS data for population totals would be available for a full cross-classification of adjustment variables. In practice, estimates of the population based on the PUMS data are based on an approximate 1% sample of the MA population, and the PUMS data themselves are weighted to estimate the number of subjects in each post-stratum. As a first step, we evaluated the reliability of the PUMS estimates of totals in cells formed by a cross-classification of raking variables. Reliability was evaluated by calculating the coefficient of variation in the estimated total PUMS weight, and the number of PUMS respondents for each possible raking cell from among the 2 x 4 x 2 x 4 x 3 = 192 cells. The coefficient of variation is the estimated standard error of the mean, divided by the mean, and expressed as a percent.

We determined raking variables by examining possible domains where it was possible to reliably estimate the population (i.e., have a coefficient of variation less than 10%). For example, using each raking variable individually, the maximum coefficient of variation of the number of subjects in a stratum was 1.35%. Using 10 pairs of variables (i.e., region x age, region x gender, etc.), the maximum coefficient of variation of the number of subjects in a stratum was 7%. Using 10 triplets of variables (i.e., region x age x gender, etc.), there were several strata where the number of PUMS respondents was less than 20, and the coefficient of variation was greater than 10%. The coefficient of variation increased as finer strata were constructed.

We elected to rake on pairs of primary variables and to use all possible pairs of the primary variables as raking variables. By cross-classifying pairs of primary variables, a large number of respondents were in each cell in both the sample (more than 50 respondents except for cells for Asians where education was LE HS (n=24), cells for Asians where age was 65+ (n=38), or cells for Asians where region was Western MA (n=27)) and in the PUMS data. Raking by pairs of the primary variables guarantees a representative weight (i.e., a weight that matches the population weight) for each pair. This means that fitted models using weighting will properly represent the population distribution for up to two-way interactions with the primary outcome variables.

Region was reported for all respondents, but each of the other variables was missing for one or more respondents. We allowed for missing values for the primary variables when defining cells for raking. For example the first raking variable, V1, was region x age. If each of the primary variables was known on each respondent, V1 would have 8 categories corresponding to a cross-classification of the region x age categories=2 x 4. Since age was not reported by all respondents, we added a 5^{th} category to age corresponding to "missing age." As a result, the variable V1 used for raking had 10=2 x 5 categories.

With 5 primary variables, there are 10 ways of pairing primary variables to form raking variables. Each raking variable corresponds to a different pair of primary variables. Raking was accomplished in steps, by consecutively using each of the raking variables to align the sample weighted marginals to the population marginal. We refer to the consecutive raking of all 10 raking variables as an iteration. This process was continued until the sample weights converged to the population weights for each of the raking variables.

Each of the SEIGMA respondents was assigned a survey weight, WT4, based on other characteristics prior to raking. The weights were assigned so that the total weight for the respondents matched the PUMS 2012 weight for MA.

Description of a Step in the Raking

Raking was accomplished using a SAS program written for this purpose. We summarize the process here using the first raking variable, V1, corresponding to region x age. The first step was to evaluate the total weight (NWT4) in each of the 2 x 5 =10 cells for the sample. Let us refer to these weights by x_{ij} for $i=1,...,2$ (corresponding to regions), and $j=1,...,5$ (corresponding to age categories, where j=5 corresponds to 'missing age'). The population weights, p_{ij} , were based on the 2012 PUMS data. Among the population data, there were no missing values. Using the categories of region and age, the total population was the sum over 2 x 4 = 8 cells, $p_{++}=\sum_{i=1}^{2}\sum_{j=1}^{4}p_{ij}$. As a result, when raking by the variable V1, we first re-allocated PUMS data to form categories representing "missing age."

Forming Adjusted Population Weights Accounting for Missing Values in Primary Variables

We illustrate the process of forming adjusted population weights using the adjustment for V1, region x age, as an example. Let the total sample and population weight in region i be given by $x_{i+}=\sum_{j=1}^{5}x_{ij}$ and $p_{i+}=\sum_{j=1}^{4}p_{ij}$, respectively. We assign population weights to cells in a region where age is missing proportional to the weight assigned these cells in the sample in the region, $p_{i5}^{*}=p_{i+}\left(\frac{x_{i5}}{x_{i+}}\right)$. We refer to these population weights as 'adjusted' weights, since they are adjusted for missing values in the primary variables. Population weights for individual cells with age known in a region are adjusted to preserve the overall population weight in the region, p_{i+} , such that $p_{ij}^{*}=p_{ij}\left(\frac{p_{i+}-p_{i5}^{*}}{p_{i+}}\right)$, for $i=1,...,2$ and $j=1,...,4$.

We illustrate this for V1, corresponding to Region x Age in Table 28. Row A contains the initial PUMS data, and Row B contains the adjusted totals, accounting for missing age based on the survey respondents.

Table 28 Population and Sample Weight Totals Prior to Adjustments for V1

	Western MA					Eastern MA				
	18-34	**35-49**	**50-64**	**65+**	**Missing**	**18-34**	**35-49**	**50-64**	**65+**	**Missing**
A	195,492	154,547	178,031	129,322	0	1,375,212	1,203,517	1,179,194	829,314	0
B	187,668	148,362	170,906	124,146	26,311	1,299,887	1,137,596	1,114,605	783,890	251,259

A similar process was followed to adjust the population weights for missing values with other primary variables.

Matching Sample to Population Marginals for Steps with Raking Variables 1-10.

The total sample weight assigned to a cell for a raking variable is the sum of WT4 assigned to respondents in that cell. We index categories for the 5 primary variables by $i=1,2$ for region, $j=1,\ldots,5$ for age, $k=1,\ldots,3$ for gender, $l=1,\ldots,5$ for race, and $m=1,\ldots,4$ for education. Respondents within a cell are indexed by $q=1,\ldots,n_{ijklm}$. The total sample weight assigned to a cell for the first raking variable, V1, is given by

$$x_{ij} = \sum_{k=1}^{3}\sum_{l=1}^{5}\sum_{m=1}^{4} x_{ijklm} = \sum_{k=1}^{3}\sum_{l=1}^{5}\sum_{m=1}^{4}\left(\sum_{q=1}^{n_{ijklm}} x_{ijklmq}\right)'$$

where $x_{ijklm} = \sum_{q=1}^{n_{ijklm}} x_{ijklmq}$. The first step in an iteration of raking aligns the sample marginal to the population marginal by forming the new weight for cells based on the full cross-classification of the five variables, such that

$$x_{ijklm}^{(1)} = x_{ijklm}\left(\frac{p_{ij}^{*}}{x_{ij}}\right).$$

Using these weights, the total weight is evaluated for each cell corresponding to the next raking variable, V2 (corresponding to region x sex), i.e. $x_{ik}^{(1)} = \sum_{j=1}^{5}\sum_{l=1}^{5}\sum_{m=1}^{4} x_{ijklm}^{(1)}$. Once again, using the population marginal weights, we align the sample marginal to the population marginal for V2, such that

$$x_{ijklm}^{(2)} = x_{ijklm}^{(1)}\left(\frac{p_{ik}^{*}}{x_{ik}^{(1)}}\right).$$

This process is continued for each of the 10 raking variables, resulting in the marginal total weights in each cell after one iteration given by $r_{ijklm}^{1} = x_{ijklm}^{(10)}$. Table 29 summarizes the sample and aligned population weights prior to raking for each of the 10 raking variables.

Table 29 Sample and Aligned Population Weights Prior to Raking on 10 Variables

Step 1: Region x Age										
	Western MA					**Eastern MA**				
	18-34	**35-49**	**50-64**	**65+**	**Missing**	**18-34**	**35-49**	**50-64**	**65+**	**Missing**
Pop Margin	187,668	148,362	170,906	124,146	26,311	1,299,887	1,137,596	1,114,605	783,890	251,259
Samp Margin	92,184	136,669	211,576	190,652	26,311	777,669	935,015	1,383,712	1,239,581	251,259

Step 2: Region x Sex						
	Western MA			**Eastern MA**		
	Male	**Female**	**Missing**	**Male**	**Female**	**Missing**
Pop Margin	305,109	345,972	6,311	2,167,037	2,363,390	56,811
Samp Margin	254,609	396,472	6,311	1,857,709	2,672,718	56,811

Step 3: Region x Race										
	Western MA					Eastern MA				
	Hispanic	White	Black	Asian	Missing	Hispanic	White	Black	Asian	Missing
Pop Margin	73,099	517,576	31,199	15,559	19,959	365,460	3,508,761	268,791	271,422	172,803
Samp Margin	60,692	550,007	19,760	6,974	19,959	289,989	3,699,981	176,977	247,488	172,803

Step 4: Region x Education								
	Western MA				Eastern MA			
	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing
Pop Margin	261,931	308,974	73,322	13,166	1,621,184	2,171,217	699,733	95,104
Samp Margin	155,471	343,255	145,500	13,166	789,453	2,396,302	1,306,379	95,104

Step 5: Age x Sex									
	18-34			35-49			50-64		
	Male	Female	Missing	Male	Female	Missing	Male	Female	Missing
Pop Margin	735,576	748,555	559	627,023	656,188	2,322	619,025	663,393	4,215
Samp Margin	318,072	551,222	559	379,833	689,529	2,322	673,543	917,530	4,215

	65+			Missing		
	Male	Female	Missing	Male	Female	Missing
Pop Margin	382,734	523,064	4,405	93,291	132,659	51,621
Samp Margin	647,579	778,250	4,405	93,291	132,659	51,621

Step 6: Age x Race										
	18-34					35-49				
	Hispanic	White	Black	Asian	Missing	Hispanic	White	Black	Asian	Missing
Pop Margin	191,126	1036829	107,158	115,183	16,553	128,386	955,074	84,164	86,332	23,330
Samp Margin	107,555	594,502	54,224	97,020	16,553	109,281	807,842	54,557	76,674	23,330

	50-64					65+				
	Hispanic	White	Black	Asian	Missing	Hispanic	White	Black	Asian	Missing
Pop Margin	71,661	1,068,889	64,014	48,619	42,280	29,090	798,678	32,274	25,108	42,311
Samp Margin	79,160	1,395,213	41,159	37,477	42,280	36,165	1,293,838	33,147	24,772	42,311

	Missing				
	Hispanic	White	Black	Asian	Missing
Pop Margin	18,519	158,594	13,650	18,520	68,288
Samp Margin	18,519	158,594	13,650	18,520	68,288

Step 7: Age x Education												
	18-34				35-49				50-64			
	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing
Pop Margin	475,372	842,425	151,694	7,167	409,127	623,515	237,912	7,339	451,124	599,124	219,520	26,941
Samp Margin	129,922	525,715	207,049	7,167	131,697	584,697	347,951	7,339	242,172	852,572	473,602	26,941

	64+				Missing			
	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing
Pop Margin	463,266	304,221	129,376	18,934	32,419	116,994	80,270	47,888
Samp Margin	408,714	659,578	343,007	18,934	32,419	116,994	80,270	47,888

Step 8: Sex x Race										
	Male					Female				
Obs	Hispanic	White	Black	Asian	Missing	Hispanic	White	Black	Asian	Missing
Pop Margin	209,066	1,911,590	139,876	134,351	87,356	226,554	2,088,908	158,245	150,948	74,614
Samp Margin	120,469	1,706,511	74,448	123,533	87,356	226,963	2,515,165	122,288	130,159	74,614

	Missing				
Obs	Hispanic	White	Black	Asian	Missing
Pop Margin	3,248	28,312	0	770	30,792
Samp Margin	3,248	28,312	0	770	30,792

Step 9: Sex x Education												
	Male				Female				Missing			
	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing
Pop Margin	942,303	1,128,816	365,545	34,188	930,069	1,337,251	403,124	40,212	4,584	16,750	7,918	33,870
Samp Margin	373,566	1,081,124	623,440	34,188	566,774	1,641,682	820,521	40,212	4,584	16,750	7,918	33,870

Step 10: Race x Education												
	Hispanic				White				Black			
	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing
Pop Margin	255,910	155,099	23,233	6,889	1,347,309	2,009,906	630,633	33,427	140,607	135,963	20,608	2,368
Samp Margin	137,758	154,987	51,046	6,889	721,837	2,291,474	1,203,249	33,427	46,476	119,165	28,727	2,368

	Asian				Missing			
	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing
Pop Margin	90,622	115,150	78,626	5,517	20,458	60,644	51,593	60,067
Samp Margin	18,394	113,286	117,265	5,517	20,458	60,644	51,593	60,067

Iterating Raking

We repeat the process of aligning the marginals over the 10 raking variables using the raked marginal, $r_{ijklm}^{(t-1)}$, until the marginal totals based on the raked weights, i.e. $r_{ij}^{t} = \sum_{k=1}^{3}\sum_{l=1}^{5}\sum_{m=1}^{4} r_{ijklm}^{t}$ for cells in V1-V10 at iteration t, are sufficiently close to the population marginal weights, p_{ij}^{*}. The criterion for closeness is the maximum (over all cells) of the percent difference in weight between the raked sample weight and the population weight. This criterion is determined by evaluating the maximum percent difference in marginal weight for each raking variable, given by

$$\mathrm{m}_1^t = \max\left[100\left(\frac{r_{ij}^t - p_{ij}^*}{p_{ij}^*}\right); i = 1,2; \mathrm{j} = 1,\ldots,5\right]$$

for V1, $\mathrm{m}_2^t = \max\left[100\left(\frac{r_{ik}^t - p_{ik}^*}{p_{ik}^*}\right); i = 1,2; \mathrm{k} = 1,\ldots,3\right]$ for V2, etc., and then taking the maximum of these percent differences, given by $\mathrm{m}^t = \max\left(m_1^t, m_2^t, m_3^t, \ldots, m_{10}^t\right)$.

The raking procedure stops when m^t is below a value that is set as the largest possible acceptable percent difference between sample and population marginal weights. This difference is set at $m(\max) = 10\%$, implying that the maximum difference between the raked weights and the population weights is at most 10%.

The criteria for stopping iterations for raking is based in part on the coefficient of variation for population values for the marginals and in part on the performance of the raking procedure using the 10 raking variables. The population marginals are constructed from PUMS data, which in turn are based on a weighted one percent sample of MA subjects. Using the basic PUMS data, we calculated the coefficient of variation of the total for each marginal population cell. While most of the coefficients of variation are less than 1 or 2 percent, the

coefficient of variation for "Asians in Western MA " is 7% (based on 142 respondents in the PUMS 2012 data). A value of $m(\max)=10\%$ is large enough to account for this level of population variability.

The second factor leading to setting $m(\max)=10\%$ is based on experience with the raking program. With 4 raking variables, the raking procedure was able to perfectly match the sample marginal to the population. Addition of the remaining 6 raking variables resulted in the program converging to a m^t of approximately 6% after 3 iterations, but no further reduction in m^t even out to $t=50$ iterations. By aligning one set of marginals in a step, other marginals were perturbed. For these reasons, raking stopped after 3 iterations, with $m^3=6.22\%$. The final raked weights are summarized in Table 30.

Table 30 Comparison of Raking Variable Weights with Population Weights after Adjustment

Step 1: Region x Age										
	Western MA					Eastern MA				
	18-34	35-49	50-64	65+	Missing	18-34	35-49	50-64	65+	Missing
Pop Margin	187,668	148,362	170,906	124,146	26,311	1,299,887	1,137,596	1,114,605	783,890	251,259
Samp Margin	185,941	146,969	171,985	125,171	26,128	1,291,325	1,129,892	1,124,606	792,443	250,168

Step 2: Region x Sex						
	Western MA			Eastern MA		
	Male	Female	Missing	Male	Female	Missing
Pop Margin	305,109	345,972	6,311	2,167,037	2,363,390	56,811
Samp Margin	304,948	346,095	6,349	2,165,881	2,364,208	57,147

Step 3: Region x Race										
	Western MA					Eastern MA				
	Hispanic	White	Black	Asian	Missing	Hispanic	White	Black	Asian	Missing
Pop Margin	73,099	517,576	31,199	15,559	19,959	365,460	3,508,761	268,791	271,422	172,803
Samp Margin	73,790	516,701	31,214	15,763	19,924	368,838	3,502,133	268,866	274,936	172,464

Step 4: Region x Education								
	Western MA				Eastern MA			
	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing
Pop Margin	261,931	308,974	73,322	13,166	1,621,184	2,171,217	699,733	95,104
Samp Margin	258,109	309,640	76,480	13,163	1,593,655	2,170,624	728,103	94,855

Step 5: Age x Sex									
	18-34			35-49			50-64		
	Male	Female	Missing	Male	Female	Missing	Male	Female	Missing
Pop Margin	735,576	748,555	559	627,023	656,188	2,322	619,025	663,393	4,215
Samp Margin	741,993	746,158	565	629,810	651,312	2,334	622,351	659,073	4,241

	65+			Missing		
	Male	Female	Missing	Male	Female	Missing
Pop Margin	382,734	523,064	4,405	93,291	132,659	51,621
Samp Margin	386,076	521,394	4,447	92,895	130,534	51,445

Step 6: Age x Race										
	18-34					35-49				
	Hispanic	White	Black	Asian	Missing	Hispanic	White	Black	Asian	Missing
Pop Margin	191,126	1036829	107,158	115,183	16,553	128,386	955,074	84,164	86,332	23,330
Samp Margin	193,948	1,052,718	108,363	112,941	16,720	129,497	963,872	84,598	84,142	23,423

	50-64					65+				
	Hispanic	White	Black	Asian	Missing	Hispanic	White	Black	Asian	Missing
Pop Margin	71,661	1,068,889	64,014	48,619	42,280	29,090	798,678	32,274	25,108	42,311
Samp Margin	71,253	1,063,395	63,429	46,711	41,845	28,571	784,854	31,587	23,828	41,364

	Missing				
	Hispanic	White	Black	Asian	Missing
Pop Margin	18,519	158,594	13,650	18,520	68,288
Samp Margin	18,579	159,197	13,647	17,953	68,193

Step 7: Age x Education												
	18-34				35-49				50-64			
	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing
Pop Margin	475,372	842,425	151,694	7,167	409,127	623,515	237,912	7,339	451,124	599,124	219,520	26,941
Samp Margin	485,106	832,370	142,257	7,117	421,902	622,561	225,460	7,364	464,129	596,816	207,548	26,970

	64+				Missing			
	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing
Pop Margin	463,266	304,221	129,376	18,934	32,419	116,994	80,270	47,888
Samp Margin	479,992	305,194	123,185	19,089	33,821	118,179	76,958	48,612

Step 8: Sex x Race										
	Male					Female				
Obs	Hispanic	White	Black	Asian	Missing	Hispanic	White	Black	Asian	Missing
Pop Margin	209,066	1,911,590	139,876	134,351	87,356	226,554	2,088,908	158,245	150,948	74,614
Samp Margin	204,636	1,887,210	138,826	137,639	87,201	226,414	2,105,615	160,359	157,892	76,047

	Missing				
Obs	Hispanic	White	Black	Asian	Missing
Pop Margin	3,248	28,312	0	770	30,792
Samp Margin	3,186	28,010	0	790	30,803

Step 9: Sex x Education												
	Male				Female				Missing			
	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing
Pop Margin	942,303	1,128,816	365,545	34,188	930,069	1,337,251	403,124	40,212	4,584	16,750	7,918	33,870
Samp Margin	925,122	1,136,268	386,545	34,304	904,216	1,332,967	422,130	39,956	4,458	16,703	8,295	33,667

Step 10: Race x Education												
	Hispanic				White				Black			
	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing
Pop Margin	255,910	155,099	23,233	6,889	1,347,309	2,009,906	630,633	33,427	140,607	135,963	20,608	2,368
Samp Margin	258,811	155,365	22,426	6,905	1,365,253	2,017,304	609,921	33,571	141,991	135,996	19,862	2,370

	Asian				Missing			
	LE HS	College	Grad	Missing	LE HS	College	Grad	Missing
Pop Margin	90,622	115,150	78,626	5,517	20,458	60,644	51,593	60,067
Samp Margin	90,290	113,637	74,769	5,448	20,610	60,515	49,609	59,975

Step 6. Trimming of weights by setting the minimum weight to be the average weight/8, and the maximum weight to be average weight times 8.

The process of weighting to account for the sample design and response rates leads to different weights for different respondents. The weights ensure that if the expected value of response (such as the prevalence of problem gambling) varies between respondents with different weights, the overall weighted estimator is an unbiased estimate for the population mean. An additional consequence of varying weights is a decrease in the precision of the estimator. When there is a weak relationship between the variables used for weighting and the expected value of response, reducing the range of weights can increase the precision of the estimator, while not creating appreciable bias. Such a reduction in the range of weights is accomplished by reducing the maximum weight, and increasing the minimum weight. This process is called weight trimming. By trimming weights appropriately, a more accurate estimator may be constructed.

The distribution of weights for the 9,578 respondents is summarized in Table 31 for each step in the weight development. Notice the large differences that occur in the maximum weight when accounting for household size, or aligning the weights to the Massachusetts population (using the raked weights). The distribution of the weights generated by NORC based on post-stratification by region, age, race, and gender is given in the last row of Table 31 for comparison.

Table 31 Description of Weights Prior to Trimming

Weight	Min	Median	Mean	Max
WT1- Design	41	96	80	96
WT2- Screen	104	291	277	559
WT3- Complete	105	297	283	683
WT4- HH Size	105	548	548	2,731
WT5- Raked	37	354	548	11,775
NORC WT	111	410	547	4,477

We investigated the potential improvement in accuracy that could result as a consequence of trimming weights using the analysis variable for problem gambling, N_PPGM4, categorized as a dichotomous variable. This variable corresponds to an indicator variable used to estimate the prevalence of problem gambling.

Trimming Raked Weights

We describe the procedure for trimming raked weights next. Let $w_{\min}$ represent the minimum weight, w_{mean} represent the mean weight, and $w_{\max}$ represent the maximum weight. We define trimmed weight by setting the minimum and maximum weight to be a simple multiplier, m, times the average weight, w_{mean}. The initial trimmed weight is given by

$$w_{i,\mathrm{m}}^{0} = \begin{cases} w_{\max,m} \text{ if } w_i \geq w_{\max,m} \\ w_i \\ w_{\min,m} \text{ if } w_i \leq w_{\min,m} \end{cases}.$$

where $w_{\max,m} = m(w_{mean})$ and $w_{\min,m} = (w_{mean})/m$. By changing the minimum and maximum weight, the total weight is changed. In order to insure that the total weight is equal to the total population size, we adjust the initial trimmed weight by a factor $\frac{T}{T_m}$, where $T = \sum_{i=1}^{n} w_i$ represents the total raked weight prior to trimming, and

$T_m = \sum_{i=1}^{n} w_{i,\mathrm{m}}^0$ represents the total weight after trimming weights to a multiple of the mean weight. The final step in forming the trimmed weight is to multiply the initial trimmed weight by $\frac{T}{T_m}$, to form the trimmed weight

$$w_{i,m} = \left(\frac{T}{T_m}\right) w_{i,\mathrm{m}}^0 .$$

Determining the Extent of Trimming

We determined the multiplier used to trim weights by evaluating the accuracy of estimators for values of $m = 2,3,4,5,6,7,8,9$ for the variables defined as a) problem gambler; b) at risk gambler; c) tobacco user; and d) participant in extreme sports. An unbiased estimator of the variable was assumed to be the estimator without trimming. Using this process, we found that the most accurate estimator will occur when $m = 8$. By setting $m = 8$, the minimum and maximum raked weights are given by 68.4 and 4380.6, respectively. Adjusting these weights so that the total weight matches the MA total population, the minimum and maximum weights (corresponding to WT6) are given by 69.3 and 4,437.2, respectively. This is the final weight for the Baseline General Population Survey.

Appendix A4: Response Rate Considerations

As we noted in Chapter 2 of the report, a survey's response rate refers to the proportion of eligible individuals in the sample who actually complete a survey. The response rate is an important indicator of the potential for bias in surveys since it is possible that individuals who choose not to complete a survey may differ from those who do in meaningful ways. While the risk of obtaining a biased sample increases as a function of lower response rates, the sample will still be representative unless there are systematic differences in the characteristics of people opting versus not opting to do the survey. In fact, the scientific evidence on the relationship between response rates and sample bias has generally found this relationship to be surprisingly weak (Curtin, 2000; Holbrook, 2007; Keeter, Kennedy, Dimock, Best, & Craighill, 2006; Massey & Tourangeau, 2013; Molinari et al., 2011; Peytchev, 2013).

An argument can be made that there has been undue focus in survey research circles on overall response rates (which only create *potential* for sampling bias) and insufficient focus on factors *known to create* response bias. One of these important biasing factors is interest or lack of interest in the topic (Groves, Presser, & Dipko, 2004). For example, Williams and Volberg (2009) demonstrated that a door-to-door survey (with high response rates) that sought participation in a "gambling survey" created significantly more sampling bias than an identical telephone survey (with lower response rates) seeking participation in a "health and recreation survey." This is due to the fact that a "gambling survey" resulted in higher refusal rates for non-gamblers and higher cooperation rates for regular and heavy gamblers, whereas a "health and recreation survey" produced a much more representative sample of the population. Thus, it seems clear that a non-biasing solicitation (as was used in the present study) is probably an equally if not more important consideration than response rate when attempting to obtain a representative sample.

At the end of data collection for the Baseline Population Survey, each case was assigned a final disposition code, which identified the ending status of the case. The rest of this section provides detailed information about the final disposition of the Baseline Population Survey sample as well as calculations for the full range of AAPOR response rates for the survey.

SEIGMA AAPOR Response Rates and CASRO Rate

The Baseline Population Survey was a multi-mode survey, with web, mail, and telephone contacts. Typically NORC would use the code for "Refusal and break-off" (R) for a telephone survey. However, web and mail modes use "No Contact" rather than "Refusal" and NORC included "Partial interview" (P) and "R" in the same disposition category as "Eligible household, no member completes" (ER) for this survey. While refusal rates are meaningful for interviewer-administered surveys, including telephone or face-to-face, they are not so for self-administered modes such as web and mail which constitute the majority of the SEIGMA Baseline Population Survey.

The following table presents AAPOR category, description, and count for the entire sample of addresses drawn for the Baseline Population Survey.

Table 32 Counts by AAPOR disposition category

AAPOR Category	Description	AAPOR Dispositions Included*	Count	Note
I	Complete interview	1.1	9,581	
P	Partial interview	1.2	261	
R	Eligible household, refusal or break-off	2.1	0	SEIGMA considered all identified eligible households to be "Partial interview".
NC	Eligible household, non-contact	2.2	0	SEIGMA considered all identified eligible households to be "Partial interview".
O	Eligible household, other	2.3	0	SEIGMA considered all identified eligible households to be "Partial interview".
UH	Unknown if household/occupied HU	3.1	19,647	
UO	Household, eligibility undetermined	3.2	923	
e_1	Eligibility rate of unresolved cases		78.5%	We used the proportional allocation method for *e* estimation. Please see *e* calculation description below
e_2	Eligibility rate of unscreened cases		99.9%	We used the proportional allocation method for *e* estimation. Please see *e* calculation description below
Overall *e*	Estimated proportion of cases of unknown eligibility that are eligible. Calculated based on e_1 and e_2		79.4%	We used the proportional allocation method for *e* estimation. Please see *e* calculation description below
J**	Ineligible household	4.7	10	
NR**	Non-residential or otherwise out of scope	4.50, 4.60	2,946	

* Dispositions included in each AAPOR category from p. 40 of 2011 AAPOR Standard Definitions report. These dispositions are defined in Table 2 of that report.
** AAPOR does not include these categories on p. 40 of the 2011 AAPOR Standard Definitions report, but we include them here so as to have a complete accounting of all released cases. These are cases that are ineligible, either because they are not residential housing units or because there were no eligible members in the household.

The table on the following page presents all six response rates for the Baseline Population Survey using AAPOR-recommended calculations.

Table 33 SEIGMA AAPOR Response Rates

Response Rates	Formula	%
RR1	$\frac{I}{(I+P)+(R+NC+O)+(UH+UO)}$	31.5
RR2	$\frac{(I+P)}{(I+P)+(R+NC+O)+(UH+UO)}$	32.4
RR3	$\frac{I}{(I+P)+(R+NC+O)+e(UH+UO)}$	36.6
RR4	$\frac{(I+P)}{(I+P)+(R+NC+O)+e(UH+UO)}$	37.6
RR5**	$\frac{I}{(I+P)+(R+NC+O)}$	97.3
RR6**	$\frac{(I+P)}{(I+P)+(R+NC+O)}$	100.0

**SEIGMA targeted households with adult age 18 and above. RR5 and RR6 assume that everyone not screened and could not be identified is not eligible, which is not a realistic assumption. Thus, it is not appropriate to use RR5 and RR6.

By way of comparison, the RR4 response rate for the 2013 BRFSS survey in Massachusetts—a landline and cell phone survey—was 39.9% compared to an RR4 response rate of 37.6% for the SEIGMA survey.

e Calculation, APPOR RR3 and CASRO Rate

The Baseline Population Survey was a three-stage survey (resolution, screening, interviewing stages) targeting all households in Massachusetts with residents aged 18 and above. Therefore, instead of setting a single value of *e* for all units whose eligibility status was not determined, a value of *e* was set separately for units that were not resolved as to their household status (e_1) – i.e., units where it was not determined whether or not the sample unit was a household as opposed to being a vacant housing unit, a business, etc. – and units resolved as households but whose eligibility was not determined (e_2) – i.e., sample units known to be households but for which it was not determined whether or not an adult lived in the household.

When setting *e* separately in this way, AAPOR Response Rate 3 is written as:

$$RR3^{*} = \frac{I}{(I+P)+(R+NC+O)+e_1e_2UH+e_2UO}$$

As is common, the proportional allocation method was used when setting e_1 and e_2. That is, the rate of households among the sample units whose household status was undetermined (e_1=78.5%) was assumed to be equal to the rate of households among the sample units whose household status was determined, and the eligibility rate among known households whose eligibility status was undetermined (e_2=99.9%) was assumed to be equal to the eligibility rate among the known households whose eligibility status was determined:

$$e_1 = \frac{I+P+R+NC+O+UO+J}{I+P+R+NC+O+UO+J+NR}$$

$$e_2 = \frac{I+P+R+NC+O}{I+P+R+NC+O+J}$$

The use of multiple *e* s is consistent with an example presented in the 2015 AAPOR Response Rate standards.

Under the proportional allocation assumptions for e_1 and e_2, AAPOR Response Rate 3* is the same as the CASRO response rate for a three-stage survey, and AAPOR Response Rate 3* can be written as the product of the resolution rate, the screener completion rate, and the interview completion rate, where the resolution rate is the proportion of sample units that could be resolved as either a household or a non-household, the screener completion rate is the proportion of resolved households that were screened for household eligibility, and the interview completion rate is the proportion of identified eligible households that completed the interview:

$$Resolution\ Rate = \frac{I + P + R + NC + O + UO + J + NR}{I + P + R + NC + O + UO + J + NR + UH}$$

$$Screener\ Completion\ Rate = \frac{I + P + R + NC + O + J}{I + P + R + NC + O + J + UO}$$

$$Interview\ Completion\ Rate = \frac{I}{I + P + R + NC + O}$$

Appendix A5: Item Response Rate by Data Collection Mode

Table 34 Item response rate by data collection mode

	Percent complete		
	WEB	SAQ	phone
d2_R RECODED: Are you male or female?	99.2	98.4	100.0
c1_RBC RECODED AND BACKCODED: Which of the following is your preferred recreational activity? Would you say…?	99.8	98.5	99.0
c2_R RECODED: Do you enjoy participating in extreme sports such as hang gliding or sky diving?	99.9	99.5	99.6
C3_R RECODED: Over the past 12 months, would you say that in general your health has been…?	99.9	99.8	100.0
C4_R RECODED: In the past 12 months, how would you rate your overall level of stress? Would you say…	99.6	99.7	99.4
C5_R RECODED: In the past 12 months, how would you rate your overall level of happiness? Would you say…	99.6	99.6	99.7
C6A_R RECODED: Have you smoked at least 100 cigarettes in your entire life?	99.8	99.3	99.4
C6B_R RECODED: Would you say you now smoke cigarettes…	99.8	97.4	99.4
C6C_R RECODED: Do you currently smoke cigars, pipe tobacco, or hookah tobacco (shisha), or use dipping tobacco (including snus), chewing tobacco, or snuff…?	99.6	99.0	100.0
C6D_R RECODED: During the past 30 days, how many days would you estimate you have used any form of tobacco?	98.7	92.1	100.0
C7A_R RECODED: Have you used alcohol in the past 12 months?	99.7	99.6	100.0
C7C_R RECODED: One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor. During the past 30 days, on the days when you drank, about how many drinks did y	96.0	97.9	91.4
C8_R RECODED: In the past 12 months have you used any marijuana, hallucinogens (such as LSD, mushrooms, or PCP), cocaine, heroin or opium, or any other drugs not intended for medical use?	99.6	98.8	99.9
C9A_R RECODED: Have you had any problems with drugs or alcohol in the past 12 months? By this we mean difficulties in controlling their use that have led to negative consequences for you or other peop	99.7	98.6	100.0
C9B_R RECODED: During the past 12 months, have you sought help for your use of alcohol or drugs?	99.7	98.5	100.0
C10A_R RECODED: Have you had problems with other behavior in the past 12 months such as overeating, sex or pornography, shopping, exercise, Internet chat lines, or other things?	99.5	98.6	99.9
C11A_R RECODED: In the past 30 days, have you had any serious problems with depression, anxiety or other mental health problems?	99.7	98.5	99.7
C11B_R RECODED: How about in the last 12 months?	99.2	90.4	99.7
C11D_R RECODED: During the past 12 months, did you ever seriously consider attempting suicide?	99.6	98.9	99.7
C11E_R RECODED: During the past 12 months, did you actually attempt suicide?	99.6	98.9	99.7

	Percent complete		
	WEB	SAQ	phone
C12_R RECODED: Do you now have any health problem that requires you to use special equipment, such as a cane, a wheelchair, a special bed, or a special telephone?	99.6	98.6	100.0
C13_R RECODED: How would you describe your childhood? Would you say…	99.7	98.8	99.4
GA1_R RECODED: Which best describes your belief about the benefit or harm that gambling has for society? Would you say…	99.3	96.6	91.7
GA2_R RECODED: Do you believe that gambling is morally wrong?	99.4	97.6	98.9
GA3A_R RECODED: Which of the following best describes your opinion about legalized gambling? Would you say…	99.3	96.4	93.0
GA4_R RECODED: Which of the following best describes your opinion about gambling opportunities in Massachusetts? Would you say…	97.7	96.1	90.3
GA5_R RECODED: There may be 3 new casinos and a slot parlor built in Massachusetts in the next few years. What sort of overall impact do you believe these may have? Would you say…	99.4	98.5	96.4
GA6A_RBC RECODED AND BACKCODED: What do you believe will be the single most positive impact for Massachusetts? Would you say…	99.0	98.3	95.4
GA6B_RBC RECODED AND BACKCODED: What do you believe will be the single most negative impact for Massachusetts? Would you say…	99.0	98.2	95.0
GA7_R RECODED: What sort of overall impact do you believe a new casino or slot parlor would have for your own community? Would you say…	99.2	98.7	95.9
GY1A_R RECODED: In the past 12 months, how often have you purchased lottery tickets such as Megabucks, Powerball, Lucky for Life, or Mass Cash? Would you say…	99.8	99.6	99.9
GY2A_R RECODED: In the past 12 months, how often have you purchased instant tickets or pull tabs? Would you say…	99.4	99.1	99.4
GY2C_R RECODED: In the past 12 months, how often have you purchased raffle tickets? Would you say…	99.3	98.7	99.9
GY3A_R RECODED: In the past 12 months, how often have you purchased daily lottery games such as Keno or Jackpot Poker? Would you say…	99.5	98.8	100.0
GY4A_R RECODED: In the past 12 months, how often have you bet money on sporting events (this includes sports pools)? Would you say…	99.5	99.5	100.0
GY5A_R RECODED: In the past 12 months, how often have you gone to a bingo hall to gamble? Would you say…	99.6	99.2	99.9
GY8A_R RECODED: In the past 12 months, how many times have you gambled at a casino, racino, or slots parlor outside of Massachusetts?	99.6	88.7	100.0
GY9A_R RECODED: In the past 12 months, how often have you bet on a horse race at either a horse race track or an off-track site? Would you say…	99.7	99.5	99.6
GY10A_R RECODED: In the past 12 months, how often have you gambled or bet money against other people on things such as card games, golf, pool, darts, bowling, video games, board games, or poker outsid	99.5	98.6	99.6
GY11A_R RECODED: In the past 12 months, how often did you purchase high risk stocks, options or futures or day trade on the stock market? Would you say…	99.4	98.4	99.0
GY12A_R RECODED: In the past 12 months, have you gambled online?	99.3	98.3	99.4

	Percent complete		
	WEB	SAQ	phone
GM1_RBC- RECODED and BACKCODED:What would you say is the main reason that you gamble?	93.0	86.0	94.9
GR1_R RECODED: How important is gambling to you as a recreational activity? Would you say…	99.4	98.3	98.7
GY2A_R RECODED: In the past 12 months, how often have you purchased instant tickets or pull tabs? Would you say…	99.4	99.1	99.4
PA1_R RECODED: In the past 12 months have you seen or heard any media campaigns to prevent problem gambling in Massachusetts?	98.7	98.0	97.6
PA2A_R RECODED: In the past 12 months have you been aware of any programs to prevent problem gambling [other than media campaigns] offered at your school, your place of work, in your community or else	98.5	98.6	98.3
PA2B_R RECODED: Did you participate in any of the problem gambling prevention programs that you heard of in the past 12 months?	99.5	100.0	97.4
PA3_R RECODED: Did any of these media campaigns or programs cause you to alter your own gambling behavior?	99.0	99.2	97.0
GPO1_R RECODED: What portion of your close friends and family members are regular gamblers? Would you say…	99.3	98.6	96.7
GPO2_R RECODED: During the last 12 months, has there been a person in your life that you consider gambles too much?	99.2	98.9	97.4
GPO3_RBC- RECODED and BACKCODED:Please specify this persons relationship to you.	99.1	98.8	96.4
GP1_R RECODED: Thinking about the past 12 months, have you bet more than you could really afford to lose? Would you say…	99.4	99.4	99.0
GP2_R RECODED: Thinking about the past 12 months, have you felt guilty about the way you gamble or what happens when you gamble? Would you say…	99.3	99.2	98.3
GP3_R RECODED: In the past 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement? Would you say…	99.1	99.2	98.3
GP4_R RECODED: In the past 12 months, when you gambled, did you go back another day to try to win back the money you lost? Would you say…	99.0	99.0	98.4
GP5A_R RECODED: In the past 12 months, have you borrowed money or sold anything to get money to gamble? Would you say…	99.3	99.2	98.4
GP5B_R RECODED: In the past 12 months, about how much money have you borrowed or obtained from selling possessions in order to gamble?	99.6	99.9	98.3
GP6A_R RECODED: In the past 12 months, has your gambling caused any financial problems for you or your household? Would you say…	99.2	98.9	98.3
GP6B_R RECODED: In the past 12 months, have you filed for bankruptcy because of gambling?	99.6	99.9	98.3
GP7A_R RECODED: In the past 12 months, has your gambling caused you any health problems, including stress or anxiety? Would you say…	99.2	99.1	98.3
GP7B_R RECODED: In the past 12 months have these health problems caused you to seek medical or psychological help?	99.6	99.9	98.3
GP8_R RECODED: In the past 12 months, have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true? Would you say…	99.3	99.1	98.3

	Percent complete		
	WEB	SAQ	phone
GP9_R RECODED: In the past 12 months, have you felt that you might have a problem with gambling? Would you say…	99.3	99.1	98.3
GP10A_R RECODED: Has your involvement in gambling caused significant mental stress in the form of guilt, anxiety, or depression for you or someone close to you in the past 12 months?	99.2	99.2	98.1
GP10B_R RECODED: In the past 12 months, have you thought of committing suicide because of gambling?	99.6	99.7	98.1
GP10C_R RECODED: In the past 12 months, have you attempted suicide because of gambling?	99.6	99.9	98.1
GP10D_R RECODED: Would you like to know about the free gambling and mental health treatment services in your local area?	99.6	99.8	98.1
GP11A_R RECODED: Has your involvement in gambling caused significant problems in your relationship with your spouse/partner or important friends or family in the past 12 months?	99.1	99.0	98.1
GP11B_R RECODED: In the past 12 months, has your involvement in gambling caused an instance of domestic violence in your household?	99.6	99.9	98.3
GP11C_R RECODED: In the past 12 months, has your involvement in gambling resulted in separation or divorce?	99.6	99.9	98.3
GP12A_R RECODED: In the past 12 months, has your involvement in gambling caused you to repeatedly neglect your children or family?	99.0	99.0	98.1
GP12B_R RECODED: In the past 12 months, has child welfare services become involved because of your gambling?	99.6	99.9	98.1
GP13A_R RECODED: Has your involvement in gambling caused significant work or school problems for you or someone close to you in the past 12 months or caused you to miss a significant amount of time of	99.0	98.9	98.1
GP13B_R RECODED: In the past 12 months, about how many work or school days have you lost due to gambling?	99.6	99.8	98.1
GP13C_R RECODED: In the past 12 months, have you lost your job or had to quit school due to gambling?	99.6	99.9	98.1
GP13D_R RECODED: In the past 12 months, did anyone in this household receive any public assistance (food stamps, (TANF)) or any other welfare payments from the state or local welfare office as a resul	99.6	99.9	98.1
GP13E_R RECODED: Roughly how much money did you receive from public assistance in the past 12 months?	99.6	99.9	98.1
GP14A_R RECODED: In the past 12 months, has your involvement in gambling caused you or someone close to you to write bad checks, take money that didnt belong to you or commit other illegal acts to sup	98.9	99.1	98.1
GP14B_R RECODED: In the past 12 months, how much money have you illegally obtained in order to gamble?	99.6	99.9	98.1
GP14C_R RECODED: In the past 12 months, has your gambling been a factor in your committing a crime for which you have been arrested?	99.6	99.9	98.1
GP14D_R RECODED: Were you convicted for this crime?	99.6	99.9	98.1
GP14G_R RECODED: Were you incarcerated for this crime?	99.6	99.9	98.1
GP14H_R RECODED: For how many days were you incarcerated?	99.6	99.9	98.1

	Percent complete		
	WEB	SAQ	phone
GP15_R RECODED: In the past 12 months, have you often gambled longer, with more money or more frequently than you intended to?	99.1	98.2	98.1
GP16A_R RECODED: In the past 12 months, have you made attempts to either cut down, control or stop gambling?	98.8	97.6	97.7
GP16B_R RECODED: Were you successful in these attempts to cut down, control or stop gambling?	99.6	99.7	97.9
GP17_R RECODED: In the past 12 months, is there anyone else who would say you had difficulty controlling your gambling, regardless of whether you agreed with them or not?	98.9	98.3	98.1
GP18_R RECODED: In the past 12 months, would you say you have been preoccupied with gambling?	99.1	98.5	98.0
GP19_R RECODED: In the past 12 months, when you did try cutting down or stopping did you find you were very restless or irritable or that you had strong cravings for it?	98.5	97.5	97.3
GP20_R RECODED: In the past 12 months, did you find you needed to gamble with larger and larger amounts of money to achieve the same level of excitement?	98.9	98.1	97.9
GP21_R RECODED: Are there particular types of gambling that have contributed to your problems more than others?	99.2	99.0	98.1
GP23A_R RECODED: Have you wanted help for gambling problems in the past 12 months?	99.2	99.0	98.1
GP23B_R RECODED: Have you sought help for gambling problems in the past 12 months?	99.2	99.0	98.1
GP23D_R RECODED: How helpful was this? Would you say…	99.2	99.0	98.1
GP23E_R RECODED: Have you excluded yourself from any casino or slots parlor in the past 12 months?	99.2	98.9	98.1
GP23F_R RECODED: In which state? (CATI)	100.0	99.9	100.0
GP24_R RECODED: Have you had problems with gambling in your lifetime prior to the past 12 months?	99.2	99.0	98.1
Canadian Problem Gambling Index	99.2	99.0	98.1
D4_R RECODED: At present are you…?	97.3	97.9	96.4
D5_R RECODED: How many children under 18 years old live in your household?	94.0	94.9	97.1
D6_R RECODED: What is the highest degree or level of school you have completed?	98.5	98.0	96.6
D8_RBC RECODED and BACKCODED: What type of healthcare coverage do you have?	95.7	97.2	93.9
D9_RBC RECODED AND BACKCODED: Do you own the place where you currently live, pay rent or something else?	97.0	97.7	96.1
D12_R RECODED: Were you born in the United States?	98.1	98.1	96.3
D12A_R RECODED: Do you live in Massachusetts for 6 or more months out of the year?	98.2	96.4	96.1
D13_R RECODED: Are you Hispanic or Latino?	97.4	96.8	95.7
Age (based on 2014-year of birth)	92.8	96.4	97.6
Alcohol use (3 categories)	99.7	99.6	100.0
Current tobacco use	99.5	96.9	99.4
Education (6 categories)	98.5	98.0	96.6

	Percent complete		
	WEB	SAQ	phone
Employment (6 categories)	97.5	98.4	96.9
Household income (6 categories)	80.1	90.2	81.4
Marital status (5 categories)	97.3	97.9	96.4
Race/ethnicity (6 categories)	95.6	97.6	94.9

Appendix B: Baseline Survey Questionnaire

Massachusetts Survey of Health and Recreation

UMASS AMHERST

Please have the adult in your household (18 years or older) who had the most recent birthday complete this survey. We do not mean the oldest person. We mean the person who had a birthday last.

Instructions for Completing the Booklet

This booklet contains several types of questions. Each question should be answered only about yourself, not anyone else in your household.

- **For some questions, you answer the question by marking a box, like this:**
  1 ☒ Yes
  2 ☐ No
- **For some questions, you answer the question by filling in one number per box, like this:**
  0 9 *Number of Days*
- **You will sometimes be instructed to skip one or more questions. In this example, if your choice is 'No', you skip to question 10; otherwise, you continue to the next question.**
  1 ☐ Yes
  2 ☒ No → **GO TO 10**

Definitions

For the purposes of this survey, please refer to the definitions below for the following terms.

- **"Non-medical" drug use means using it to get high or experience pleasurable effects, see what the effects are like, or use with friends.**
- **"Serious" means something that either you or someone else would say is considerable, important, or major, either because of its frequency or significance.**
- **A high risk stock is a stock from a company that has a real risk of going out of business and/or having their stock price double or triple in value in the next year.**

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 a court order or 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 to 15 minutes.

If you have questions about the Federal Certificate of Confidentiality, please visit: http://grants.nih.gov/grants/policy/coc/faqs.htm#187

Health Section

We would like to start by asking you questions about your health.

1. Which of the following is your preferred recreational activity? Would you say…

1 ☐ Watching TV
2 ☐ Walking or hiking
3 ☐ Gardening
4 ☐ Reading
5 ☐ Socializing with friends or family
6 ☐ Traveling
7 ☐ Gambling
91 ☐ Other

2. Do you enjoy participating in extreme sports such as hang gliding or sky diving?

1 ☐ Yes
2 ☐ No

3. Over the past 12 months, would you say that in general your health has been…?

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

4. In the past 12 months, how would you rate your overall level of stress? Would you say…?

1 ☐ Very high
2 ☐ High
3 ☐ Moderate
4 ☐ Low
5 ☐ Very low

5. In the past 12 months, how would you rate your overall level of happiness? Would you say…?

1 ☐ Very high
2 ☐ High
3 ☐ Moderate
4 ☐ Low
5 ☐ Very low

6. Have you smoked at least 100 cigarettes in your entire life?

1 ☐ Yes
2 ☐ No → **GO TO 8**

7. Would you say you now smoke cigarettes…?

1 ☐ Every day
2 ☐ Some days
3 ☐ Not at all

8. Do you currently smoke cigars, pipe tobacco, or hookah tobacco (shisha); or use dipping tobacco (including snus), chewing tobacco, or snuff…

1 ☐ Every day
2 ☐ Some days
3 ☐ Not at all

9. During the past 30 days, how many days would you estimate you have used any form of tobacco?

☐☐ *Days*

10. Have you used alcohol in the past 12 months?

1 ☐ Yes
2 ☐ No → **GO TO 14 ON PAGE 2**

11. During the past 30 days, how many days per week or per month did you have at least one drink of any alcohol beverage such as beer, wine, a malt beverage or liquor? *Please enter the number of days per week or days per month.*

1 ☐ *Days per Week*

or

2 ☐☐ *Days per Month*

12. One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor. During the past 30 days, on the days when you drank, about how many drinks did you drink on average?

☐☐ *Number of Drinks*

13. **Considering all types of alcoholic beverages, how many times during the past 30 days did you have:**

If you are male: 5 or more drinks on an occasion?

☐☐ *Number of Times*

If you are female: 4 or more drinks on an occasion?

☐☐ *Number of Times*

14. **In the past 12 months have you used any marijuana, hallucinogens (such as LSD, mushrooms, or PCP), cocaine, heroin or opium, or any other drugs not intended for medical use?** *If you are not sure what is considered non-medical drug use, please refer to the definitions on the inside cover.*

1 ☐ Yes
2 ☐ No

15. **Have you had any problems with drugs or alcohol in the past 12 months? By this we mean difficulties in controlling their use that have led to negative consequences for you or other people.**

1 ☐ Yes
2 ☐ No → **GO TO 17**

16. **During the past 12 months, have you sought help for your use of alcohol or drugs?**

1 ☐ Yes
2 ☐ No

17. **Have you had any problems with other behavior in the past 12 months such as overeating, sex or pornography, shopping, exercise, Internet chat lines, or other things? What we mean is difficulties controlling the behavior which has led to significant negative consequences for you or other people.**

1 ☐ Yes
2 ☐ No → **GO TO 19**

18. **Which specific activities have you had problems with? Have you had problems with…?** *Check all that apply.*

1 ☐ Overeating
2 ☐ Sex or pornography
3 ☐ Exercise
4 ☐ Shopping
5 ☐ Internet chat lines
6 ☐ Video or internet gaming
91 ☐ Other

19. **In the past 30 days, have you had any serious problems with depression, anxiety or other mental health problems?** *If you are not sure what is considered serious, please refer to the definitions on the inside cover.*

1 ☐ Yes → **GO TO 21**
2 ☐ No

20. **How about in the last 12 months?**

1 ☐ Yes
2 ☐ No → **GO TO 24 ON PAGE 3**

21. **Which problems have you experienced?**

22. **During the past 12 months, did you ever seriously consider attempting suicide?**

1 ☐ Yes
2 ☐ No → **GO TO 24 ON PAGE 3**

23. **During the past 12 months, did you actually attempt suicide?**

1 ☐ Yes
2 ☐ No

If you would like information regarding treatment resources, please see page 13 for contact information.

24. Do you now have any health problem that requires you to use special equipment, such as a cane, a wheelchair, a special bed, or a special telephone?

1 ☐ Yes
2 ☐ No

25. How would you describe your childhood? Would you say…?

1 ☐ Very happy
2 ☐ Happy
3 ☐ Neither happy nor unhappy
4 ☐ Unhappy
5 ☐ Very unhappy

Recreation Questions

The primary recreational activity we have chosen to ask you about is gambling.

We define gambling as betting money or material goods on an event with an uncertain outcome in the hopes of winning additional money or material goods. It includes things such as lottery tickets, scratch tickets, bingo, betting against a friend on a game of skill or chance, betting on horse racing or sports, investing in high risk stocks, etc.

26. Which best describes your belief about the benefit or harm that gambling has for society? Would you say...?

1 ☐ The harm far outweighs the benefits
2 ☐ The harm somewhat outweighs the benefits
3 ☐ The benefits are about equal to the harm
4 ☐ The benefits somewhat outweigh the harm
5 ☐ The benefits far outweigh the harm

27. Do you believe that gambling is morally wrong?

1 ☐ Yes
2 ☐ No

28. Which of the following best describes your opinion about *legalized* gambling? Would you say…?

1 ☐ All types of gambling should be legal
→ **GO TO 30**
2 ☐ Some types of gambling should be legal and some should be illegal
3 ☐ All types of gambling should be illegal
→ **GO TO 30**

29. Which types of gambling do you believe should be illegal?

30. Which of the following best describes your opinion about gambling opportunities in Massachusetts? Would you say…?

1 ☐ Gambling is too widely available
2 ☐ Gambling is not available enough
3 ☐ The current availability of gambling is fine

31. There may be 3 new casinos and a slot parlor built in Massachusetts in the next few years. What sort of overall impact do you believe these may have? Would you say…?

1 ☐ Very beneficial
2 ☐ Somewhat beneficial
3 ☐ Neither beneficial nor harmful
4 ☐ Somewhat harmful
5 ☐ Very harmful

32. What do you believe will be the single most positive impact for Massachusetts? Would you say…?

1 ☐ Employment
2 ☐ Benefit to other local businesses
3 ☐ Increased government revenue
4 ☐ Retaining money that was leaving Massachusetts
5 ☐ Increased local leisure options (i.e., the ability to gamble locally)
6 ☐ No positive impacts
91 ☐ Other

33. What do you believe will be the single most negative impact for Massachusetts? Would you say…?

1 ☐ Increased gambling addiction (and associated consequences: bankruptcy, suicide, divorce, etc.)
2 ☐ Negative impact on other local businesses
3 ☐ Increased crime
4 ☐ Increased traffic congestion
5 ☐ No negative impacts
91 ☐ Other

34. What sort of overall impact do you believe a new casino or slot parlor would have for your own community? Would you say…?

1 ☐ Very beneficial
2 ☐ Somewhat beneficial
3 ☐ Neither beneficial nor harmful
4 ☐ Somewhat harmful
5 ☐ Very harmful

Past Gambling Behaviors

Now, we would like you to think about different times that you have gambled in the past year.

35. In the past 12 months, how often have you purchased *lottery tickets* such as Megabucks, Powerball, Lucky for Life, or Mass Cash? Would you say…?

1 ☐ 4 or more times a week
2 ☐ 2-3 times a week
3 ☐ Once a week
4 ☐ 2-3 times a month
5 ☐ Once a month
6 ☐ Less than once a month
7 ☐ Not at all → **GO TO 37**

36. Roughly how much money do you spend on lottery tickets in a typical month? Spend means how much you are ahead (+$) or behind (–$), or your net win or loss in an average month in the past 12 months.

– $ ☐ , ☐☐☐ , ☐☐☐

37. In the past 12 months, how often have you purchased *instant tickets or pull tabs?* Would you say…?

1 ☐ 4 or more times a week
2 ☐ 2-3 times a week
3 ☐ Once a week
4 ☐ 2-3 times a month
5 ☐ Once a month
6 ☐ Less than once a month
7 ☐ Not at all → **GO TO 39**

38. Roughly how much money do you spend on instant tickets or pull tabs in a typical month?

– $ ☐ , ☐☐☐ , ☐☐☐

39. In the past 12 months, how often have you purchased *raffle tickets?* Would you say…?

1 ☐ 4 or more times a week
2 ☐ 2-3 times a week
3 ☐ Once a week
4 ☐ 2-3 times a month
5 ☐ Once a month
6 ☐ Less than once a month
7 ☐ Not at all → **GO TO 41**

40. Roughly how much money do you spend on raffle tickets in a typical month?

– $ ☐ , ☐☐☐ , ☐☐☐

41. In the past 12 months, how often have you purchased *daily lottery games* such as *Keno or Jackpot Poker*? Would you say…?

1 ☐ 4 or more times a week
2 ☐ 2-3 times a week
3 ☐ Once a week
4 ☐ 2-3 times a month
5 ☐ Once a month
6 ☐ Less than once a month
7 ☐ Not at all → **GO TO 43 ON PAGE 5**

42. Roughly how much money do you spend on daily lottery games such as Keno or Jackpot Poker in a typical month?

– $ ☐ , ☐☐☐ , ☐☐☐

43. In the past 12 months, how often have you bet money on *sporting events* (this includes sports pools)? Would you say…?

1 ☐ 4 or more times a week
2 ☐ 2-3 times a week
3 ☐ Once a week
4 ☐ 2-3 times a month
5 ☐ Once a month
6 ☐ Less than once a month
7 ☐ Not at all → **GO TO 45**

44. Roughly how much money do you spend on sports betting in a typical month?

– $ ☐, ☐☐☐, ☐☐☐

45. In the past 12 months, how often have you gone to a *bingo hall* to gamble? Would you say…?

1 ☐ 4 or more times a week
2 ☐ 2-3 times a week
3 ☐ Once a week
4 ☐ 2-3 times a month
5 ☐ Once a month
6 ☐ Less than once a month
7 ☐ Not at all → **GO TO 47**

46. Roughly how much money do you spend at bingo halls in a typical month?

– $ ☐, ☐☐☐, ☐☐☐

47. In the past 12 months, how many times have you gambled at a *casino, racino, or slots parlor outside of Massachusetts?*

☐☐☐ *Times* → **IF ZERO, GO TO 52**

48. Roughly how much money do you spend on gambling per visit in out of state casinos, racinos, slots parlors, and slots at racetracks?

– $ ☐, ☐☐☐, ☐☐☐

49. Roughly how much money do you spend on nongambling activities (such as food, travel, lodging, entertainment) per visit in out-of-state casinos, racinos, slots parlors, and slots at racetracks?

$ ☐☐, ☐☐☐

50. Which state do you most often go to for this gambling?

51. Which specific casino, racino, or slots parlor do you most often go to?

52. In the past 12 months, how often have you bet on a *horse race* at either a horse race track or an off-track site? Would you say…?

1 ☐ 4 or more times a week
2 ☐ 2-3 times a week
3 ☐ Once a week
4 ☐ 2-3 times a month
5 ☐ Once a month
6 ☐ Less than once a month
7 ☐ Not at all → **GO TO 55 ON PAGE 6**

53. Roughly how much money do you spend on horse racing in a typical month?

– $ ☐, ☐☐☐, ☐☐☐

54. Where do you most often go to bet on horse racing?

55. In the past 12 months, how often have you gambled or *bet money against other people* on things such as card games; golf, pool, darts, bowling; video games; board games, or poker outside of a casino? Would you say…?
Poker played in a casino and games played on the internet should NOT be included.

1 ☐ 4 or more times a week
2 ☐ 2-3 times a week
3 ☐ Once a week
4 ☐ 2-3 times a month
5 ☐ Once a month
6 ☐ Less than once a month
7 ☐ Not at all → **GO TO 57**

56. Roughly how much money do you spend gambling or betting money against other people in a typical month?

– $ ☐, ☐☐☐, ☐☐☐

57. In the past 12 months, how often did you purchase *high risk stocks, options or futures or day trade* on the stock market? Would you say…? *If you are not sure what a high risk stock is, please refer to the definitions on the inside cover.*

1 ☐ 4 or more times a week
2 ☐ 2-3 times a week
3 ☐ Once a week
4 ☐ 2-3 times a month
5 ☐ Once a month
6 ☐ Less than once a month
7 ☐ Not at all → **GO TO 59**

58. What do you estimate is your net loss or gain in a typical month from high risk stocks, options, futures, or day trading?

– $ ☐, ☐☐☐, ☐☐☐

59. In the past 12 months, have you *gambled online?* This would include things such as playing poker, buying lottery tickets, betting on sports, bingo, slots or casino table games for money or playing interactive games for money?

1 ☐ Yes
2 ☐ No → **GO TO 62**

60. Roughly how much money do you spend gambling online in a typical month?

– $ ☐, ☐☐☐, ☐☐☐

61. What is the main type of online gambling you engage in?

62. What would you say is the main reason that you gamble? Would you say…?

1 ☐ For excitement/entertainment
2 ☐ To win money
3 ☐ To escape or distract yourself
4 ☐ To socialize with family or friends
5 ☐ To support worthy causes
6 ☐ Because it makes you feel good about yourself
91 ☐ Other

63. How important is gambling to you as a recreational activity? Would you say…?

1 ☐ Very important
2 ☐ Somewhat important
3 ☐ Not very important
4 ☐ Not at all important

64. Has gambling replaced other recreational activities for you in the past 5 years?

1 ☐ Yes
2 ☐ No → **GO TO 66 ON PAGE 7**

65. Which recreational activities has gambling replaced?

Prevention Awareness

We would now like you to think about what you have heard about gambling prevention either from the media or from others.

66. In the past 12 months have you seen or heard any media campaigns to prevent problem gambling in Massachusetts?

1 ☐ Yes
2 ☐ No

67. In the past 12 months have you been aware of any programs to prevent problem gambling [other than media campaigns] offered at your school, your place of work, in your community or elsewhere?

1 ☐ Yes
2 ☐ No

68. Did you participate in any of the problem gambling prevention programs that you heard of in the past 12 months?

1 ☐ Yes
2 ☐ No

69. Did any of these media campaigns or programs cause you to alter your own gambling behavior?

1 ☐ Yes
2 ☐ No

70. What portion of your close friends and family members are regular gamblers? Would you say…?

1 ☐ None of them
2 ☐ Some of them
3 ☐ Most of them
4 ☐ All of them

71. During the last 12 months, has there been a person in your life that you consider gambles too much?

1 ☐ Yes
2 ☐ No → **GO TO 75**

72. What is this person's relationship to you?

1 ☐ Spouse or Partner
2 ☐ Parent or Step Parent
3 ☐ Child or Step Child
4 ☐ Other person in your household
5 ☐ Other family member not living in your household
6 ☐ Ex-partner
7 ☐ Work colleague
8 ☐ Friend
9 ☐ Neighbor
91 ☐ Someone else

73. In what ways has this person's gambling affected you during the last 12 months?

74. Overall, on a scale from 1 to 10 how much has this person's gambling affected you negatively during the last 12 months?

No Effect									Major Effect
1	2	3	4	5	6	7	8	9	10
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Gambling Outcomes

When answering the questions throughout the remainder of the survey, please think about the past 12 months.

75. Thinking about the past 12 months, have you bet more than you could really afford to lose? Would you say...?

1 ☐ Never
2 ☐ Sometimes
3 ☐ Most of the time
4 ☐ Almost always

76. Thinking about the past 12 months, have you felt guilty about the way you gamble or what happens when you gamble? Would you say…?

1 ☐ Never
2 ☐ Sometimes
3 ☐ Most of the time
4 ☐ Almost always

77. In the past 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement? Would you say…?

1 ☐ Never
2 ☐ Sometimes
3 ☐ Most of the time
4 ☐ Almost always

78. In the past 12 months, when you gambled, did you go back another day to try to win back the money you lost? Would you say…?

1 ☐ Never
2 ☐ Sometimes
3 ☐ Most of the time
4 ☐ Almost always

79. In the past 12 months, have you borrowed money or sold anything to get money to gamble? Would you say…?

1 ☐ Never → **GO TO 81**
2 ☐ Sometimes
3 ☐ Most of the time
4 ☐ Almost always

80. In the past 12 months, about how much money have you borrowed or obtained from selling possessions in order to gamble?

$ ☐☐,☐☐☐

81. In the past 12 months, has your gambling caused any financial problems for you or your household? Would you say…?

1 ☐ Never → **GO TO 83**
2 ☐ Sometimes
3 ☐ Most of the time
4 ☐ Almost always

82. In the past 12 months, have you filed for bankruptcy because of gambling?

1 ☐ Yes
2 ☐ No

83. In the past 12 months, has your gambling caused you any health problems, including stress or anxiety? Would you say…?

1 ☐ Never → **GO TO 85**
2 ☐ Sometimes
3 ☐ Most of the time
4 ☐ Almost always

84. In the past 12 months have these health problems caused you to seek medical or psychological help?

1 ☐ Yes
2 ☐ No

85. In the past 12 months, have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true? Would you say...?

1 ☐ Never
2 ☐ Sometimes
3 ☐ Most of the time
4 ☐ Almost always

86. In the past 12 months, have you felt that you might have a problem with gambling? Would you say...?

1 ☐ Never
2 ☐ Sometimes
3 ☐ Most of the time
4 ☐ Almost always

87. Has your involvement in gambling caused significant mental stress in the form of guilt, anxiety, or depression for you or someone close to you in the past 12 months?

1 ☐ Yes
2 ☐ No → **GO TO 90 ON PAGE 9**

88. In the past 12 months, have you thought of committing suicide because of gambling?

1 ☐ Yes
2 ☐ No → **GO TO 90 ON PAGE 9**

89. In the past 12 months, have you attempted suicide because of gambling?

1 ☐ Yes
2 ☐ No

If you would like information regarding treatment resources, please see page 13 for contact information.

90. Has your involvement in gambling caused significant problems in your relationship with your spouse/partner or important friends or family in the past 12 months?

1 ☐ Yes
2 ☐ No → **GO TO 93**

91. In the past 12 months, has your involvement in gambling caused an instance of domestic violence in your household?

1 ☐ Yes
2 ☐ No

92. In the past 12 months, has your involvement in gambling resulted in separation or divorce?

1 ☐ Yes
2 ☐ No

93. In the past 12 months, has your involvement in gambling caused you to repeatedly neglect your children or family?

1 ☐ Yes
2 ☐ No → **GO TO 95**

94. In the past 12 months, has child welfare services become involved because of your gambling?

1 ☐ Yes
2 ☐ No

95. Has your involvement in gambling caused significant work or school problems for you or someone close to you in the past 12 months or caused you to miss a significant amount of time off work or school?

1 ☐ Yes
2 ☐ No → **GO TO 100**

96. In the past 12 months, about how many work or school days have you lost due to gambling?

☐☐☐ *Days*

97. In the past 12 months, have you lost your job or had to quit school due to gambling?

1 ☐ Yes
2 ☐ No → **GO TO 100**

98. In the past 12 months, did anyone in this household receive any public assistance (food stamps, Temporary Assistance for Needy Families (TANF)) or any other welfare payments from the state or local welfare office as a result of losing your job because of gambling?

1 ☐ Yes
2 ☐ No → **GO TO 100**

99. Roughly how much money did you receive from public assistance in the past 12 months?

$☐☐,☐☐☐

100. In the past 12 months, has your involvement in gambling caused you or someone close to you to write bad checks, take money that didn't belong to you or commit other illegal acts to support your gambling?

1 ☐ Yes
2 ☐ No → **GO TO 107 ON PAGE 10**

101. In the past 12 months, about how much money have you illegally obtained in order to gamble?

$☐☐,☐☐☐

102. In the past 12 months, has your gambling been a factor in your committing a crime for which you have been arrested?

1 ☐ Yes
2 ☐ No → **GO TO 107 ON PAGE 10**

103. Were you convicted for this crime?

1 ☐ Yes
2 ☐ No → **GO TO 107 ON PAGE 10**

104. What was the offense?

105. Were you incarcerated for this crime?

1 ☐ Yes
2 ☐ No → **GO TO 107**

106. For how many days were you incarcerated?

☐☐☐ *Days*

107. In the past 12 months, have you often gambled longer, with more money or more frequently than you intended to?

1 ☐ Yes
2 ☐ No

108. In the past 12 months, have you made attempts to either cut down, control or stop gambling?

1 ☐ Yes
2 ☐ No → **GO TO 110**

109. Were you successful in these attempts to cut down, control or stop gambling?

1 ☐ Yes
2 ☐ No

110. In the past 12 months, is there anyone else who would say that you had difficulty controlling your gambling, regardless of whether you agreed with them or not?

1 ☐ Yes
2 ☐ No

111. In the past 12 months, would you say you have been preoccupied with gambling?

1 ☐ Yes
2 ☐ No

112. In the past 12 months, when you did try cutting down or stopping did you find you were very restless or irritable or that you had strong cravings for it?

1 ☐ Yes
2 ☐ No

113. In the past 12 months, did you find you needed to gamble with larger and larger amounts of money to achieve the same level of excitement?

1 ☐ Yes
2 ☐ No

114. Are there particular types of gambling that have contributed to your problems more than others?

1 ☐ Yes
2 ☐ No → **GO TO 116**

115. Which types of gambling have contributed to your problems?

116. Have you *wanted* help for gambling problems in the past 12 months?

1 ☐ Yes
2 ☐ No → **GO TO 120**

117. Have you *sought* help for gambling problems in the past 12 months?

1 ☐ Yes
2 ☐ No → **GO TO 120**

118. Where did you seek help from?

119. How helpful was this? Would you say…?

1 ☐ Very helpful
2 ☐ Somewhat helpful
3 ☐ Not very helpful
4 ☐ Not at all helpful

120. Have you excluded yourself from any casino or slots parlor in the past 12 months?

1 ☐ Yes
2 ☐ No → **GO TO 122 ON PAGE 11**

121. In which state?

122. Have you had problems with gambling in your lifetime prior to the past 12 months?

1 ☐ Yes
2 ☐ No

Household Demographics

123. Are you male or female?

1 ☐ Male
2 ☐ Female

124. In what year were you born?

☐☐☐☐ *Year*

125. At present are you...?

1 ☐ Married
2 ☐ Living with your partner
3 ☐ Separated, but still legally married
4 ☐ Divorced
5 ☐ Widowed
6 ☐ Never been married

126. How many children under 18 years old live in your household?

☐☐ *Number of Children*

127. What is the highest degree or level of school you have completed?

1 ☐ Never attended school or only attended kindergarten
2 ☐ Grades 1 through 8
3 ☐ Grades 9 through 11
4 ☐ Regular high school diploma or GED
5 ☐ Some college credit, but less than 1 year of college credit
6 ☐ 1 or more years of college credit, no degree
7 ☐ Associate degree
8 ☐ Bachelor's degree
9 ☐ Master's degree
10 ☐ Professional degree beyond a bachelor's degree
11 ☐ Doctorate degree

128. Are you currently...?

1 ☐ Employed for wages
2 ☐ Self-employed
3 ☐ Out of work for more than 1 year
4 ☐ Out of work for less than 1 year
5 ☐ A homemaker
6 ☐ A student
7 ☐ Retired
8 ☐ Unable to work

129. Have you ever served on active duty in the U.S. Armed Forces, military Reserves, or National Guard? *Active duty does not include training for the Reserves or National Guard, but does include activation, for example, for the Persian Gulf War.*

1 ☐ Yes, now on active duty
2 ☐ Yes, on active duty in the past, but not during the last 12 months
3 ☐ No, training for Reserves or National Guard only → **GO TO 131 ON PAGE 12**
4 ☐ No, never served in the military → **GO TO 131 ON PAGE 12**

130. When did you serve on active duty in the U.S. Armed Forces? *Check all that apply.*

1 ☐ September 2001 or later
2 ☐ August 1990 to August 2001 (including Persian Gulf War)
3 ☐ September 1980 to July 1990
4 ☐ May 1975 to August 1980
5 ☐ Vietnam era (August 1964 to April 1975)
6 ☐ March 1961 to July 1964
7 ☐ Korean War (July 1950 to January 1955)
8 ☐ World War II (December 1941 to December 1946)
9 ☐ February 1955 to February 1961
10 ☐ January 1947 to June 1950
11 ☐ November 1941 or earlier

131. What type of healthcare coverage do you have?

1 ☐ Prepaid private plans such as HMOs or PPOs
2 ☐ Medicare
3 ☐ Medicaid
4 ☐ Commonwealth Care Program (Health Connector)
5 ☐ Indian Health Services
6 ☐ Veterans Affairs (VA)
91 ☐ Other Plan

7 ☐ No health insurance

132. Do you own the place where you currently live, pay rent or something else?

1 ☐ Own
2 ☐ Rent
91 ☐ Something else

133. Is your approximate annual household income from all sources...

1 ☐ Less than $15,000
2 ☐ $15,000 - $29,999
3 ☐ $30,000 - $49,999
4 ☐ $50,000 - $69,999
5 ☐ $70,000 - $99,999
6 ☐ $100,000 - $124,999
7 ☐ $125,000 - $149,999
8 ☐ $150,000 or more

134. What do you estimate your current debt to be? Please include mortgages, credit cards, loans, car payments, etc.

1 ☐ $0 (no debt)
2 ☐ Less than $10,000
3 ☐ $10,000 - $19,999
4 ☐ $20,000 - $39,999
5 ☐ $40,000 - $59,999
6 ☐ $60,000 - $79,999
7 ☐ $80,000 - $99,999
8 ☐ $100,000 - $119,999
9 ☐ $120,000 - $139,999
10 ☐ $140,000 - $159,999
11 ☐ $160,000 - $179,999
12 ☐ $180,000 - $199,999
13 ☐ $200,000 - $299,999
14 ☐ $300,000 - $399,999
15 ☐ $400,000 - $499,999
16 ☐ $500,000 or more

135. Were you born in the United States?

1 ☐ Yes
2 ☐ No

136. Many people only live in Massachusetts for part of the year. Do you live in Massachusetts for 6 or more months out of the year? *If you recently moved to Massachusetts and plan on staying for 6 months or longer, mark yes. If you are planning on moving out of Massachusetts but have lived there for at least 6 months in 2013, mark yes.*

1 ☐ Yes
2 ☐ No

137. Are you Hispanic or Latino?

1 ☐ Yes
2 ☐ No

138. Which one or more of the following would you say is your race? *Check all that apply.*

1 ☐ White or Caucasian
2 ☐ Black or African American
3 ☐ Asian
4 ☐ Native Hawaiian or Other Pacific Islander
5 ☐ Native American or Alaskan Native
91 ☐ Some other race

139. To document who completed the survey from your household, please enter your first and last name.

140. What is the best phone number to reach you if we have more questions about your household? *This number will only be used to contact you about this study. We are prohibited from sharing, distributing, or selling your information to anyone outside of this project.*

☐☐☐–☐☐☐–☐☐☐☐

141. Please enter your email address.

You have reached the end of the survey. Thank you for your participation! You may be re-contacted in the future to participate in related studies. If you are contacted to participate in future surveys, you have the right to refuse. Thank you on behalf of the University of Massachusetts for the time and effort you've spent answering these questions. If you have any questions about this survey, you may contact Dr. Ed Stanek at 413-545-3812.

Thank you again.

If you would like information regarding treatment resources, please contact:

Massachusetts Substance Abuse Information and Education Helpline
800-327-5050
TTY: 617-536-5872

Drug & Alcohol Treatment Hotline
800-662-HELP

National Alliance on Mental Illness
1-800-950-6264

Samaritans
877-870-4673

National Suicide Prevention Lifeline
1-800-273-8255
1-800-799-4889

Because we are interested in how opinions change over time, we may be contacting you in the future. To help us contact you, please provide the name and contact information for three people who are likely to know where you can be reached. <u>Do not include someone who lives in your household.</u>

Contact #1
Name

Address

Phone

Email

Contact #2
Name

Address

Phone

Email

Contact #3
Name

Address

Phone

Email

Please return your completed questionnaire using the enclosed pre-paid envelope to:

University of Massachusetts Amherst
C/O NORC at the University of Chicago
1 North State Street, 16th Floor
Chicago, IL 60602

If you have misplaced the pre-paid envelope, please call 1-877-268-0271 for a new one.

NORC at the University of Chicago is conducting this study on behalf of the University of Massachusetts Amherst. If you have questions or would prefer to complete the survey by phone, please call NORC toll-free at 1-877-268-0271.

If you have questions about your rights as a study participant, you may call the NORC Institutional Review Board toll-free, at 1-866-309-0542.

If you would prefer to complete this survey online, please go to: https://MAHealth.norc.org/go/MAHealth.

Your unique survey Personal Identification Number (PIN) is: XXXXX.

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Receipt		CADE		Verification		Adjudication	
Initials	Date	Initials	Date	Initials	Date	Initials	Date

Appendix C: Attitudes

Table 35 Opinions about legalized gambling

					All should be illegal		Some should be legal and some should be illegal		All should be legal		
		Unweighted N[1]	Weighted N[2]	% missing[3]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	p-value[5]
Overall		9,318	5,112,947		12.8	(11.8, 13.9)	55.2	(53.7, 56.7)	32.0	(30.7, 33.4)	
	Missing	440	127,382	2%							
Gender											<0.0001
	Male	3,741	2,411,118		11.4	(9.9, 13.1)	50.9	(48.5, 53.3)	37.7	(35.4, 40.0)	
	Female	5,480	2,644,577		13.9	(12.6, 15.4)	59.2	(57.4, 61.0)	26.9	(25.3, 28.5)	
	Missing	97	57,252	1%							
Age											<0.0001
	18-20	100	211,399		* 8.5	(3.7, 18.1)	65.6	(53.9, 75.6)	26.0	(17.3, 37.1)	
	21-24	244	324,955		15.6	(10.5, 22.5)	57.0	(49.2, 64.5)	27.3	(20.9, 34.9)	
	25-34	991	899,568		9.5	(7.1, 12.5)	60.4	(56.4, 64.4)	30.1	(26.5, 33.9)	
	35-54	2,845	1,674,560		11.9	(10.2, 13.8)	54.7	(52.0, 57.3)	33.5	(31.0, 36.0)	
	55-64	1,933	849,115		12.2	(10.1, 14.6)	51.6	(48.6, 54.6)	36.2	(33.4, 39.2)	
	65-79	2,027	633,634		16.4	(14.3, 18.8)	49.4	(46.6, 52.2)	34.2	(31.6, 36.9)	
	80+	730	252,410		19.1	(15.6, 23.1)	54.5	(49.9, 59.1)	26.4	(22.6, 30.6)	
	Missing	448	267,305	6%							
Ethnicity											<0.0001
	Hispanic	462	418,775		28.8	(23.2, 35.0)	44.0	(37.9, 50.2)	27.3	(22.0, 33.3)	
	Black	351	338,724		17.3	(12.4, 23.7)	59.6	(52.5, 66.2)	23.1	(18.1, 29.0)	
	White	7,765	3,851,512		9.2	(8.3, 10.2)	55.8	(54.2, 57.4)	35.0	(33.4, 36.6)	
	Asian	361	279,010		25.8	(19.8, 32.9)	60.5	(53.2, 67.4)	13.7	(9.8, 18.7)	
	Other	74	44,955		33.6	(20.2, 50.3)	37.5	(24.9, 52.0)	28.9	(15.4, 47.6)	
	Missing	305	179,971	4%							
Education											<0.0001
	Less than high school	371	433,690		25.3	(19.6, 31.9)	42.7	(36.0, 49.6)	32.0	(25.9, 38.9)	
	HS or GED	1,275	1,311,047		15.3	(12.9, 18.2)	50.4	(46.7, 54.1)	34.2	(30.9, 37.8)	
	Some college	2,476	1,155,889		10.5	(8.9, 12.4)	57.0	(54.3, 59.6)	32.5	(30.0, 35.1)	

					All should be illegal		Some should be legal and some should be illegal		All should be legal		
		Unweighted N[1]	Weighted N[2]	% missing[3]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	p-value[5]
	BA	2,412	1,315,523		8.3	(7.1, 9.7)	59.1	(56.6, 61.6)	32.6	(30.2, 35.0)	
	MS or professional degree	2,078	632,680		10.6	(9.0, 12.4)	62.0	(59.4, 64.5)	27.5	(25.2, 29.8)	
	PHD	545	169,273		13.2	(10.1, 17.1)	59.5	(54.5, 64.4)	27.2	(23.0, 32.0)	
	Missing	161	94,846	2%							
Employment											<0.0001
	Employed	5,383	3,045,032		10.5	(9.2, 11.9)	56.6	(54.7, 58.5)	32.9	(31.1, 34.7)	
	Unemployed	344	265,117		12.5	(8.7, 17.7)	50.0	(42.4, 57.6)	37.5	(30.3, 45.3)	
	Homemaker	347	206,651		16.2	(10.8, 23.6)	63.2	(55.9, 69.9)	20.6	(15.8, 26.4)	
	Student	327	384,776		11.4	(7.8, 16.3)	57.6	(50.4, 64.5)	31.0	(24.6, 38.2)	
	Retired	2,387	824,174		17.8	(15.8, 20.0)	50.6	(47.9, 53.2)	31.6	(29.2, 34.1)	
	Disabled	350	280,394		19.8	(14.7, 26.2)	49.1	(41.8, 56.5)	31.1	(24.6, 38.3)	
	Missing	180	106,803	2%							
Income											<0.0001
	Less than $15,000	814	640,986		22.3	(18.5, 26.6)	50.4	(45.5, 55.2)	27.3	(23.2, 31.9)	
	$15,000 - <$30,000	1,001	628,567		16.4	(13.3, 20.2)	50.3	(45.7, 54.9)	33.3	(29.0, 37.8)	
	$30,000 - <$50,000	1,284	662,480		15.6	(12.6, 19.1)	52.3	(48.1, 56.5)	32.1	(28.4, 36.0)	
	$50,000 - <$100,000	2,439	1,235,562		10.0	(8.1, 12.2)	55.7	(52.7, 58.6)	34.4	(31.6, 37.2)	
	$100,000 -<$150,000	1,358	712,732		5.8	(4.3, 7.7)	56.5	(52.6, 60.3)	37.7	(34.0, 41.6)	
	$150,000 or more	1,118	521,469		8.1	(6.4, 10.2)	59.4	(55.5, 63.1)	32.5	(29.0, 36.3)	
	Missing	1,304	711,151	16%							
Marital status											0.0040
	Never married	1,551	1,278,581		11.3	(9.1, 13.9)	57.4	(53.7, 61.0)	31.3	(28.0, 34.9)	
	Living with partner	622	433,304		7.7	(4.9, 11.8)	60.0	(54.7, 65.1)	32.3	(27.6, 37.4)	
	Married	4,951	2,465,095		12.8	(11.4, 14.3)	54.9	(52.9, 56.8)	32.3	(30.5, 34.2)	
	Divorced or Separated	1,152	512,222		15.7	(12.7, 19.2)	49.9	(45.7, 54.0)	34.5	(30.7, 38.5)	
	Widowed	827	305,176		16.8	(13.5, 20.8)	52.4	(47.7, 57.0)	30.8	(26.6, 35.3)	

					All should be illegal		Some should be legal and some should be illegal		All should be legal		
		Unweighted N[1]	Weighted N[2]	% missing[3]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	p-value[5]
	Missing	215	118,569	2%							
Military status											0.8710
	No military	8,303	4,685,993		12.6	(11.6, 13.8)	55.4	(53.8, 57.0)	31.9	(30.5, 33.4)	
	Yes, served prior to Sept 2001	836	313,325		12.8	(9.9, 16.5)	52.9	(48.2, 57.5)	34.3	(30.2, 38.7)	
	Yes, served Sept 2001 or later	68	46,512		* 13.6	(5.7, 29.2)	54.1	(37.8, 69.5)	32.3	(19.7, 48.1)	
	Missing	111	67,116	1%	*						
Drug and alcohol use problems											0.1703
	No	9,112	4,951,574		13.0	(11.9, 14.1)	55.2	(53.7, 56.7)	31.9	(30.5, 33.3)	
	Yes	157	132,338		* 7.0	(2.8, 16.2)	60.5	(49.3, 70.7)	32.5	(23.1, 43.6)	
	Missing	49	29,035	1%	*						
Tobacco Use											<0.0001
	No	7,946	4,138,550		14.0	(12.8, 15.2)	55.3	(53.6, 56.9)	30.8	(29.3, 32.3)	
	Yes	1,207	895,282		6.4	(4.7, 8.6)	55.4	(51.3, 59.4)	38.2	(34.3, 42.2)	
	Missing	165	79,115	2%							
Self-reported Health status											0.0038
	Excellent	2,002	1,038,439		12.3	(10.2, 14.8)	57.6	(54.4, 60.7)	30.1	(27.3, 33.1)	
	Very Good	3,581	1,875,697		10.8	(9.3, 12.4)	55.9	(53.5, 58.2)	33.4	(31.1, 35.7)	
	Good	2,588	1,489,716		13.3	(11.5, 15.5)	55.1	(52.2, 57.9)	31.6	(29.0, 34.3)	
	Fair	913	557,248		15.0	(11.9, 18.6)	50.3	(45.6, 55.0)	34.8	(30.4, 39.4)	
	Poor	220	144,678		28.7	(20.0, 39.3)	48.8	(39.2, 58.6)	22.5	(15.7, 31.1)	
	Missing	14	7,170	0%							
Region											0.6033
	Western Massachusetts	2,687	645,174		12.2	(10.5, 14.0)	55.6	(53.0, 58.2)	32.2	(29.8, 34.8)	
	Greater Boston	5,163	3,481,602		13.3	(12.0, 14.7)	55.0	(53.1, 56.8)	31.7	(30.0, 33.5)	

					All should be illegal		Some should be legal and some should be illegal		All should be legal		
		Unweighted N[1]	Weighted N[2]	% missing[3]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	p-value[5]
	South Eastern Massachusetts	1,468	986,171		11.2	(9.1, 13.8)	55.7	(52.2, 59.2)	33.0	(29.9, 36.4)	
	Missing	0	0	0%							
County											0.0824
	Barnstable/Dukes/Nantucket	375	202,719		10.5	(6.9, 15.7)	60.0	(52.8, 66.8)	29.5	(23.5, 36.3)	
	BERKSHIRE	485	111,683		10.9	(7.7, 15.3)	57.9	(51.6, 63.9)	31.2	(25.6, 37.4)	
	BRISTOL	564	449,366		12.0	(8.7, 16.2)	53.1	(47.5, 58.5)	35.0	(30.0, 40.2)	
	ESSEX	848	567,491		15.5	(12.5, 19.1)	52.9	(48.2, 57.6)	31.6	(27.3, 36.2)	
	FRANKLIN	302	57,787		12.7	(9.0, 17.6)	51.3	(44.0, 58.5)	36.0	(29.1, 43.6)	
	HAMPDEN	1,291	351,109		13.8	(11.3, 16.8)	53.6	(49.8, 57.4)	32.5	(29.1, 36.2)	
	HAMPSHIRE	609	124,595		8.2	(5.9, 11.5)	61.2	(55.8, 66.5)	30.5	(25.6, 35.9)	
	MIDDLESEX	1,915	1,140,725		10.4	(8.6, 12.5)	57.8	(54.8, 60.8)	31.8	(29.0, 34.7)	
	NORFOLK	803	490,797		12.6	(9.7, 16.2)	55.7	(51.0, 60.3)	31.7	(27.5, 36.2)	
	PLYMOUTH	529	334,085		10.7	(7.2, 15.6)	56.7	(50.9, 62.3)	32.6	(27.6, 38.2)	
	SUFFOLK	625	570,976		16.3	(12.7, 20.8)	55.0	(49.7, 60.1)	28.7	(24.3, 33.6)	
	WORCESTER	972	711,614		14.3	(11.3, 18.0)	51.5	(47.1, 55.9)	34.1	(30.0, 38.5)	
	Missing	0	0	0%							

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] The % missing is calculated using the weighted N

[4] Percentages and 95% CI are calculated using the weighted N

[5] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 36 Beliefs about gambling availability in Massachusetts

						Too widely available			Current availability is fine			Not available enough		
		Unweighted N[1]	Weighted N[2]	% missing[3]		%[4]	95% CI[4]		%[4]	95% CI[4]		%[4]	95% CI[4]	p-value[5]
Overall		9227	5,060,736			15.6	(14.6, 16.7)		61.3	(59.8, 62.8)		23.1	(21.8, 24.4)	
	Missing	531	179,593	4%										
Gender														<0.0001
	Male	3711	2,386,073			14.6	(13.0, 16.3)		57.9	(55.5, 60.3)		27.5	(25.4, 29.7)	
	Female	5418	2,618,263			16.5	(15.1, 18.0)		64.4	(62.6, 66.2)		19.1	(17.7, 20.6)	
	Missing	98	56,400	1%										
Age														<0.0001
	18-20	96	205,828		*	12.0	(6.1, 22.5)		68.1	(56.3, 78.0)		19.8	(12.1, 30.7)	
	21-24	241	322,133			16.2	(10.9, 23.5)		65.3	(57.6, 72.2)		18.5	(13.6, 24.7)	
	25-34	984	896,233			7.7	(5.9, 10.1)		65.6	(61.6, 69.4)		26.7	(23.2, 30.5)	
	35-54	2820	1,659,396			15.6	(13.7, 17.8)		61.2	(58.5, 63.8)		23.2	(20.9, 25.5)	
	55-64	1927	844,309			17.7	(15.4, 20.2)		57.0	(54.0, 60.0)		25.3	(22.8, 28.0)	
	65-79	1994	623,053			18.8	(16.7, 21.2)		57.8	(54.9, 60.5)		23.4	(21.1, 25.9)	
	80+	727	253,187			26.7	(22.8, 31.1)		59.5	(54.8, 64.0)		13.8	(10.7, 17.7)	
	Missing	438	256,596	5%										
Ethnicity														<0.0001
	Hispanic	437	394,336			22.3	(17.4, 28.1)		50.1	(43.6, 56.5)		27.7	(22.1, 34.0)	
	Black	349	334,797			21.4	(15.9, 28.3)		55.6	(48.3, 62.6)		23.0	(17.5, 29.6)	
	White	7709	3,831,926			14.0	(12.9, 15.1)		62.7	(61.1, 64.3)		23.3	(22.0, 24.8)	
	Asian	354	275,309			17.7	(12.3, 24.9)		66.6	(59.0, 73.4)		15.7	(11.1, 21.7)	
	Other	76	46,972			27.3	(15.7, 43.1)		44.6	(30.3, 59.9)		28.1	(15.2, 45.9)	
	Missing	302	177,396	4%										
Education														<0.0001
	Less than high school	362	425,714			23.3	(18.0, 29.6)		55.2	(48.2, 62.0)		21.5	(16.4, 27.6)	
	HS or GED	1267	1,305,329			18.1	(15.4, 21.1)		56.4	(52.7, 60.0)		25.5	(22.4, 28.9)	
	Some college	2453	1,141,920			13.4	(11.7, 15.3)		58.7	(56.0, 61.4)		27.9	(25.5, 30.4)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	Too widely available		Current availability is fine		Not available enough		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
	BA	2402	1,306,209		12.2	(10.7, 13.9)	66.2	(63.7, 68.5)	21.6	(19.6, 23.8)	
	MS or professional degree	2040	616,805		15.0	(13.3, 16.9)	67.9	(65.4, 70.3)	17.1	(15.2, 19.3)	
	PHD	539	167,227		18.8	(15.1, 23.0)	67.9	(62.9, 72.5)	13.4	(10.2, 17.4)	
	Missing	164	97,533	2%							
Employment											<0.0001
	Employed	5342	3,020,596		12.9	(11.6, 14.3)	62.9	(61.0, 64.8)	24.2	(22.5, 25.9)	
	Unemployed	345	266,759		15.3	(10.9, 21.1)	55.3	(47.6, 62.8)	29.3	(22.6, 37.1)	
	Homemaker	341	199,912		23.7	(17.6, 31.0)	64.7	(57.4, 71.4)	11.7	(8.1, 16.4)	
	Student	318	377,279		11.7	(7.4, 17.9)	69.6	(62.6, 75.9)	18.7	(13.9, 24.7)	
	Retired	2361	819,712		22.0	(19.8, 24.2)	56.9	(54.3, 59.5)	21.1	(19.0, 23.4)	
	Disabled	338	269,163		27.1	(20.9, 34.2)	46.3	(38.8, 54.0)	26.6	(20.5, 33.7)	
	Missing	182	107,315	2%							
Income											<0.0001
	Less than $15,000	797	631,747		22.2	(18.5, 26.4)	53.9	(49.0, 58.8)	23.9	(19.9, 28.5)	
	$15,000 - <$30,000	984	618,377		18.2	(15.0, 21.9)	60.5	(56.0, 64.9)	21.3	(17.9, 25.2)	
	$30,000 - <$50,000	1285	660,280		19.2	(15.8, 23.2)	59.4	(55.2, 63.5)	21.4	(18.3, 24.8)	
	$50,000 - <$100,000	2425	1,225,712		12.6	(10.8, 14.6)	62.0	(59.0, 64.8)	25.4	(22.9, 28.2)	
	$100,000 -<$150,000	1350	710,689		10.5	(8.4, 13.0)	63.5	(59.7, 67.2)	26.0	(22.7, 29.7)	
	$150,000 or more	1107	516,559		13.1	(10.8, 15.7)	64.2	(60.3, 67.9)	22.7	(19.4, 26.4)	
	Missing	1279	697,372	16%							
Marital status											<0.0001
	Never married	1542	1,274,852		14.6	(12.1, 17.5)	63.7	(60.0, 67.2)	21.7	(18.8, 24.9)	
	Living with partner	618	430,006		8.3	(5.9, 11.5)	58.8	(53.5, 63.9)	32.9	(28.1, 38.1)	
	Married	4895	2,423,902		16.0	(14.6, 17.6)	61.5	(59.5, 63.4)	22.5	(20.9, 24.2)	
	Divorced or Separated	1133	505,213		17.2	(14.2, 20.6)	57.0	(52.7, 61.1)	25.9	(22.2, 29.9)	
	Widowed	825	309,412		22.2	(18.6, 26.3)	59.9	(55.3, 64.3)	17.9	(14.6, 21.7)	
	Missing	214	117,352	2%							

						Too widely available			Current availability is fine			Not available enough		
		Unweighted N[1]	Weighted N[2]	% missing[3]		%[4]	95% CI[4]		%[4]	95% CI[4]		%[4]	95% CI[4]	p-value[5]
Military status														0.1369
	No military	8222	4,641,885			15.5	(14.3, 16.7)		61.7	(60.1, 63.2)		22.9	(21.5, 24.2)	
	Yes, served prior to Sept 2001	831	310,674			18.4	(15.3, 22.1)		56.0	(51.3, 60.6)		25.6	(21.5, 30.2)	
	Yes, served Sept 2001 or later	67	45,158		*	10.5	(4.6, 22.3)		58.5	(40.8, 74.3)		30.9	(16.3, 50.7)	
	Missing	107	63,019	1%	*									
Drug and alcohol use problems														0.0022
	No	9023	4,901,918			15.8	(14.8, 17.0)		61.4	(59.9, 62.9)		22.7	(21.5, 24.0)	
	Yes	153	128,754		*	7.0	(3.4, 13.6)		55.1	(43.8, 65.9)		37.9	(27.5, 49.6)	
	Missing	51	30,064	1%	*									
Tobacco Use														<0.0001
	No	7870	4,100,051			16.3	(15.1, 17.5)		62.5	(61.0, 64.1)		21.2	(19.9, 22.5)	
	Yes	1202	889,714			11.8	(9.4, 14.6)		56.8	(52.7, 60.9)		31.4	(27.7, 35.3)	
	Missing	155	70,972	1%										
Self-reported Health status														<0.0001
	Excellent	1990	1,029,081			14.8	(12.6, 17.2)		66.3	(63.1, 69.2)		19.0	(16.6, 21.7)	
	Very Good	3563	1,871,415			13.6	(12.0, 15.3)		63.5	(61.1, 65.7)		23.0	(21.0, 25.0)	
	Good	2559	1,467,434			15.7	(13.7, 17.9)		59.2	(56.3, 62.0)		25.1	(22.7, 27.8)	
	Fair	888	547,484			21.5	(17.8, 25.7)		54.2	(49.4, 59.0)		24.3	(20.3, 28.8)	
	Poor	212	138,057			25.3	(17.7, 34.8)		46.5	(36.7, 56.7)		28.2	(20.1, 38.0)	
	Missing	15	7,265	0%										
Region														0.3165
	Western Massachusetts	2662	636,947			15.9	(14.2, 17.8)		62.1	(59.5, 64.7)		22.0	(19.8, 24.4)	
	Greater Boston	5118	3,445,814			16.0	(14.7, 17.5)		61.4	(59.5, 63.2)		22.6	(21.0, 24.2)	
	South Eastern Massachusetts	1447	977,975			14.0	(11.8, 16.6)		60.5	(57.1, 63.9)		25.4	(22.6, 28.5)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	Too widely available		Current availability is fine		Not available enough		
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	p-value[5]
	Missing	0	0	0%							
County											0.0549
	Barnstable/Dukes/Nantucket	357	196,510		15.4	(11.4, 20.5)	66.6	(59.8, 72.8)	17.9	(13.3, 23.7)	
	BERKSHIRE	469	106,933		16.0	(12.2, 20.7)	56.3	(50.1, 62.4)	27.7	(22.2, 33.9)	
	BRISTOL	560	447,354		13.6	(10.3, 17.7)	61.2	(55.8, 66.3)	25.2	(21.0, 30.0)	
	ESSEX	831	550,292		14.5	(11.7, 17.9)	58.3	(53.5, 63.0)	27.1	(22.9, 31.9)	
	FRANKLIN	304	58,046		20.0	(15.1, 26.1)	62.5	(55.2, 69.2)	17.5	(12.3, 24.2)	
	HAMPDEN	1285	349,033		15.7	(13.2, 18.4)	61.8	(58.0, 65.4)	22.5	(19.4, 26.0)	
	HAMPSHIRE	604	122,936		14.5	(11.4, 18.3)	68.0	(62.9, 72.7)	17.5	(13.8, 22.0)	
	MIDDLESEX	1886	1,124,575		15.5	(13.3, 17.9)	62.6	(59.6, 65.5)	21.9	(19.4, 24.6)	
	NORFOLK	802	495,721		16.0	(12.9, 19.7)	61.9	(57.4, 66.3)	22.1	(18.6, 26.0)	
	PLYMOUTH	530	334,110		13.8	(10.2, 18.5)	56.1	(50.2, 61.7)	30.1	(25.0, 35.8)	
	SUFFOLK	626	567,136		15.4	(12.0, 19.5)	63.3	(58.1, 68.2)	21.3	(17.2, 26.1)	
	WORCESTER	973	708,089		18.6	(15.2, 22.5)	59.9	(55.4, 64.3)	21.5	(18.0, 25.4)	
	Missing	0	0	0%							

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] The % missing is calculated using the weighted N
[4] Percentages and 95% CI are calculated using the weighted N
[5] P-value from chi-square test for differences across groups
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 37 Perceived Impact of expanded gambling in Massachusetts

		Unweighted N[1]	Weighted N[2]	% missing[3]	Very harmful		Somewhat harmful		Neither beneficial nor harmful		Somewhat beneficial		Very beneficial		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
Overall		9456	5,180,192		13.0	(12.0, 14.0)	26.0	(24.8, 27.3)	18.9	(17.8, 20.1)	32.7	(31.3, 34.1)	9.4	(8.5, 10.4)	
	Missing	302	60,137	1%											
Gender															<0.0001
	Male	3770	2,421,665		12.4	(10.9, 14.0)	23.2	(21.3, 25.2)	19.1	(17.3, 21.0)	34.2	(32.0, 36.5)	11.1	(9.5, 12.9)	
	Female	5581	2,697,797		13.4	(12.2, 14.7)	28.4	(26.8, 30.1)	18.7	(17.4, 20.2)	31.4	(29.8, 33.1)	8.0	(7.0, 9.1)	
	Missing	105	60,730	1%											
Age															<0.0001
	18-20	99	209,140		* 8.7	(4.2, 17.0)	29.2	(19.6, 41.0)	24.8	(16.0, 36.4)	26.8	(18.0, 38.1)	* 10.4	(5.2, 19.7)	
	21-24	240	319,915		15.7	(10.6, 22.7)	20.1	(14.6, 27.1)	23.0	(17.5, 29.7)	29.9	(23.4, 37.3)	11.3	(7.0, 17.7)	
	25-34	996	906,270		8.8	(6.7, 11.3)	23.2	(20.1, 26.7)	21.4	(18.4, 24.8)	35.2	(31.4, 39.2)	11.5	(9.0, 14.4)	
	35-54	2872	1,693,512		13.1	(11.3, 15.0)	26.3	(24.1, 28.6)	18.1	(16.2, 20.2)	32.9	(30.5, 35.4)	9.6	(8.0, 11.5)	
	55-64	1970	866,101		13.0	(11.2, 15.1)	27.5	(25.1, 30.2)	15.3	(13.3, 17.4)	35.4	(32.6, 38.4)	8.7	(7.1, 10.7)	
	65-79	2062	650,177		14.6	(12.8, 16.7)	26.0	(23.7, 28.4)	16.3	(14.4, 18.4)	33.4	(30.8, 36.1)	9.7	(8.0, 11.7)	
	80+	755	261,757		16.1	(13.0, 19.8)	27.5	(23.9, 31.4)	22.9	(19.2, 27.2)	27.9	(24.0, 32.2)	5.6	(3.4, 9.0)	
	Missing	462	273,320	6%											
Ethnicity															<0.0001
	Hispanic	478	431,035		23.6	(18.4, 29.7)	21.5	(17.0, 26.7)	17.4	(13.3, 22.3)	27.0	(21.9, 32.9)	10.6	(7.4, 14.9)	
	Black	361	347,857		10.2	(6.7, 15.2)	24.3	(18.6, 31.1)	14.3	(10.2, 19.8)	32.0	(26.1, 38.6)	19.1	(13.7, 26.0)	
	White	7861	3,887,336		11.2	(10.3, 12.2)	26.3	(25.0, 27.7)	18.7	(17.4, 20.0)	34.8	(33.3, 36.4)	9.0	(8.0, 10.0)	
	Asian	359	277,901		14.9	(10.4, 20.9)	30.2	(23.8, 37.3)	29.7	(23.5, 36.8)	22.4	(16.6, 29.5)	* 2.8	(1.2, 6.3)	
	Other	80	48,362		33.4	(20.8, 48.9)	* 18.3	(9.8, 31.7)	* 19.7	(9.6, 36.2)	* 12.7	(6.7, 22.8)	* 15.9	(6.7, 33.1)	
	Missing	317	187,700	4%											
Education															<0.0001
	Less than high school	388	446,561		16.8	(12.3, 22.5)	27.3	(21.3, 34.2)	15.3	(11.1, 20.8)	29.2	(23.7, 35.3)	11.4	(7.7, 16.5)	
	HS or GED	1300	1,337,253		12.6	(10.3, 15.3)	20.1	(17.4, 23.1)	17.5	(14.8, 20.5)	36.8	(33.3, 40.4)	13.1	(10.7, 15.9)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	Very harmful		Somewhat harmful		Neither beneficial nor harmful		Somewhat beneficial		Very beneficial		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
	Some college	2510	1,163,336		10.0	(8.5, 11.7)	22.9	(20.8, 25.2)	17.8	(15.8, 19.9)	37.6	(35.0, 40.2)	11.7	(10.1, 13.7)	
	BA	2440	1,321,386		12.0	(10.5, 13.6)	29.0	(26.8, 31.3)	20.5	(18.5, 22.7)	32.0	(29.6, 34.4)	6.6	(5.3, 8.1)	
	MS or professional degree	2086	633,424		16.2	(14.4, 18.2)	32.7	(30.4, 35.2)	22.6	(20.5, 24.9)	24.8	(22.6, 27.0)	3.7	(2.8, 4.8)	
	PHD	554	171,651		17.7	(14.2, 21.8)	38.5	(33.8, 43.4)	22.7	(18.7, 27.4)	18.3	(14.6, 22.7)	2.8	(1.6, 4.9)	
	Missing	178	106,581	2%											
Employment															<0.0001
	Employed	5437	3,074,463		11.4	(10.3, 12.7)	26.6	(25.0, 28.2)	19.2	(17.7, 20.8)	33.8	(32.0, 35.6)	9.0	(7.9, 10.3)	
	Unemployed	352	269,580		11.4	(8.0, 15.8)	22.4	(16.5, 29.6)	14.4	(9.9, 20.6)	32.3	(25.7, 39.7)	19.5	(13.9, 26.7)	
	Homemaker	355	211,203		20.5	(15.0, 27.3)	29.0	(23.5, 35.2)	14.0	(10.3, 18.6)	29.6	(23.4, 36.7)	* 6.9	(3.7, 12.7)	
	Student	324	380,129		13.5	(9.6, 18.7)	25.6	(19.6, 32.6)	27.4	(21.6, 34.2)	26.7	(21.1, 33.2)	* 6.8	(3.7, 12.1)	
	Retired	2435	842,424		15.0	(13.2, 17.0)	26.9	(24.8, 29.1)	18.1	(16.2, 20.2)	32.2	(29.8, 34.7)	7.8	(6.4, 9.5)	
	Disabled	361	289,790		17.3	(12.4, 23.7)	18.3	(13.6, 24.1)	15.1	(10.7, 20.8)	34.3	(27.6, 41.6)	15.0	(10.4, 21.2)	
	Missing	192	112,604	2%											
Income															<0.0001
	Less than $15,000	838	661,728		16.3	(13.0, 20.2)	16.5	(13.6, 19.9)	19.5	(15.9, 23.6)	34.1	(29.6, 38.8)	13.7	(10.6, 17.5)	
	$15,000 - <$30,000	1018	636,612		13.9	(11.0, 17.6)	24.4	(20.7, 28.6)	17.6	(14.2, 21.5)	34.7	(30.5, 39.1)	9.5	(7.3, 12.2)	
	$30,000 - <$50,000	1312	674,579		13.8	(11.0, 17.0)	27.1	(23.5, 31.0)	20.2	(17.1, 23.9)	30.1	(26.6, 33.9)	8.8	(6.7, 11.5)	
	$50,000 - <$100,000	2460	1,239,441		10.7	(9.1, 12.5)	25.4	(23.0, 27.9)	18.6	(16.4, 21.0)	35.6	(32.9, 38.5)	9.8	(8.0, 12.0)	
	$100,000 - <$150,000	1362	715,589		9.4	(7.5, 11.8)	26.6	(23.4, 30.0)	18.7	(16.2, 21.6)	36.7	(32.9, 40.6)	8.5	(6.4, 11.3)	
	$150,000 or more	1127	524,295		13.8	(11.4, 16.5)	32.4	(28.9, 36.0)	19.6	(16.9, 22.7)	27.1	(23.9, 30.6)	7.1	(4.7, 10.6)	
	Missing	1339	727,949	16 %											
															<0.0001

		Unweighted N[1]	Weighted N[2]	% missing[3]	Very harmful		Somewhat harmful		Neither beneficial nor harmful		Somewhat beneficial		Very beneficial		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
Marital status	Never married	1564	1,284,545		11.7	(9.6, 14.2)	23.1	(20.2, 26.4)	21.8	(18.9, 24.9)	32.3	(28.9, 35.8)	11.2	(8.9, 13.9)	
	Living with partner	627	434,185		7.6	(5.4, 10.6)	19.8	(16.2, 24.1)	20.2	(16.4, 24.5)	39.4	(34.4, 44.7)	13.0	(9.6, 17.3)	
	Married	5005	2,488,633		14.4	(13.1, 15.9)	28.5	(26.9, 30.3)	17.5	(16.1, 19.0)	32.1	(30.3, 33.9)	7.4	(6.4, 8.6)	
	Divorced or Separated	1176	525,907		12.4	(9.9, 15.4)	24.1	(21.0, 27.5)	17.4	(14.6, 20.7)	32.9	(29.0, 37.1)	13.2	(10.4, 16.6)	
	Widowed	856	318,519		12.7	(9.9, 16.1)	27.4	(23.8, 31.3)	19.4	(16.1, 23.3)	31.8	(27.7, 36.3)	8.7	(6.3, 11.8)	
	Missing	228	128,403	3%											
Military status															0.0257
	No military	8429	4,750,346		13.0	(12.0, 14.1)	26.0	(24.7, 27.3)	19.2	(18.0, 20.5)	32.7	(31.2, 34.1)	9.2	(8.2, 10.2)	
	Yes, served prior to Sept 2001	845	315,986		13.4	(10.6, 16.9)	25.0	(21.2, 29.1)	17.0	(14.0, 20.6)	33.6	(29.5, 38.0)	10.9	(7.8, 15.1)	
	Yes, served Sept 2001 or later	68	46,512		* 7.0	(2.2, 19.7)	23.0	(12.3, 38.9)	* 4.7	(1.7, 12.5)	39.3	(25.2, 55.4)	* 26.0	(12.4, 46.7)	
	Missing	114	67,347	1%											
Drug and alcohol use problems															0.0473
	No	9244	5,017,336		13.1	(12.1, 14.1)	26.1	(24.9, 27.4)	19.1	(18.0, 20.3)	32.4	(31.0, 33.8)	9.3	(8.4, 10.3)	
	Yes	156	131,062		* 8.1	(3.4, 18.0)	23.4	(15.4, 33.9)	11.3	(6.7, 18.6)	41.5	(31.2, 52.6)	15.6	(9.0, 25.8)	
	Missing	56	31,794	1%											
Tobacco Use															<0.0001
	No	8058	4,193,118		14.0	(12.9, 15.1)	27.1	(25.7, 28.4)	19.3	(18.1, 20.6)	31.3	(29.9, 32.8)	8.3	(7.4, 9.4)	
	Yes	1226	904,135		7.8	(5.9, 10.1)	21.7	(18.4, 25.4)	17.2	(14.4, 20.4)	38.9	(35.0, 42.9)	14.5	(11.8, 17.6)	
	Missing	172	82,938	2%											
Self-reported health status															0.0002
	Excellent	2018	1,043,283		14.2	(12.1, 16.5)	28.8	(26.2, 31.6)	18.2	(16.0, 20.7)	30.3	(27.4, 33.3)	8.5	(6.6, 10.9)	
	Very Good	3637	1,902,234		10.9	(9.6, 12.4)	26.2	(24.2, 28.3)	21.0	(19.1, 23.1)	33.9	(31.7, 36.1)	7.9	(6.6, 9.5)	
	Good	2621	1,506,516		13.8	(11.9, 16.0)	25.3	(22.9, 27.8)	17.5	(15.5, 19.7)	33.5	(30.9, 36.3)	9.8	(8.2, 11.8)	
	Fair	940	573,417		11.8	(9.4, 14.6)	25.0	(21.1, 29.3)	18.5	(15.4, 22.1)	31.4	(27.1, 36.0)	13.3	(10.4, 16.9)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	Very harmful		Somewhat harmful		Neither beneficial nor harmful		Somewhat beneficial		Very beneficial		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
	Poor	225	147,476		25.4	(17.6, 35.2)	15.8	(10.4, 23.1)	13.8	(8.1, 22.5)	29.0	(21.3, 38.1)	16.1	(9.9, 24.9)	
	Missing	15	7,266	0%											
Region															0.0008
	Western Massachusetts	2734	654,995		15.0	(13.4, 16.9)	24.7	(22.6, 26.9)	17.4	(15.5, 19.4)	33.3	(30.8, 35.8)	9.6	(8.0, 11.5)	
	Greater Boston	5238	3,525,959		13.1	(11.9, 14.4)	27.1	(25.5, 28.8)	19.8	(18.3, 21.3)	30.9	(29.2, 32.6)	9.2	(8.0, 10.4)	
	South Eastern Massachusetts	1484	999,237		11.2	(9.0, 13.9)	23.0	(20.3, 25.9)	17.0	(14.5, 19.7)	38.5	(35.2, 42.0)	10.3	(8.3, 12.7)	
	Missing	0	0	0%											
County															<0.0001
	Barnstable/Dukes/Nantucket	376	203,523		13.4	(9.4, 18.7)	27.9	(22.1, 34.6)	19.2	(13.6, 26.5)	34.5	(28.0, 41.6)	* 5.1	(2.8, 9.1)	
	BERKSHIRE	485	109,301		12.4	(9.0, 17.0)	26.3	(21.5, 31.8)	18.4	(14.3, 23.3)	32.6	(27.3, 38.3)	10.3	(6.6, 15.8)	
	BRISTOL	572	453,235		11.5	(8.0, 16.3)	18.0	(14.4, 22.3)	14.4	(11.2, 18.4)	43.9	(38.5, 49.4)	12.2	(9.1, 16.1)	
	ESSEX	859	572,514		13.0	(10.2, 16.4)	25.4	(21.8, 29.4)	19.3	(15.6, 23.5)	30.9	(26.8, 35.2)	11.5	(8.5, 15.4)	
	FRANKLIN	309	58,758		16.5	(12.3, 21.6)	27.3	(21.6, 33.9)	14.1	(10.2, 19.2)	31.2	(24.8, 38.3)	10.9	(6.2, 18.4)	
	HAMPDEN	1319	360,439		15.3	(13.0, 18.0)	22.3	(19.5, 25.4)	15.8	(13.4, 18.5)	35.7	(32.1, 39.4)	10.9	(8.6, 13.7)	
	HAMPSHIRE	621	126,498		15.8	(12.4, 19.8)	28.9	(24.6, 33.6)	22.4	(17.5, 28.2)	28.0	(23.4, 33.1)	4.9	(3.3, 7.3)	
	MIDDLESEX	1930	1,149,205		14.2	(12.2, 16.4)	27.6	(25.1, 30.3)	20.1	(17.9, 22.4)	30.6	(27.8, 33.4)	7.6	(5.9, 9.8)	
	NORFOLK	814	499,473		9.1	(7.2, 11.5)	29.3	(25.3, 33.5)	22.3	(18.4, 26.8)	32.4	(28.1, 37.1)	6.9	(5.1, 9.3)	
	PLYMOUTH	536	342,480		9.6	(6.6, 13.7)	26.6	(21.8, 32.0)	19.0	(15.0, 23.8)	33.9	(28.8, 39.4)	10.9	(7.5, 15.5)	
	SUFFOLK	642	581,498		12.8	(9.9, 16.4)	30.2	(25.6, 35.3)	19.6	(16.1, 23.6)	28.1	(23.7, 32.9)	9.4	(6.6, 13.2)	
	WORCESTER	993	723,270		14.3	(11.4, 17.8)	23.7	(20.3, 27.5)	18.2	(15.1, 21.9)	32.5	(28.6, 36.7)	11.2	(8.5, 14.6)	
	Missing	0	0	0%											

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] The % missing is calculated using the weighted N

[4] Percentages and 95% CI are calculated using the weighted N
[5] P-value from chi-square test for differences across groups
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 38 Perceived impact of gambling in Massachusetts (collapsed into 3 groups)

					Harmful		About equal		Beneficial		
		Unweighted N[1]	Weighted N[2]	% missing [3]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	p-value[5]
Overall		9,456	5,180,192		39.0	(37.6, 40.4)	18.9	(17.8, 20.1)	42.1	(40.6, 43.6)	
	Missing	302	60,137	1%							
Gender											<0.0001
	Male	3,770	2,421,665		35.6	(33.4, 37.9)	19.1	(17.3, 21.0)	45.3	(42.9, 47.7)	
	Female	5,581	2,697,797		41.9	(40.1, 43.7)	18.7	(17.4, 20.2)	39.4	(37.6, 41.2)	
	Missing	105	60,730	1%							
Age											<0.0001
	18-20	99	209,140		37.9	(27.3, 49.6)	24.8	(16.0, 36.4)	37.3	(27.0, 48.9)	
	21-24	240	319,915		35.8	(28.6, 43.7)	23.0	(17.5, 29.7)	41.2	(33.8, 48.9)	
	25-34	996	906,270		31.9	(28.4, 35.8)	21.4	(18.4, 24.8)	46.7	(42.7, 50.7)	
	35-54	2,872	1,693,512		39.4	(36.8, 42.0)	18.1	(16.2, 20.2)	42.5	(39.9, 45.1)	
	55-64	1,970	866,101		40.6	(37.7, 43.5)	15.3	(13.3, 17.4)	44.2	(41.2, 47.2)	
	65-79	2,062	650,177		40.6	(38.0, 43.4)	16.3	(14.4, 18.4)	43.1	(40.3, 45.9)	
	80+	755	261,757		43.6	(39.2, 48.1)	22.9	(19.2, 27.2)	33.5	(29.2, 38.0)	
	Missing	462	273,320	6%							
Ethnicity											<0.0001
	Hispanic	478	431,035		45.0	(38.9, 51.3)	17.4	(13.3, 22.3)	37.6	(31.8, 43.8)	
	Black	361	347,857		34.5	(28.1, 41.6)	14.3	(10.2, 19.8)	51.1	(44.1, 58.1)	
	White	7,861	3,887,336		37.6	(36.0, 39.1)	18.7	(17.4, 20.0)	43.8	(42.2, 45.4)	
	Asian	359	277,901		45.1	(37.9, 52.5)	29.7	(23.5, 36.8)	25.2	(19.2, 32.4)	
	Other	80	48,362		51.7	(36.6, 66.5)	* 19.7	(9.6, 36.2)	28.6	(16.8, 44.1)	
	Missing	317	187,700	4%							
Education											<0.0001
	Less than high school	388	446,561		44.1	(37.4, 51.0)	15.3	(11.1, 20.8)	40.6	(34.2, 47.2)	
	HS or GED	1,300	1,337,253		32.7	(29.3, 36.2)	17.5	(14.8, 20.5)	49.9	(46.2, 53.5)	
	Some college	2,510	1,163,336		32.9	(30.5, 35.4)	17.8	(15.8, 19.9)	49.3	(46.6, 52.0)	

		Unweighted N[1]	Weighted N[2]	% missing [3]	Harmful		About equal		Beneficial		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
	BA	2,440	1,321,386		41.0	(38.5, 43.5)	20.5	(18.5, 22.7)	38.5	(36.1, 41.1)	
	MS or professional degree	2,086	633,424		49.0	(46.4, 51.5)	22.6	(20.5, 24.9)	28.4	(26.2, 30.8)	
	PHD	554	171,651		56.2	(51.1, 61.1)	22.7	(18.7, 27.4)	21.1	(17.2, 25.6)	
	Missing	178	106,581	2%							
Employment											0.0001
	Employed	5,437	3,074,463		38.0	(36.2, 39.9)	19.2	(17.7, 20.8)	42.8	(40.9, 44.7)	
	Unemployed	352	269,580		33.8	(27.1, 41.1)	14.4	(9.9, 20.6)	51.8	(44.3, 59.3)	
	Homemaker	355	211,203		49.5	(42.6, 56.5)	14.0	(10.3, 18.6)	36.5	(29.8, 43.8)	
	Student	324	380,129		39.1	(32.3, 46.2)	27.4	(21.6, 34.2)	33.5	(27.2, 40.5)	
	Retired	2,435	842,424		41.9	(39.4, 44.4)	18.1	(16.2, 20.2)	40.0	(37.5, 42.6)	
	Disabled	361	289,790		35.6	(29.1, 42.8)	15.1	(10.7, 20.8)	49.3	(42.1, 56.5)	
	Missing	192	112,604	2%							
Income											<0.0001
	Less than $15,000	838	661,728		32.8	(28.5, 37.3)	19.5	(15.9, 23.6)	47.8	(43.0, 52.6)	
	$15,000 - <$30,000	1,018	636,612		38.3	(33.9, 42.9)	17.6	(14.2, 21.5)	44.1	(39.7, 48.6)	
	$30,000 - <$50,000	1,312	674,579		40.8	(36.8, 45.0)	20.2	(17.1, 23.9)	38.9	(35.0, 42.9)	
	$50,000 - <$100,000	2,460	1,239,441		36.0	(33.3, 38.8)	18.6	(16.4, 21.0)	45.4	(42.5, 48.4)	
	$100,000 - <$150,000	1,362	715,589		36.0	(32.5, 39.7)	18.7	(16.2, 21.6)	45.2	(41.3, 49.2)	
	$150,000 or more	1,127	524,295		46.1	(42.3, 50.0)	19.6	(16.9, 22.7)	34.2	(30.5, 38.1)	
	Missing	1,339	727,949	16%							

		Unweighted N[1]	Weighted N[2]	% missing [3]	Harmful		About equal		Beneficial		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
Marital status											<0.0001
	Never married	1,564	1,284,545		34.8	(31.4, 38.4)	21.8	(18.9, 24.9)	43.4	(39.8, 47.1)	
	Living with	627	434,185		27.4	(23.2, 32.1)	20.2	(16.4, 24.5)	52.4	(47.2, 57.6)	
	Married	5,005	2,488,633		43.0	(41.1, 44.9)	17.5	(16.1, 19.0)	39.5	(37.6, 41.4)	
	Divorced or Separated	1,176	525,907		36.5	(32.7, 40.4)	17.4	(14.6, 20.7)	46.1	(41.9, 50.3)	
	Widowed	856	318,519		40.1	(35.8, 44.5)	19.4	(16.1, 23.3)	40.5	(36.1, 45.1)	
	Missing	228	128,403	3%							
Military status											0.0027
	No military	8,429	4,750,346		39.0	(37.5, 40.5)	19.2	(18.0, 20.5)	41.8	(40.3, 43.4)	
	Yes, served prior to Sept 2001	845	315,986		38.4	(34.0, 42.9)	17.0	(14.0, 20.6)	44.6	(40.0, 49.2)	
	Yes, served Sept 2001 or later	68	46,512		30.0	(17.6, 46.2)	* 4.7	(1.7, 12.5)	65.3	(49.1, 78.5)	
	Missing	114	67,347	1%							
Drug and alcohol use problems											0.0122
	No	9,244	5,017,336		39.2	(37.8, 40.7)	19.1	(18.0, 20.3)	41.7	(40.2, 43.2)	
	Yes	156	131,062		31.5	(22.1, 42.7)	11.3	(6.7, 18.6)	57.1	(46.1, 67.5)	
	Missing	56	31,794	1%							
Tobacco Use											<0.0001
	No	8,058	4,193,118		41.0	(39.5, 42.6)	19.3	(18.1, 20.6)	39.7	(38.1, 41.3)	
	Yes	1,226	904,135		29.5	(25.8, 33.4)	17.2	(14.4, 20.4)	53.3	(49.3, 57.4)	
	Missing	172	82,938	2%							
Self-reported Health status											0.0325
	Excellent	2,018	1,043,283		43.0	(40.0, 46.1)	18.2	(16.0, 20.7)	38.8	(35.7, 42.0)	
	Very Good	3,637	1,902,234		37.2	(34.9, 39.4)	21.0	(19.1, 23.1)	41.8	(39.5, 44.2)	
	Good	2,621	1,506,516		39.1	(36.4, 41.9)	17.5	(15.5, 19.7)	43.4	(40.6, 46.2)	
	Fair	940	573,417		36.7	(32.4, 41.3)	18.5	(15.4, 22.1)	44.7	(40.1, 49.4)	
	Poor	225	147,476		41.2	(32.0, 50.9)	13.8	(8.1, 22.5)	45.0	(35.7, 54.7)	

		Unweighted N[1]	Weighted N[2]	% missing [3]	Harmful		About equal		Beneficial		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
	Missing	15	7,266	0%							
Region											0.0003
	Western Massachusetts	2,734	654,995		39.7	(37.3, 42.2)	17.4	(15.5, 19.4)	42.9	(40.3, 45.6)	
	Greater Boston	5,238	3,525,959		40.2	(38.4, 42.0)	19.8	(18.3, 21.3)	40.0	(38.2, 41.9)	
	South Eastern Massachusetts	1,484	999,237		34.2	(30.9, 37.6)	17.0	(14.5, 19.7)	48.8	(45.3, 52.4)	
	Missing	0	0	0%							
County											<0.0001
	Barnstable/Dukes/Nantucket	376	203,523		41.2	(34.5, 48.4)	19.2	(13.6, 26.5)	39.5	(32.8, 46.7)	
	BERKSHIRE	485	109,301		38.7	(33.1, 44.7)	18.4	(14.3, 23.3)	42.9	(37.0, 49.0)	
	BRISTOL	572	453,235		29.5	(24.7, 34.9)	14.4	(11.2, 18.4)	56.0	(50.5, 61.4)	
	ESSEX	859	572,514		38.4	(34.1, 42.9)	19.3	(15.6, 23.5)	42.3	(37.8, 47.0)	
	FRANKLIN	309	58,758		43.8	(37.0, 50.9)	14.1	(10.2, 19.2)	42.1	(35.0, 49.6)	
	HAMPDEN	1,319	360,439		37.6	(34.2, 41.2)	15.8	(13.4, 18.5)	46.6	(42.8, 50.3)	
	HAMPSHIRE	621	126,498		44.7	(39.5, 50.0)	22.4	(17.5, 28.2)	32.9	(28.1, 38.2)	
	MIDDLESEX	1,930	1,149,205		41.8	(38.9, 44.8)	20.1	(17.9, 22.4)	38.1	(35.2, 41.2)	
	NORFOLK	814	499,473		38.4	(34.1, 42.8)	22.3	(18.4, 26.8)	39.3	(34.8, 44.0)	
	PLYMOUTH	536	342,480		36.2	(30.8, 41.9)	19.0	(15.0, 23.8)	44.8	(39.2, 50.6)	
	SUFFOLK	642	581,498		43.0	(38.0, 48.2)	19.6	(16.1, 23.6)	37.4	(32.6, 42.6)	
	WORCESTER	993	723,270		38.1	(33.9, 42.4)	18.2	(15.1, 21.9)	43.7	(39.4, 48.1)	
	Missing	0	0	0%							

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] The % missing is calculated using the weighted N

[4] Percentages and 95% CI are calculated using the weighted N

[5] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 39 Perceived impact of gambling on own community

		Unweighted N[1]	Weighted N[2]	% missing[3]	Very harmful		Somewhat harmful		Neither beneficial nor harmful		Somewhat beneficial		Very beneficial		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
Overall		9450	5,170,392		18.7	(17.6, 19.8)	24.3	(23.0, 25.5)	26.0	(24.7, 27.3)	23.7	(22.5, 25.0)	7.4	(6.6, 8.3)	
	Missing	308	69,937	1%											
Gender															<0.0001
	Male	3764	2,417,019		16.6	(15.0, 18.3)	22.9	(21.0, 24.9)	25.2	(23.2, 27.3)	26.7	(24.6, 29.0)	8.6	(7.3, 10.2)	
	Female	5579	2,690,285		20.4	(19.0, 21.9)	25.4	(23.8, 27.0)	26.6	(25.0, 28.3)	21.2	(19.8, 22.7)	6.3	(5.4, 7.4)	
	Missing	107	66,514	1%											
Age															<0.0001
	18-20	99	210,531		* 10.0	(5.1, 18.5)	28.4	(19.0, 40.1)	33.9	(23.9, 45.6)	22.8	(14.5, 34.0)	* 4.9	(1.8, 12.6)	
	21-24	242	321,289		19.6	(13.7, 27.3)	20.0	(15.0, 26.2)	31.6	(25.0, 38.9)	22.7	(16.6, 30.2)	6.1	(3.6, 10.1)	
	25-34	997	907,325		13.3	(10.9, 16.1)	26.2	(22.8, 29.8)	29.1	(25.7, 32.9)	23.1	(19.8, 26.7)	8.3	(6.1, 11.2)	
	35-54	2865	1,681,309		18.7	(16.8, 20.7)	23.8	(21.7, 26.1)	26.0	(23.7, 28.4)	23.6	(21.4, 25.9)	7.9	(6.4, 9.8)	
	55-64	1976	866,848		19.9	(17.8, 22.2)	24.4	(21.9, 27.2)	22.2	(19.9, 24.7)	26.5	(23.9, 29.3)	6.9	(5.4, 8.7)	
	65-79	2059	647,045		21.7	(19.6, 24.1)	22.4	(20.3, 24.7)	21.6	(19.4, 24.0)	25.0	(22.6, 27.5)	9.2	(7.6, 11.2)	
	80+	750	262,369		20.2	(16.9, 24.0)	22.3	(18.9, 26.0)	28.3	(24.3, 32.7)	23.3	(19.7, 27.3)	5.9	(3.6, 9.4)	
	Missing	462	277,100	6%											
Ethnicity															<0.0001
	Hispanic	478	429,022		21.3	(16.6, 26.9)	22.9	(18.2, 28.5)	23.9	(19.2, 29.4)	22.0	(17.3, 27.6)	9.8	(6.4, 14.8)	
	Black	362	343,836		13.7	(9.5, 19.2)	19.1	(13.9, 25.6)	26.0	(20.4, 32.6)	23.8	(18.5, 30.1)	17.5	(12.5, 23.8)	
	White	7853	3,882,613		17.6	(16.5, 18.8)	24.2	(22.9, 25.6)	26.4	(25.0, 27.8)	25.1	(23.6, 26.5)	6.7	(5.9, 7.6)	
	Asian	362	279,759		22.9	(17.7, 29.2)	33.1	(26.5, 40.5)	27.8	(21.7, 34.9)	14.1	(9.5, 20.6)	* 2.0	(0.7, 5.5)	
	Other	78	46,887		34.5	(21.5, 50.2)	* 16.7	(8.5, 30.3)	23.6	(12.7, 39.5)	* 12.7	(6.3, 24.0)	* 12.6	(4.3, 31.2)	
	Missing	317	191,699	4%		.		.		.		.		.	
Education															<0.0001
	Less than high school	392	448,988		18.7	(14.0, 24.5)	22.8	(17.2, 29.4)	24.2	(18.7, 30.6)	23.1	(18.3, 28.7)	11.2	(7.8, 16.0)	
	HS or GED	1292	1,327,675		14.6	(12.2, 17.4)	17.8	(15.1, 20.9)	26.5	(23.4, 29.9)	30.9	(27.6, 34.4)	10.2	(8.2, 12.7)	
	Some college	2509	1,163,557		13.6	(12.0, 15.5)	21.9	(19.9, 24.1)	28.1	(25.6, 30.6)	27.0	(24.7, 29.3)	9.4	(7.9, 11.2)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	Very harmful		Somewhat harmful		Neither beneficial nor harmful		Somewhat beneficial			Very beneficial			p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]		%[4]	95% CI[4]		
	BA	2440	1,318,681		21.4	(19.5, 23.4)	28.5	(26.2, 30.9)	24.6	(22.5, 26.9)	20.8	(18.8, 22.9)		4.7	(3.6, 6.1)		
	MS or professional degree	2089	634,874		26.3	(24.1, 28.6)	30.8	(28.5, 33.3)	25.2	(23.0, 27.4)	14.8	(13.1, 16.8)		2.8	(2.1, 3.8)		
	PHD	552	171,669		29.4	(25.1, 34.1)	33.6	(29.1, 38.4)	28.2	(23.7, 33.1)	7.7	(5.4, 10.8)	*	1.2	(0.5, 2.5)		
	Missing	176	108,372	2%		.		.		.		.			.		
Employment																	<0.0001
	Employed	5440	3,067,729		18.0	(16.6, 19.5)	25.4	(23.8, 27.1)	26.1	(24.5, 27.8)	23.7	(22.1, 25.4)		6.7	(5.7, 7.9)		
	Unemployed	353	270,468		14.7	(11.0, 19.4)	15.4	(11.0, 21.3)	25.7	(19.4, 33.1)	31.0	(24.3, 38.6)		13.2	(8.5, 19.9)		
	Homemaker	353	210,677		26.0	(20.6, 32.3)	26.2	(20.4, 32.9)	22.1	(17.4, 27.7)	19.4	(13.9, 26.4)	*	6.2	(3.1, 12.0)		
	Student	325	382,683		15.1	(10.8, 20.8)	26.5	(20.7, 33.2)	34.2	(27.8, 41.2)	20.4	(15.1, 27.0)	*	3.8	(1.9, 7.4)		
	Retired	2429	841,117		21.3	(19.3, 23.5)	21.8	(19.9, 23.9)	24.1	(21.9, 26.4)	25.2	(23.0, 27.5)		7.6	(6.2, 9.3)		
	Disabled	360	286,902		17.6	(12.8, 23.7)	22.5	(16.9, 29.2)	23.0	(17.2, 30.1)	21.8	(16.6, 28.1)		15.1	(10.6, 21.1)		
	Missing	190	114,241	2%		.		.		.		.			.		
Income																	<0.0001
	Less than $15,000	833	657,745		16.3	(13.2, 20.0)	18.8	(15.4, 22.7)	24.0	(20.3, 28.1)	27.1	(22.9, 31.7)		13.9	(10.7, 17.9)		
	$15,000 - <$30,000	1018	638,744		15.0	(12.1, 18.4)	19.7	(16.4, 23.4)	28.8	(24.6, 33.4)	27.6	(23.8, 31.7)		9.0	(6.8, 11.8)		
	$30,000 - <$50,000	1310	669,417		19.4	(16.3, 23.0)	23.2	(19.9, 26.8)	23.7	(20.4, 27.5)	26.4	(23.0, 30.1)		7.3	(5.4, 9.8)		
	$50,000 - <$100,000	2465	1,240,797		15.5	(13.8, 17.5)	23.7	(21.3, 26.3)	26.7	(24.2, 29.4)	26.1	(23.6, 28.9)		7.9	(6.2, 9.9)		
	$100,000 - <$150,000	1365	716,736		17.8	(15.1, 20.8)	27.7	(24.4, 31.2)	25.9	(22.7, 29.4)	22.5	(19.3, 26.0)		6.1	(4.3, 8.6)		
	$150,000 or more	1122	521,998		25.5	(22.5, 28.8)	29.1	(25.8, 32.6)	26.8	(23.3, 30.6)	16.0	(13.2, 19.3)		2.6	(1.7, 4.2)		
	Missing	1337	728,379	16%		.		.		.		.			.		
Marital status																	<0.0001
	Never married	1569	1,285,082		15.5	(13.1, 18.3)	23.1	(20.2, 26.3)	29.9	(26.6, 33.3)	23.5	(20.5, 26.9)		8.0	(6.1, 10.4)		
	Living with partner	628	436,346		11.7	(9.0, 15.1)	22.9	(18.7, 27.7)	25.1	(21.0, 29.7)	30.0	(25.3, 35.2)		10.3	(7.4, 14.0)		

		Unweighted N[1]	Weighted N[2]	% missing[3]	Very harmful		Somewhat harmful		Neither beneficial nor harmful		Somewhat beneficial		Very beneficial		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
	Married	4995	2,476,764		21.3	(19.8, 22.9)	25.9	(24.3, 27.7)	24.6	(23.0, 26.3)	22.0	(20.4, 23.6)	6.2	(5.2, 7.4)	
	Divorced or Separated	1177	525,680		17.0	(14.3, 20.0)	20.5	(17.6, 23.7)	24.4	(20.9, 28.2)	27.3	(23.6, 31.2)	10.9	(8.4, 14.1)	
	Widowed	854	317,966		18.1	(14.9, 21.7)	22.5	(19.2, 26.3)	27.8	(23.9, 31.9)	25.6	(21.8, 29.9)	6.0	(3.9, 9.1)	
	Missing	227	131,978	3%		.		.		.		.		.	
Military status															0.0360
	No military	8424	4,740,709		18.6	(17.5, 19.8)	24.6	(23.3, 26.0)	26.2	(24.8, 27.6)	23.5	(22.2, 24.9)	7.1	(6.2, 8.0)	
	Yes, served prior to Sept 2001	847	317,148		17.6	(14.7, 21.0)	20.1	(16.9, 23.7)	24.2	(20.3, 28.5)	27.5	(23.6, 31.7)	10.7	(7.6, 14.8)	
	Yes, served Sept 2001 or later	68	46,512		* 19.6	(9.9, 35.1)	* 13.6	(5.6, 29.5)	* 23.2	(10.5, 43.6)	25.3	(14.3, 40.8)	* 18.3	(9.5, 32.2)	
	Missing	111	69,448	1%		.		.		.		.		.	
Drug and alcohol use															<0.0001
	No	9212	4,997,174		19.0	(17.9, 20.1)	24.4	(23.2, 25.7)	25.7	(24.4, 27.1)	23.7	(22.4, 25.0)	7.2	(6.4, 8.1)	
	Yes	156	130,766		6.5	(3.9, 10.8)	20.2	(12.6, 30.8)	33.9	(24.2, 45.1)	27.0	(17.8, 38.8)	12.4	(7.7, 19.3)	
	Missing	82	45,877	1%		.		.		.		.		.	
Tobacco Use															<0.0001
	No	8055	4,185,537		20.4	(19.2, 21.7)	24.5	(23.3, 25.9)	26.2	(24.8, 27.6)	22.2	(20.9, 23.6)	6.6	(5.8, 7.6)	
	Yes	1223	901,561		9.9	(8.0, 12.2)	23.3	(19.9, 27.2)	25.1	(21.8, 28.7)	30.9	(27.2, 34.8)	10.8	(8.5, 13.7)	
	Missing	172	86,719	2%		.		.		.		.		.	
Self-reported Health status															<0.0001
	Excellent	2017	1,042,784		22.0	(19.6, 24.6)	24.5	(22.0, 27.1)	28.8	(26.0, 31.8)	19.5	(17.0, 22.2)	5.2	(3.8, 7.2)	
	Very Good	3634	1,898,022		18.3	(16.7, 20.1)	24.3	(22.4, 26.4)	27.2	(25.1, 29.4)	24.4	(22.4, 26.6)	5.8	(4.7, 7.1)	
	Good	2622	1,502,884		17.3	(15.3, 19.4)	24.5	(22.2, 27.1)	24.0	(21.7, 26.5)	25.6	(23.2, 28.2)	8.6	(7.0, 10.4)	
	Fair	933	570,559		16.6	(13.5, 20.1)	22.8	(19.1, 27.0)	23.6	(19.9, 27.7)	26.2	(22.3, 30.5)	10.9	(8.0, 14.5)	
	Poor	229	148,877		21.2	(14.7, 29.5)	24.0	(16.7, 33.1)	20.0	(12.6, 30.3)	16.8	(11.6, 23.8)	18.0	(11.6, 26.8)	
	Missing	15	10,691	0%		.		.		.		.		.	

		Unweighted N[1]	Weighted N[2]	% missing[3]	Very harmful		Somewhat harmful		Neither beneficial nor harmful		Somewhat beneficial		Very beneficial		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
Region															0.0009
	Western Massachusetts	2735	657,867		17.6	(15.9, 19.5)	22.0	(20.1, 24.1)	25.2	(23.0, 27.6)	27.2	(24.8, 29.8)	7.9	(6.5, 9.5)	
	Greater Boston	5236	3,517,626		19.7	(18.3, 21.1)	25.2	(23.7, 26.9)	26.0	(24.4, 27.6)	22.2	(20.6, 23.8)	7.0	(5.9, 8.1)	
	South Eastern Massachusetts	1479	994,898		15.7	(13.5, 18.1)	22.4	(19.5, 25.5)	26.4	(23.3, 29.8)	27.0	(24.0, 30.2)	8.6	(6.8, 10.8)	
	Missing	0	3,425	0%		.		.		.		.		.	
County															<0.0001
	Barnstable/Dukes/Nantucket	377	203,142		26.6	(21.1, 33.0)	26.1	(19.9, 33.4)	31.0	(24.5, 38.4)	13.6	(9.7, 18.7)	* 2.7	(1.1, 6.1)	
	BERKSHIRE	489	112,267		17.4	(13.5, 22.1)	20.8	(16.4, 26.0)	26.8	(21.9, 32.4)	27.4	(21.9, 33.7)	7.6	(4.6, 12.4)	
	BRISTOL	573	453,019		11.6	(8.8, 15.0)	18.2	(14.2, 22.9)	22.4	(18.0, 27.5)	35.5	(30.3, 40.9)	12.4	(9.3, 16.3)	
	ESSEX	860	572,734		20.9	(17.5, 24.7)	23.4	(19.7, 27.5)	22.3	(18.9, 26.2)	24.5	(20.6, 29.0)	8.9	(6.2, 12.5)	
	FRANKLIN	307	58,622		22.8	(17.6, 29.0)	19.7	(15.3, 24.9)	30.4	(23.9, 37.8)	19.1	(14.1, 25.4)	* 8.0	(4.2, 14.6)	
	HAMPDEN	1319	361,594		16.4	(14.0, 19.1)	20.7	(18.1, 23.6)	21.8	(18.8, 25.0)	31.9	(28.3, 35.7)	9.3	(7.3, 11.8)	
	HAMPSHIRE	620	125,384		19.0	(15.4, 23.2)	28.1	(23.6, 33.0)	31.4	(26.2, 37.1)	17.4	(13.7, 21.7)	4.2	(2.7, 6.4)	
	MIDDLESEX	1925	1,147,957		21.0	(18.8, 23.5)	26.0	(23.5, 28.6)	27.6	(25.0, 30.4)	20.3	(17.9, 23.0)	5.1	(3.8, 6.7)	
	NORFOLK	809	494,386		17.0	(14.3, 20.1)	32.3	(27.9, 37.1)	27.8	(23.7, 32.3)	18.0	(14.9, 21.7)	4.8	(3.0, 7.7)	
	PLYMOUTH	529	338,737		14.6	(11.2, 18.9)	25.7	(21.0, 31.0)	29.1	(23.9, 34.8)	23.6	(19.3, 28.6)	7.0	(4.4, 11.0)	
	SUFFOLK	645	583,494		18.9	(15.4, 23.0)	26.8	(22.5, 31.7)	27.5	(23.1, 32.3)	18.7	(15.1, 23.0)	8.1	(5.5, 11.7)	
	WORCESTER	997	719,055		19.1	(15.8, 22.8)	19.3	(16.4, 22.5)	23.8	(20.3, 27.7)	28.8	(25.0, 33.0)	9.0	(6.5, 12.3)	
	Missing	0	3,425	0%		.		.		.		.		.	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] The % missing is calculated using the weighted N

[4] Percentages and 95% CI are calculated using the weighted N

[5] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 40 Perceived impact of gambling on own community (collapsed into 3 groups)

					Harmful		About equal		Beneficial		
		Unweighted N[1]	Weighted N[2]	% missing[3]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	p-value[5]
Overall		9,450	5,170,392		42.9	(41.5, 44.4)	26.0	(24.7, 27.3)	31.1	(29.7, 32.5)	
	Missing	308	69,937	1%							
Gender											<0.0001
	Male	3,764	2,417,019		39.4	(37.2, 41.8)	25.2	(23.2, 27.3)	35.4	(33.1, 37.7)	
	Female	5,579	2,690,285		45.8	(44.0, 47.6)	26.6	(25.0, 28.3)	27.5	(25.9, 29.2)	
	Missing	107	66,514	1%							
Age											0.0049
	18-20	99	210,531		38.3	(27.8, 50.1)	33.9	(23.9, 45.6)	27.7	(18.6, 39.2)	
	21-24	242	321,289		39.6	(32.4, 47.4)	31.6	(25.0, 38.9)	28.8	(22.2, 36.4)	
	25-34	997	907,325		39.4	(35.6, 43.4)	29.1	(25.7, 32.9)	31.4	(27.7, 35.4)	
	35-54	2,865	1,681,309		42.5	(40.0, 45.1)	26.0	(23.7, 28.4)	31.5	(29.0, 34.1)	
	55-64	1,976	866,848		44.4	(41.4, 47.3)	22.2	(19.9, 24.7)	33.4	(30.6, 36.4)	
	65-79	2,059	647,045		44.2	(41.4, 46.9)	21.6	(19.4, 24.0)	34.2	(31.5, 37.0)	
	80+	750	262,369		42.5	(38.1, 47.0)	28.3	(24.3, 32.7)	29.2	(25.1, 33.7)	
	Missing	462	277,100	6%							
Ethnicity											<0.0001
	Hispanic	478	429,022		44.2	(38.1, 50.4)	23.9	(19.2, 29.4)	31.9	(26.3, 38.1)	
	Black	362	343,836		32.7	(26.4, 39.8)	26.0	(20.4, 32.6)	41.3	(34.5, 48.3)	
	White	7,853	3,882,613		41.9	(40.3, 43.4)	26.4	(25.0, 27.8)	31.7	(30.2, 33.3)	
	Asian	362	279,759		56.1	(48.6, 63.2)	27.8	(21.7, 34.9)	16.1	(11.2, 22.7)	
	Other	78	46,887		51.2	(36.0, 66.2)	23.6	(12.7, 39.5)	25.2	(13.8, 41.5)	
	Missing	317	191,699	4%							
Education											<0.0001
	Less than high school	392	448,988		41.5	(34.9, 48.4)	24.2	(18.7, 30.6)	34.3	(28.5, 40.7)	
	HS or GED	1,292	1,327,675		32.4	(29.1, 36.0)	26.5	(23.4, 29.9)	41.1	(37.5, 44.8)	
	Some college	2,509	1,163,557		35.6	(33.1, 38.1)	28.1	(25.6, 30.6)	36.4	(33.9, 39.0)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	Harmful		About equal		Beneficial		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
	BA	2,440	1,318,681		49.9	(47.4, 52.5)	24.6	(22.5, 26.9)	25.4	(23.2, 27.8)	
	MS or professional degree	2,089	634,874		57.1	(54.6, 59.7)	25.2	(23.0, 27.4)	17.7	(15.8, 19.8)	
	PHD	552	171,669		63.0	(57.9, 67.8)	28.2	(23.7, 33.1)	8.8	(6.4, 12.1)	
	Missing	176	108,372	2%							
Employment											0.0002
	Employed	5,440	3,067,729		43.4	(41.6, 45.3)	26.1	(24.5, 27.8)	30.5	(28.7, 32.3)	
	Unemployed	353	270,468		30.1	(24.2, 36.8)	25.7	(19.4, 33.1)	44.2	(36.7, 51.9)	
	Homemaker	353	210,677		52.3	(45.2, 59.2)	22.1	(17.4, 27.7)	25.6	(19.4, 33.1)	
	Student	325	382,683		41.6	(34.9, 48.7)	34.2	(27.8, 41.2)	24.2	(18.5, 31.0)	
	Retired	2,429	841,117		43.1	(40.6, 45.7)	24.1	(21.9, 26.4)	32.8	(30.3, 35.3)	
	Disabled	360	286,902		40.1	(33.2, 47.4)	23.0	(17.2, 30.1)	36.9	(30.3, 44.1)	
	Missing	190	114,241	2%							
Income											<0.0001
	Less than $15,000	833	657,745		35.1	(30.7, 39.7)	24.0	(20.3, 28.1)	40.9	(36.2, 45.8)	
	$15,000 - <$30,000	1,018	638,744		34.7	(30.5, 39.1)	28.8	(24.6, 33.4)	36.5	(32.3, 40.9)	
	$30,000 - <$50,000	1,310	669,417		42.6	(38.5, 46.7)	23.7	(20.4, 27.5)	33.7	(29.9, 37.6)	
	$50,000 - <$100,000	2,465	1,240,797		39.3	(36.5, 42.1)	26.7	(24.2, 29.4)	34.0	(31.2, 36.9)	
	$100,000 - <$150,000	1,365	716,736		45.5	(41.7, 49.3)	25.9	(22.7, 29.4)	28.6	(25.1, 32.4)	
	$150,000 or more	1,122	521,998		54.6	(50.6, 58.5)	26.8	(23.3, 30.6)	18.6	(15.6, 22.1)	
	Missing	1,337	728,379	16%							
Marital status											<0.0001
	Never married	1,569	1,285,082		38.6	(35.1, 42.2)	29.9	(26.6, 33.3)	31.5	(28.1, 35.1)	
	Living with partner	628	436,346		34.6	(29.9, 39.7)	25.1	(21.0, 29.7)	40.3	(35.2, 45.6)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	Harmful %[4]	Harmful 95% CI[4]	About equal %[4]	About equal 95% CI[4]	Beneficial %[4]	Beneficial 95% CI[4]	p-value[5]
	Married	4,995	2,476,764		47.3	(45.3, 49.2)	24.6	(23.0, 26.3)	28.1	(26.4, 30.0)	
	Divorced or Separated	1,177	525,680		37.4	(33.7, 41.3)	24.4	(20.9, 28.2)	38.2	(34.1, 42.4)	
	Widowed	854	317,966		40.6	(36.3, 45.0)	27.8	(23.9, 31.9)	31.6	(27.4, 36.2)	
	Missing	227	131,978	3%							
Military status											0.0161
	No military	8,424	4,740,709		43.2	(41.7, 44.8)	26.2	(24.8, 27.6)	30.6	(29.1, 32.1)	
	Yes, served prior to Sept	847	317,148		37.7	(33.5, 42.0)	24.2	(20.3, 28.5)	38.2	(33.7, 42.8)	
	Yes, served Sept 2001 or later	68	46,512		33.3	(19.9, 49.9)	* 23.2	(10.5, 43.6)	43.5	(28.6, 59.7)	
	Missing	111	69,448	1%							
Drug and alcohol use problem											0.0073
	No	9,212	4,997,174		43.4	(42.0, 44.9)	25.7	(24.4, 27.1)	30.8	(29.5, 32.3)	
	Yes	156	130,766		26.8	(18.4, 37.1)	33.9	(24.2, 45.1)	39.4	(29.2, 50.6)	
	Missing	82	45,877	1%							
Tobacco Use											<0.0001
	No	8,055	4,185,537		45.0	(43.4, 46.5)	26.2	(24.8, 27.6)	28.9	(27.4, 30.4)	
	Yes	1,223	901,561		33.2	(29.5, 37.2)	25.1	(21.8, 28.7)	41.7	(37.7, 45.7)	
	Missing	172	86,719	2%							
Self-reported Health status											<0.0001
	Excellent	2,017	1,042,784		46.5	(43.4, 49.6)	28.8	(26.0, 31.8)	24.7	(22.0, 27.7)	
	Very Good	3,634	1,898,022		42.6	(40.3, 44.9)	27.2	(25.1, 29.4)	30.2	(28.0, 32.5)	
	Good	2,622	1,502,884		41.8	(39.1, 44.6)	24.0	(21.7, 26.5)	34.2	(31.5, 37.0)	
	Fair	933	570,559		39.4	(35.0, 44.0)	23.6	(19.9, 27.7)	37.0	(32.6, 41.7)	
	Poor	229	148,877		45.1	(35.9, 54.7)	20.0	(12.6, 30.3)	34.8	(26.6, 44.1)	
	Missing	15	10,691	0%							
Region											<0.0001

		Unweighted N[1]	Weighted N[2]	% missing[3]	Harmful		About equal		Beneficial		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
	Western Massachusetts	2,735	657,867		39.7	(37.2, 42.1)	25.2	(23.0, 27.6)	35.1	(32.6, 37.8)	
	Greater Boston	5,236	3,517,626		44.9	(43.1, 46.8)	26.0	(24.4, 27.6)	29.1	(27.4, 30.9)	
	South Eastern Massachusetts	1,479	994,898		38.1	(34.8, 41.5)	26.4	(23.3, 29.8)	35.5	(32.2, 39.0)	
	Missing	0	3,425	0%							
County											<0.0001
	Barnstable/Dukes/Nantucket	377	203,142		52.7	(45.5, 59.9)	31.0	(24.5, 38.4)	16.2	(11.9, 21.7)	
	BERKSHIRE	489	112,267		38.2	(32.6, 44.1)	26.8	(21.9, 32.4)	35.0	(29.0, 41.5)	
	BRISTOL	573	453,019		29.8	(25.1, 34.9)	22.4	(18.0, 27.5)	47.9	(42.4, 53.4)	
	ESSEX	860	572,734		44.3	(39.8, 48.9)	22.3	(18.9, 26.2)	33.4	(28.9, 38.2)	
	FRANKLIN	307	58,622		42.5	(35.8, 49.5)	30.4	(23.9, 37.8)	27.1	(20.8, 34.4)	
	HAMPDEN	1,319	361,594		37.1	(33.7, 40.6)	21.8	(18.8, 25.0)	41.2	(37.5, 45.0)	
	HAMPSHIRE	620	125,384		47.1	(41.8, 52.4)	31.4	(26.2, 37.1)	21.5	(17.6, 26.1)	
	MIDDLESEX	1,925	1,147,957		47.0	(44.0, 50.0)	27.6	(25.0, 30.4)	25.4	(22.7, 28.3)	
	NORFOLK	809	494,386		49.3	(44.7, 54.0)	27.8	(23.7, 32.3)	22.9	(19.3, 27.0)	
	PLYMOUTH	529	338,737		40.3	(34.9, 46.0)	29.1	(23.9, 34.8)	30.6	(25.6, 36.0)	
	SUFFOLK	645	583,494		45.7	(40.7, 50.8)	27.5	(23.1, 32.3)	26.8	(22.5, 31.7)	
	WORCESTER	997	719,055		38.4	(34.3, 42.6)	23.8	(20.3, 27.7)	37.8	(33.6, 42.2)	
	Missing	0	3,425	0%							

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] The % missing is calculated using the weighted N
[4] Percentages and 95% CI are calculated using the weighted N
[5] P-value from chi-square test for differences across groups
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 41 Attitudes about gambling as a recreational activity

		Unweighted N[1]	Weighted N[2]	Not at all important		Not very Important		Somewhat Important		Very Important		p-value[4]
				%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	
Overall		7216	3,958,277	64.9	(63.2, 66.5)	26.1	(24.6, 27.7)	7.9	(6.9, 8.9)	1.1	(0.8, 1.6)	
Gender												<0.0001
	Male	2985	1,939,611	57.9	(55.2, 60.6)	30.0	(27.5, 32.6)	10.4	(8.8, 12.4)	1.7	(1.0, 2.6)	
	Female	4163	1,980,222	71.4	(69.4, 73.3)	22.6	(20.8, 24.4)	5.5	(4.6, 6.4)	0.6	(0.3, 1.1)	
Age												<0.0001
	18-20	54	118,046	65.9	(50.2, 78.8)	* 17.2	(8.5, 31.7)	* 16.8	(8.1, 31.7)	0.0	NA	
	21-24	150	197,591	68.8	(58.7, 77.4)	29.0	(20.5, 39.2)	* 1.3	(0.4, 4.3)	* 0.8	(0.1, 5.5)	
	25-34	735	688,696	62.4	(57.7, 66.9)	28.1	(24.0, 32.5)	7.8	(5.4, 11.3)	* 1.7	(0.7, 4.2)	
	35-54	2308	1,382,557	63.1	(60.1, 66.1)	27.8	(25.1, 30.7)	8.0	(6.4, 10.0)	* 1.1	(0.6, 2.0)	
	55-64	1575	709,172	68.0	(64.8, 71.1)	23.4	(20.7, 26.4)	7.6	(5.9, 9.6)	* 1.0	(0.4, 2.3)	
	65-79	1587	505,756	64.6	(61.6, 67.6)	25.0	(22.3, 27.9)	8.7	(7.1, 10.7)	1.6	(1.0, 2.6)	
	80+	493	177,514	64.2	(58.4, 69.7)	24.5	(19.4, 30.4)	10.2	(7.3, 14.1)	* 1.1	(0.4, 3.1)	
Ethnicity												0.0384
	Hispanic	330	299,477	52.1	(44.5, 59.6)	30.1	(23.5, 37.6)	13.8	(8.7, 21.4)	* 4.0	(1.7, 9.2)	
	Black	265	250,347	55.0	(46.6, 63.2)	30.9	(23.7, 39.3)	11.6	(6.9, 18.8)	* 2.5	(0.9, 6.3)	
	White	6133	3,075,611	66.7	(64.9, 68.4)	25.3	(23.7, 27.0)	7.3	(6.3, 8.3)	0.7	(0.5, 1.1)	
	Asian	208	172,111	63.8	(53.8, 72.7)	29.0	(20.8, 39.0)	* 6.4	(3.1, 12.5)	* 0.8	(0.2, 3.4)	
	Other	53	27,988	57.1	(36.3, 75.7)	* 24.9	(10.6, 48.2)	* 7.4	(3.0, 16.9)	* 10.7	(1.6, 46.7)	
Education												<0.0001
	Less than high school	284	325,569	54.4	(46.4, 62.2)	28.6	(22.0, 36.4)	15.0	(10.1, 21.6)	* 2.0	(0.5, 7.5)	
	HS or GED	1030	1,043,937	58.5	(54.3, 62.6)	31.0	(27.3, 35.1)	9.1	(6.9, 12.0)	* 1.3	(0.6, 2.8)	
	Some college	2023	918,293	63.9	(61.0, 66.7)	27.0	(24.5, 29.7)	7.9	(6.5, 9.6)	* 1.2	(0.6, 2.2)	
	BA	1897	1,033,122	68.7	(65.9, 71.4)	24.3	(21.9, 27.0)	6.1	(4.8, 7.8)	* 0.8	(0.4, 1.7)	
	MS or professional degree	1535	469,191	76.3	(73.6, 78.8)	18.4	(16.1, 20.9)	4.5	(3.3, 6.1)	* 0.8	(0.4, 1.5)	
	PHD	335	104,535	77.1	(71.0, 82.2)	17.1	(12.7, 22.7)	5.8	(3.3, 10.0)	0.0	NA	
Employment												<0.0001
	Employed	4320	2,458,002	64.8	(62.6, 66.9)	26.6	(24.6, 28.6)	7.4	(6.2, 8.7)	1.3	(0.8, 2.1)	

		Unweighted N[1]	Weighted N[2]	Not at all important %[3]	Not at all important 95% CI[3]	Not very Important %[3]	Not very Important 95% CI[3]	Somewhat Important %[3]	Somewhat Important 95% CI[3]	Very Important %[3]	Very Important 95% CI[3]	p-value[4]
	Unemployed	282	229,943	56.6	(47.7, 65.0)	27.9	(20.7, 36.5)	15.1	(9.2, 23.9)	* 0.4	(0.1, 2.5)	
	Homemaker	244	144,778	81.9	(75.1, 87.2)	16.4	(11.3, 23.1)	* 1.7	(0.6, 4.4)	0.0	NA	
	Student	196	225,018	67.9	(58.9, 75.7)	23.8	(17.0, 32.3)	* 8.3	(4.5, 14.7)	0.0	NA	
	Retired	1797	632,286	64.9	(61.9, 67.8)	25.6	(23.0, 28.4)	8.4	(6.8, 10.3)	1.1	(0.6, 1.9)	
	Disabled	249	198,038	58.6	(49.6, 67.1)	30.8	(22.9, 40.0)	* 8.7	(4.7, 15.6)	* 1.8	(0.8, 4.0)	
Income												0.0514
	Less than $15,000	577	452,389	53.5	(47.5, 59.4)	32.6	(27.0, 38.8)	12.5	(8.7, 17.7)	* 1.4	(0.5, 3.5)	
	$15,000 - <$30,000	756	478,221	63.5	(58.3, 68.4)	26.6	(22.3, 31.5)	8.3	(5.9, 11.5)	* 1.6	(0.7, 3.4)	
	$30,000 - <$50,000	991	509,638	64.3	(59.5, 68.7)	26.9	(22.9, 31.4)	8.3	(5.8, 11.6)	* 0.5	(0.2, 1.4)	
	$50,000 - <$100,000	1937	996,387	63.0	(59.7, 66.2)	27.5	(24.6, 30.6)	8.2	(6.5, 10.2)	* 1.3	(0.6, 3.1)	
	$100,000 -<$150,000	1131	601,589	66.6	(62.4, 70.6)	25.5	(21.8, 29.5)	6.3	(4.3, 9.0)	* 1.6	(0.7, 3.5)	
	$150,000 or more	868	416,753	69.3	(64.7, 73.6)	22.8	(19.1, 27.1)	7.0	(4.6, 10.5)	* 0.9	(0.3, 2.3)	
Marital status												0.0178
	Never married	1105	886,745	63.2	(58.8, 67.5)	27.0	(23.2, 31.2)	9.4	(6.9, 12.7)	* 0.4	(0.2, 0.9)	
	Living with partner	504	354,057	61.6	(55.6, 67.2)	30.1	(24.9, 35.9)	6.1	(4.1, 9.0)	* 2.2	(0.6, 7.4)	
	Married	3919	1,985,041	66.5	(64.3, 68.6)	25.5	(23.6, 27.6)	6.8	(5.7, 8.1)	1.2	(0.8, 1.9)	
	Divorced or Separated	917	411,259	62.1	(57.2, 66.8)	26.3	(22.1, 31.0)	9.6	(6.9, 13.4)	* 2.0	(0.9, 4.4)	
	Widowed	620	236,597	63.5	(58.3, 68.4)	24.4	(20.0, 29.3)	11.7	(8.7, 15.4)	* 0.5	(0.1, 2.2)	
Military status												0.0067
	No military	6389	3,610,666	65.2	(63.4, 66.9)	26.0	(24.4, 27.7)	7.7	(6.7, 8.8)	1.1	(0.7, 1.6)	
	Yes, served prior to Sept 2001	692	268,423	63.0	(57.9, 67.9)	26.4	(21.9, 31.4)	8.3	(6.1, 11.1)	* 2.3	(1.3, 4.3)	
	Yes, served Sept 2001 or later	55	36,534	42.1	(25.9, 60.3)	34.1	(19.1, 53.1)	* 23.8	(9.0, 49.6)	0.0	NA	
Drug and alcohol use problems												0.2203
	No	7010	3,801,763	65.3	(63.6, 66.9)	25.9	(24.4, 27.5)	7.6	(6.7, 8.7)	1.2	(0.8, 1.7)	
	Yes	141	120,955	54.7	(43.1, 65.9)	34.4	(24.3, 46.2)	* 10.4	(4.5, 22.0)	* 0.5	(0.1, 3.3)	
Tobacco Use												0.0418
	No	6052	3,134,558	66.2	(64.4, 67.9)	25.0	(23.4, 26.7)	7.7	(6.7, 8.8)	1.1	(0.7, 1.7)	

		Unweighted N[1]	Weighted N[2]	Not at all important		Not very Important		Somewhat Important		Very Important			p-value[4]
				%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]		%[3]	95% CI[3]	
	Yes	1033	763,533	59.3	(54.8, 63.6)	30.8	(26.7, 35.1)	8.5	(6.2, 11.6)	*	1.4	(0.7, 2.9)	
Self-reported Health status													0.0001
	Excellent	1518	793,136	72.1	(68.2, 75.7)	20.0	(16.9, 23.5)	6.7	(4.7, 9.6)	*	1.1	(0.4, 3.2)	
	Very Good	2798	1,474,674	66.4	(63.8, 68.9)	25.8	(23.5, 28.3)	6.8	(5.6, 8.2)		1.0	(0.6, 1.8)	
	Good	2050	1,176,076	59.5	(56.3, 62.7)	30.8	(27.8, 33.9)	8.7	(6.9, 11.0)	*	1.0	(0.5, 2.0)	
	Fair	681	407,598	61.7	(56.2, 66.9)	24.7	(20.2, 29.9)	11.3	(8.2, 15.4)	*	2.3	(1.1, 4.7)	
	Poor	158	100,671	60.2	(48.6, 70.8)	29.6	(20.1, 41.4)	* 9.5	(5.0, 17.3)	*	0.6	(0.2, 2.1)	
Region													0.1476
	Western Massachusetts	2115	512,474	65.2	(62.2, 68.0)	25.8	(23.3, 28.5)	8.6	(6.9, 10.7)	*	0.4	(0.2, 0.8)	
	Greater Boston	3908	2,648,394	64.9	(62.7, 67.0)	26.2	(24.3, 28.2)	7.7	(6.5, 9.1)		1.2	(0.8, 1.9)	
	South Eastern Massachusetts	1193	797,408	64.7	(60.8, 68.4)	26.0	(22.7, 29.7)	8.0	(6.0, 10.6)	*	1.3	(0.6, 2.8)	
County													0.0011
	Barnstable/Dukes/Nantucket	290	164,843	73.1	(65.1, 79.9)	21.1	(14.8, 29.0)	5.4	(3.0, 9.4)	*	0.4	(0.1, 2.8)	
	BERKSHIRE	397	89,673	66.5	(60.0, 72.5)	25.2	(20.0, 31.3)	7.4	(4.3, 12.5)	*	0.8	(0.3, 2.4)	
	BRISTOL	461	356,039	61.0	(54.8, 66.8)	28.9	(23.7, 34.8)	9.3	(5.9, 14.2)	*	0.8	(0.3, 2.8)	
	ESSEX	663	444,327	68.6	(63.2, 73.5)	22.7	(18.4, 27.7)	8.1	(5.4, 12.1)	*	0.6	(0.2, 2.2)	
	FRANKLIN	232	47,324	74.2	(66.9, 80.3)	19.9	(14.6, 26.6)	* 5.9	(3.2, 10.7)		0.0	NA	
	HAMPDEN	1053	286,127	61.2	(57.0, 65.3)	28.5	(24.9, 32.5)	9.8	(7.3, 13.1)	*	0.4	(0.2, 1.1)	
	HAMPSHIRE	433	89,350	71.6	(64.9, 77.5)	21.1	(15.8, 27.6)	7.3	(4.5, 11.6)		0.0	NA	
	MIDDLESEX	1392	843,575	66.4	(62.8, 69.8)	25.3	(22.1, 28.7)	7.4	(5.6, 9.7)	*	1.0	(0.5, 1.8)	
	NORFOLK	615	388,738	65.3	(59.9, 70.4)	27.7	(22.8, 33.0)	5.9	(4.0, 8.7)	*	1.1	(0.4, 2.7)	
	PLYMOUTH	442	276,526	64.4	(57.9, 70.4)	25.2	(19.9, 31.4)	8.0	(5.1, 12.4)	*	2.4	(0.8, 6.7)	
	SUFFOLK	448	401,458	61.2	(54.8, 67.1)	27.9	(22.6, 33.9)	7.7	(4.7, 12.3)	*	3.2	(1.3, 7.8)	
	WORCESTER	790	570,297	62.0	(57.1, 66.7)	28.1	(23.8, 32.7)	9.1	(6.4, 12.7)	*	0.8	(0.4, 1.8)	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

[4] P-value from chi-square test for differences across groups Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 42 Has gambling replaced other recreational activities for you in the past 5 years?

				No			Yes		
		Unweighted N[1]	Weighted N[2]	%[3]	95% CI[3]		%[3]	95% CI[3]	p-value[4]
Overall		7,200	3,936,462	98.2	(97.5, 98.7)		1.8	(1.3, 2.5)	
Gender									0.0073
	Male	2,980	1,929,509	97.4	(96.1, 98.3)		2.6	(1.7, 3.9)	
	Female	4,152	1,968,886	99.0	(98.5, 99.3)		1.0	(0.7, 1.5)	
Age									0.5098
	18-20	54	118,046	99.0	(93.1, 99.9)	*	1.0	(0.1, 6.9)	
	21-24	148	196,482	98.4	(94.6, 99.5)	*	1.6	(0.5, 5.4)	
	25-34	734	688,601	96.2	(92.9, 98.0)	*	3.8	(2.0, 7.1)	
	35-54	2,303	1,366,430	98.5	(97.3, 99.2)		1.5	(0.8, 2.7)	
	55-64	1,568	706,167	98.8	(97.9, 99.4)	*	1.2	(0.6, 2.1)	
	65-79	1,588	506,421	98.3	(97.3, 99.0)		1.7	(1.0, 2.7)	
	80+	492	177,277	99.0	(97.0, 99.7)	*	1.0	(0.3, 3.0)	
Ethnicity									0.0744
	Hispanic	325	294,270	93.8	(87.8, 97.0)	*	6.2	(3.0, 12.2)	
	Black	266	250,115	95.1	(87.0, 98.3)	*	4.9	(1.7, 13.0)	
	White	6,122	3,061,225	99.0	(98.5, 99.3)		1.0	(0.7, 1.5)	
	Asian	207	171,613	98.3	(95.1, 99.4)	*	1.7	(0.6, 4.9)	
	Other	53	27,988	89.3	(53.3, 98.4)	*	10.7	(1.6, 46.7)	
Education									<0.0001
	Less than high school	277	319,127	95.5	(89.2, 98.2)	*	4.5	(1.8, 10.8)	
	HS or GED	1,028	1,034,638	97.8	(95.8, 98.8)	*	2.2	(1.2, 4.2)	
	Some college	2,019	915,795	98.5	(97.5, 99.0)		1.5	(1.0, 2.5)	
	BA	1,893	1,030,111	98.8	(97.8, 99.3)		1.2	(0.7, 2.2)	
	MS or professional degree	1,540	470,397	99.2	(98.4, 99.6)	*	0.8	(0.4, 1.6)	
	PHD	333	103,368	100	NA		0.0	NA	
Employment									0.3175
	Employed	4,306	2,443,648	98.3	(97.3, 98.9)		1.7	(1.1, 2.7)	

		Unweighted N[1]	Weighted N[2]	No			Yes		p-value[4]
				%[3]	95% CI[3]		%[3]	95% CI[3]	
	Unemployed	281	224,674	96.5	(88.8, 98.9)	*	3.5	(1.1, 11.2)	
	Homemaker	243	144,523	97.1	(91.8, 99.0)	*	2.9	(1.0, 8.2)	
	Student	196	225,327	99.3	(97.0, 99.9)	*	0.7	(0.1, 3.0)	
	Retired	1,799	630,562	98.7	(97.9, 99.2)		1.3	(0.8, 2.1)	
	Disabled	248	198,207	97.3	(94.1, 98.8)	*	2.7	(1.2, 5.9)	
Income									0.8721
	Less than $15,000	575	445,404	97.6	(95.9, 98.6)		2.4	(1.4, 4.1)	
	$15,000 - <$30,000	755	476,116	98.6	(96.9, 99.4)	*	1.4	(0.6, 3.1)	
	$30,000 - <$50,000	986	503,019	98.3	(95.7, 99.3)	*	1.7	(0.7, 4.3)	
	$50,000 - <$100,000	1,932	991,767	97.8	(95.7, 98.9)	*	2.2	(1.1, 4.3)	
	$100,000 -<$150,000	1,130	601,984	98.5	(96.6, 99.4)	*	1.5	(0.6, 3.4)	
	$150,000 or more	867	416,735	98.2	(94.0, 99.5)	*	1.8	(0.5, 6.0)	
Marital status									0.1254
	Never married	1,103	880,685	99.0	(98.2, 99.4)	*	1.0	(0.6, 1.8)	
	Living with partner	502	353,017	95.0	(90.1, 97.5)	*	5.0	(2.5, 9.9)	
	Married	3,911	1,977,589	98.7	(97.8, 99.3)		1.3	(0.7, 2.2)	
	Divorced or Separated	917	405,820	96.9	(93.2, 98.6)	*	3.1	(1.4, 6.8)	
	Widowed	616	234,517	98.6	(95.9, 99.5)	*	1.4	(0.5, 4.1)	
Military status									0.3329
	No military	6,375	3,593,381	98.4	(97.7, 98.9)		1.6	(1.1, 2.3)	
	Yes, served prior to Sept	693	267,323	97.4	(95.4, 98.5)		2.6	(1.5, 4.6)	
	Yes, served Sept 2001 or	55	36,534	87.9	(49.8, 98.1)	*	12.1	(1.9, 50.2)	
Drug and alcohol use problems									0.1084
	No	6,995	3,784,115	98.4	(97.7, 98.8)		1.6	(1.2, 2.3)	
	Yes	142	121,902	93.6	(85.1, 97.4)	*	6.4	(2.6, 14.9)	
Tobacco Use									0.0661
	No	6,038	3,114,097	98.5	(97.8, 99.0)		1.5	(1.0, 2.2)	
	Yes	1,034	766,640	96.9	(94.9, 98.2)		3.1	(1.8, 5.1)	
									0.0104

		Unweighted N[1]	Weighted N[2]	No		Yes			p-value[4]
				%[3]	95% CI[3]		%[3]	95% CI[3]	
Self-reported Health status	Excellent	1,514	787,985	98.4	(95.4, 99.4)	*	1.6	(0.6, 4.6)	
	Very Good	2,793	1,471,150	99.1	(98.6, 99.5)		0.9	(0.5, 1.4)	
	Good	2,049	1,171,384	97.4	(95.8, 98.4)		2.6	(1.6, 4.2)	
	Fair	678	403,083	97.3	(95.4, 98.4)		2.7	(1.6, 4.6)	
	Poor	155	96,738	96.0	(88.3, 98.7)	*	4.0	(1.3, 11.7)	
Region									0.9873
	Western Massachusetts	2,110	508,212	98.3	(97.3, 98.9)		1.7	(1.1, 2.7)	
	Greater Boston	3,894	2,631,058	98.2	(97.2, 98.8)		1.8	(1.2, 2.8)	
	South Eastern	1,196	797,192	98.2	(96.7, 99.1)	*	1.8	(0.9, 3.3)	
County									0.0552
	Barnstable/Dukes/Nantucket	290	164,925	99.6	(97.4, 99.9)	*	0.4	(0.1, 2.6)	
	BERKSHIRE	398	89,999	98.9	(96.9, 99.6)	*	1.1	(0.4, 3.1)	
	BRISTOL	460	353,375	98.6	(96.3, 99.4)	*	1.4	(0.6, 3.7)	
	ESSEX	663	443,362	99.2	(98.0, 99.7)	*	0.8	(0.3, 2.0)	
	FRANKLIN	232	47,405	99.7	(97.8, 100)	*	0.3	(0.0, 2.2)	
	HAMPDEN	1,053	283,142	97.7	(96.0, 98.7)		2.3	(1.3, 4.0)	
	HAMPSHIRE	427	87,665	98.8	(96.1, 99.6)	*	1.2	(0.4, 3.9)	
	MIDDLESEX	1,388	839,691	98.6	(96.8, 99.4)	*	1.4	(0.6, 3.2)	
	NORFOLK	612	383,372	98.1	(95.2, 99.3)	*	1.9	(0.7, 4.8)	
	PLYMOUTH	446	278,892	97.0	(92.9, 98.7)	*	3.0	(1.3, 7.1)	
	SUFFOLK	442	399,087	95.3	(90.5, 97.8)	*	4.7	(2.2, 9.5)	
	WORCESTER	789	565,546	98.9	(96.2, 99.7)	*	1.1	(0.3, 3.8)	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

[4] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 43 Perceived harm or benefit of gambling

		Unweighted N[1]	Weighted N[2]	% missing[3]	Harm far outweighs benefit		Harm somewhat outweighs benefit		Benefits about equal to harm		Benefits somewhat outweigh harm		Benefits far outweigh harm		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
Overall		9,320	5,089,308		31.1	(29.8, 32.5)	28.0	(26.7, 29.4)	30.2	(28.8, 31.6)	7.2	(6.5, 8.1)	3.4	(2.8, 4.1)	
	Missing	258	151,021	3%											
Gender															0.0010
	Male	3,719	2,389,887		29.5	(27.4, 31.7)	26.8	(24.7, 28.9)	31.0	(28.8, 33.3)	8.5	(7.2, 10.0)	4.3	(3.3, 5.6)	
	Female	5,500	2,640,582		32.4	(30.7, 34.2)	29.2	(27.5, 30.9)	29.6	(27.9, 31.3)	6.1	(5.3, 7.1)	2.7	(2.1, 3.4)	
	Missing	101	88,073	2%											
Age															<0.0001
	18-20	98	209,302		23.3	(14.7, 34.9)	27.3	(18.4, 38.5)	42.8	(31.8, 54.5)	* 2.3	(0.7, 7.7)	* 4.4	(1.3, 13.4)	
	21-24	243	323,245		29.7	(23.1, 37.4)	31.4	(24.9, 38.7)	24.7	(18.8, 31.8)	11.	(7.0, 17.9)	* 2.8	(1.3, 5.7)	
	25-34	987	893,107		23.5	(20.3, 27.1)	28.5	(25.1, 32.0)	35.0	(31.2, 38.9)	9.7	(7.3, 12.8)	3.3	(1.8, 5.8)	
	35-54	2,846	1,668,093		30.3	(27.9, 32.7)	28.8	(26.5, 31.2)	31.3	(28.9, 33.8)	5.9	(4.8, 7.3)	3.7	(2.7, 5.1)	
	55-64	1,945	844,443		33.2	(30.5, 36.1)	29.0	(26.3, 31.9)	27.1	(24.6, 29.8)	6.7	(5.3, 8.3)	4.0	(2.8, 5.6)	
	65-79	2,021	632,822		36.1	(33.4, 38.8)	25.8	(23.4, 28.3)	26.1	(23.7, 28.7)	8.3	(6.8, 10.1)	3.7	(2.7, 5.2)	
	80+	729	252,033		40.2	(35.7, 44.8)	22.7	(19.3, 26.5)	28.1	(23.9, 32.6)	6.8	(4.7, 9.6)	* 2.3	(1.1, 4.5)	
	Missing	451	295,497	6%											
Ethnicity															<0.0001
	Hispanic	458	413,699		43.3	(37.2, 49.7)	19.5	(14.9, 25.0)	24.1	(19.3, 29.7)	5.7	(3.3, 9.8)	7.3	(4.2, 12.3)	
	Black	342	320,634		30.6	(24.2, 37.8)	22.6	(17.4, 28.8)	31.7	(25.2, 39.1)	11.	(6.8, 17.3)	* 4.1	(2.1, 7.5)	
	White	7,781	3,851,763		28.9	(27.5, 30.4)	29.2	(27.8, 30.7)	31.4	(29.9, 32.9)	7.5	(6.6, 8.4)	3.0	(2.4, 3.7)	
	Asian	357	275,208		37.4	(30.8, 44.6)	33.7	(27.1, 41.0)	24.6	(18.1, 32.5)	* 2.9	(1.5, 5.3)	* 1.5	(0.5, 4.3)	
	Other	73	44,732		40.9	(26.8, 56.7)	* 12.4	(5.3, 26.6)	31.5	(18.4, 48.4)	* 4.5	(1.6, 11.5)	* 10.7	(3.0, 32.0)	
	Missing	309	212,505	4%											
															<0.0001

		Unweighted N[1]	Weighted N[2]	% missing[3]	Harm far outweighs benefit		Harm somewhat outweighs benefit		Benefits about equal to harm		Benefits somewhat outweigh harm		Benefits far outweigh harm		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
Education	Less than high school	361	427,438		31.5	(25.7, 38.0)	19.2	(14.1, 25.6)	29.6	(23.6, 36.4)	9.1	(5.8, 14.0)	10.6	(6.6, 16.5)	
	HS or GED	1,255	1,289,253		30.5	(27.2, 34.1)	24.0	(20.9, 27.3)	33.2	(29.7, 36.8)	8.3	(6.4, 10.7)	4.0	(2.8, 5.7)	
	Some college	2,464	1,145,190		28.7	(26.3, 31.2)	25.6	(23.3, 27.9)	34.7	(32.2, 37.3)	7.7	(6.4, 9.3)	3.3	(2.5, 4.4)	
	BA	2,424	1,316,948		29.4	(27.1, 31.7)	34.6	(32.2, 37.1)	27.3	(25.1, 29.6)	6.6	(5.4, 8.1)	2.0	(1.4, 2.9)	
	MS or professional	2,095	636,907		34.8	(32.4, 37.3)	32.5	(30.1, 34.9)	26.6	(24.4, 28.9)	4.9	(3.8, 6.1)	1.3	(0.8, 2.0)	
	PHD	552	171,680		46.3	(41.4, 51.4)	29.5	(25.1, 34.2)	18.9	(15.1, 23.3)	4.8	(3.1, 7.3)	* 0.6	(0.1, 2.4)	
	Missing	169	131,126	3%											
Employment															<0.0001
	Employed	5,386	3,030,731		28.8	(27.1, 30.6)	29.5	(27.8, 31.2)	32.3	(30.5, 34.2)	6.8	(5.8, 8.0)	2.6	(2.0, 3.3)	
	Unemployed	348	267,157		29.5	(23.3, 36.6)	20.8	(15.8, 27.0)	32.5	(25.8, 40.1)	10.	(6.1, 16.4)	* 7.0	(3.3, 14.2)	
	Homemaker	352	209,326		37.7	(31.2, 44.6)	28.0	(22.6, 34.2)	24.8	(18.7, 32.2)	7.2	(4.2, 12.0)	* 2.3	(0.7, 7.6)	
	Student	325	382,453		30.4	(24.2, 37.3)	34.4	(28.1, 41.3)	26.2	(20.3, 33.1)	5.4	(3.2, 9.0)	* 3.7	(1.6, 8.2)	
	Retired	2,375	817,449		37.0	(34.6, 39.6)	24.5	(22.4, 26.7)	27.3	(25.1, 29.8)	7.9	(6.5, 9.5)	3.2	(2.3, 4.5)	
	Disabled	348	272,271		37.1	(30.4, 44.4)	18.6	(13.5, 25.1)	24.7	(18.7, 31.8)	9.0	(5.4, 14.8)	10.5	(6.5, 16.6)	
	Missing	186	139,155	3%											
Income															<0.0001
	Less than $15,000	804	631,297		33.6	(29.3, 38.1)	22.4	(18.7, 26.6)	27.5	(23.2, 32.2)	9.4	(6.6, 13.1)	7.1	(4.7, 10.7)	
	$15,000 - <$30,000	998	622,190		33.5	(29.2, 38.0)	22.6	(19.0, 26.5)	31.9	(27.7, 36.4)	7.7	(5.6, 10.6)	4.3	(2.8, 6.7)	
	$30,000 - <$50,000	1,278	652,823		33.7	(29.7, 37.9)	25.3	(22.0, 29.0)	29.3	(25.7, 33.1)	8.3	(6.1, 11.1)	3.4	(2.3, 5.2)	
	$50,000 - <$100,000	2,447	1,236,310		27.0	(24.6, 29.5)	32.0	(29.4, 34.8)	31.5	(28.8, 34.4)	6.8	(5.5, 8.3)	2.7	(1.7, 4.4)	
	$100,000 - <$150,000	1,358	713,575		26.8	(23.6, 30.2)	29.6	(26.2, 33.3)	34.3	(30.7, 38.1)	6.6	(4.8, 9.1)	2.7	(1.6, 4.3)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	Harm far outweighs benefit		Harm somewhat outweighs benefit		Benefits about equal to harm		Benefits somewhat outweigh harm		Benefits far outweigh harm		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
	$150,000 or more	1,123	521,718		33.7	(30.2, 37.3)	30.9	(27.5, 34.5)	26.6	(23.3, 30.1)	7.2	(5.1, 10.0)	* 1.7	(0.9, 3.1)	
	Missing	1,312	740,630	17%											
Marital status															0.0001
	Never married	1,551	1,267,751		28.5	(25.3, 31.9)	27.3	(24.2, 30.6)	32.4	(28.9, 36.0)	8.1	(6.2, 10.6)	3.8	(2.5, 5.6)	
	Living with partner	624	433,568		21.1	(17.3, 25.5)	29.3	(24.9, 34.2)	36.7	(31.8, 41.9)	7.7	(5.4, 10.9)	* 5.1	(2.8, 9.1)	
	Married	4,947	2,451,415		32.6	(30.8, 34.4)	29.0	(27.3, 30.8)	28.8	(27.1, 30.6)	6.6	(5.7, 7.7)	2.9	(2.2, 3.8)	
	Divorced or Separated	1,150	508,524		34.7	(30.8, 38.8)	25.0	(21.7, 28.5)	27.9	(24.3, 31.9)	7.6	(5.7, 10.0)	4.8	(3.1, 7.3)	
	Widowed	829	308,167		34.6	(30.4, 39.0)	25.3	(21.6, 29.4)	30.7	(26.4, 35.3)	7.2	(5.2, 9.9)	2.2	(1.3, 3.9)	
	Missing	219	149,117	3%											
Military status															0.7516
	No military	8,312	4,664,616		31.1	(29.7, 32.5)	28.0	(26.7, 29.4)	30.4	(28.9, 31.9)	7.1	(6.3, 8.1)	3.4	(2.8, 4.1)	
	Yes, served prior to Sept 2001	828	309,580		32.4	(28.3, 36.9)	25.3	(21.4, 29.7)	30.3	(26.1, 34.8)	8.9	(6.8, 11.6)	3.1	(1.9, 5.1)	
	Yes, served Sept 2001 or later	68	46,512		* 28.7	(14.3, 49.3)	36.6	(23.1, 52.7)	25.9	(15.1, 40.7)	* 5.1	(1.6, 14.8)	* 3.7	(0.8, 15.5)	
	Missing	112	97,834	2%											
Drug and alcohol use problems															0.1958
	No	9,113	4,928,229		31.3	(30.0, 32.7)	28.3	(27.0, 29.6)	30.0	(28.6, 31.4)	7.1	(6.3, 7.9)	3.3	(2.7, 4.0)	
	Yes	156	131,651		24.2	(16.4, 34.3)	21.1	(14.0, 30.7)	34.3	(24.7, 45.3)	* 13.	(6.9, 25.7)	* 6.5	(2.7, 15.2)	
	Missing	51	58,662	1%											
Tobacco Use															<0.0001
	No	7,947	4,119,280		32.6	(31.1, 34.1)	29.3	(27.9, 30.7)	28.5	(27.1, 30.0)	6.8	(6.0, 7.7)	2.8	(2.2, 3.5)	
	Yes	1,206	890,192		23.7	(20.5, 27.2)	22.5	(19.4, 25.9)	38.2	(34.3, 42.4)	9.2	(7.0, 12.1)	6.3	(4.4, 9.0)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	Harm far outweighs benefit		Harm somewhat outweighs benefit		Benefits about equal to harm		Benefits somewhat outweigh harm		Benefits far outweigh harm		
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	p-value[5]
	Missing	167	109,070	2%											
Self -reported Health status															0.0052
	Excellent	2,006	1,034,725		33.8	(31.0, 36.8)	29.9	(27.0, 32.8)	27.0	(24.3, 29.9)	6.6	(5.0, 8.6)	2.7	(1.7, 4.3)	
	Very Good	3,601	1,876,733		28.7	(26.7, 30.9)	28.7	(26.7, 30.9)	32.3	(30.1, 34.7)	7.3	(6.1, 8.7)	2.9	(2.0, 4.0)	
	Good	2,570	1,473,777		31.2	(28.6, 34.0)	25.9	(23.5, 28.3)	31.4	(28.7, 34.2)	8.4	(6.8, 10.3)	3.1	(2.3, 4.3)	
	Fair	912	553,399		32.8	(28.7, 37.2)	28.7	(24.5, 33.3)	27.2	(23.2, 31.7)	4.9	(3.4, 7.1)	6.4	(4.1, 9.6)	
	Poor	216	143,407		34.4	(26.1, 43.7)	25.2	(16.7, 36.2)	25.0	(17.9, 33.8)	8.6	(5.1, 14.1)	* 6.9	(2.6, 16.7)	
	Missing	15	36,500	1%											
Region															0.1291
	Western Massachusetts	2,688	642,077		31.2	(28.8, 33.6)	27.5	(25.3, 29.9)	31.7	(29.3, 34.2)	6.4	(5.2, 7.9)	3.2	(2.4, 4.3)	
	Greater Boston	5,176	3,471,414		32.1	(30.4, 33.9)	28.2	(26.6, 29.9)	28.8	(27.1, 30.6)	7.4	(6.4, 8.5)	3.5	(2.8, 4.4)	
	South Eastern Massachusetts	1,456	975,817		27.4	(24.5, 30.6)	27.8	(24.8, 31.0)	34.3	(30.9, 37.8)	7.3	(5.6, 9.4)	3.2	(2.1, 4.9)	
	Missing	0	29,234	1%											
County															0.0090
	Barnstable/Dukes/Nantucket	373	201,638		30.3	(24.7, 36.5)	25.4	(20.2, 31.5)	33.8	(26.6, 41.8)	8.0	(4.6, 13.6)	* 2.5	(1.0, 6.6)	
	BERKSHIRE	481	110,236		30.2	(25.0, 36.0)	31.3	(25.3, 37.9)	31.5	(26.3, 37.2)	* 5.0	(2.7, 9.0)	* 2.0	(1.0, 4.2)	
	BRISTOL	562	443,936		27.6	(23.0, 32.7)	26.0	(21.3, 31.3)	35.4	(30.3, 40.9)	6.8	(4.4, 10.3)	4.2	(2.5, 7.2)	
	ESSEX	854	572,624		32.0	(27.9, 36.4)	28.2	(24.2, 32.5)	29.2	(25.0, 33.8)	6.7	(4.8, 9.3)	3.9	(2.4, 6.3)	
	FRANKLIN														
	HAMPDEN	1,289	349,221		30.7	(27.3, 34.4)	24.1	(21.2, 27.3)	33.5	(30.0, 37.2)	7.4	(5.6, 9.7)	4.3	(3.0, 6.2)	
	HAMPSHIRE	616	124,732		29.5	(25.1, 34.3)	33.2	(28.3, 38.5)	30.8	(25.7, 36.5)	5.1	(3.1, 8.2)	* 1.5	(0.8, 2.7)	
	MIDDLESEX	1,909	1,129,381		31.4	(28.7, 34.1)	27.5	(25.0, 30.2)	30.2	(27.4, 33.1)	7.8	(6.1, 10.0)	3.1	(2.0, 4.8)	
	NORFOLK	804	487,681		30.3	(26.2, 34.7)	33.4	(29.1, 37.9)	28.3	(24.2, 32.9)	6.5	(4.8, 8.7)	* 1.5	(0.6, 3.7)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	Harm far outweighs benefit		Harm somewhat outweighs benefit		Benefits about equal to harm		Benefits somewhat outweigh harm		Benefits far outweigh harm			p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]		%[4]	95% CI[4]	
	PLYMOUTH	521	330,243		25.5	(20.6, 31.0)	31.7	(26.7, 37.3)	33.0	(27.8, 38.7)	7.4	(5.0, 10.9)	*	2.3	(0.9, 5.9)	
	SUFFOLK	632	570,531		34.6	(29.9, 39.7)	26.8	(22.6, 31.5)	24.5	(20.3, 29.2)	8.4	(5.7, 12.3)		5.7	(3.4, 9.2)	
	WORCESTER	977	711,198		32.6	(28.7, 36.8)	26.8	(23.1, 30.9)	30.1	(26.2, 34.4)	7.0	(5.2, 9.5)		3.4	(2.0, 5.9)	
	Missing	0	29,234	1%												

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] The % missing is calculated using the weighted N

[4] Percentages and 95% CI are calculated using the weighted N

[5] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 44 Perceived harm or benefit of gambling (collapsed into 3 groups)

					Harm outweighs benefit		Benefits about equal to harm		Benefits outweigh harm		
		Unweighted N[1]	Weighted N[2]	% missing[3]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	p-value[5]
Over all		9,320	5,089,308		59.1	(57.6, 60.6)	30.2	(28.8, 31.6)	10.7	(9.7, 11.7)	
	Missing	438	151,021	3%							
Gender											<0.0001
	Male	3,719	2,389,887		56.2	(53.8, 58.6)	31.0	(28.8, 33.3)	12.8	(11.2, 14.6)	
	Female	5,500	2,640,582		61.6	(59.8, 63.4)	29.6	(27.9, 31.3)	8.8	(7.8, 10.0)	
	Missing	101	88,073	2%							
Age											0.0002
	18-20	98	209,302		50.6	(39.1, 62.0)	42.8	(31.8, 54.5)	* 6.7	(2.8, 15.3)	
	21-24	243	323,245		61.2	(53.4, 68.4)	24.7	(18.8, 31.8)	14.1	(9.4, 20.7)	
	25-34	987	893,107		52.0	(47.9, 56.0)	35.0	(31.2, 38.9)	13.0	(10.1, 16.6)	
	35-54	2,846	1,668,093		59.1	(56.4, 61.7)	31.3	(28.9, 33.8)	9.6	(8.1, 11.4)	
	55-64	1,945	844,443		62.3	(59.3, 65.1)	27.1	(24.6, 29.8)	10.7	(8.9, 12.8)	
	65-79	2,021	632,822		61.8	(59.0, 64.6)	26.1	(23.7, 28.7)	12.0	(10.2, 14.2)	
	80+	729	252,033		62.9	(58.2, 67.4)	28.1	(23.9, 32.6)	9.0	(6.6, 12.3)	
	Missing	451	295,497	6%							
Ethnicity											<0.0001
	Hispanic	458	413,699		62.8	(56.5, 68.8)	24.1	(19.3, 29.7)	13.0	(8.9, 18.6)	
	Black	342	320,634		53.2	(45.8, 60.5)	31.7	(25.2, 39.1)	15.1	(10.3, 21.5)	
	White	7,781	3,851,763		58.2	(56.5, 59.8)	31.4	(29.9, 32.9)	10.5	(9.4, 11.6)	
	Asian	357	275,208		71.1	(63.3, 77.8)	24.6	(18.1, 32.5)	4.3	(2.5, 7.5)	
	Other	73	44,732		53.3	(37.2, 68.7)	31.5	(18.4, 48.4)	* 15.2	(6.0, 33.5)	
	Missing	309	212,505	4%							
Education											<0.0001
	Less than high school	361	427,438		50.7	(43.7, 57.7)	29.6	(23.6, 36.4)	19.7	(14.4, 26.3)	
	HS or GED	1,255	1,289,253		54.5	(50.7, 58.2)	33.2	(29.7, 36.8)	12.3	(10.1, 15.0)	
	Some college	2,464	1,145,190		54.2	(51.5, 56.9)	34.7	(32.2, 37.3)	11.0	(9.5, 12.8)	
	BA	2,424	1,316,948		64.0	(61.5, 66.4)	27.3	(25.1, 29.6)	8.7	(7.2, 10.3)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	Harm outweighs benefit %[4]	95% CI[4]	Benefits about equal to harm %[4]	95% CI[4]	Benefits outweigh harm %[4]	95% CI[4]	p-value[5]
	MS or professional degree	2,095	636,907		67.2	(64.8, 69.6)	26.6	(24.4, 28.9)	6.1	(5.0, 7.5)	
	PHD	552	171,680		75.8	(71.1, 79.9)	18.9	(15.1, 23.3)	5.3	(3.5, 8.0)	
	Missing	169	131,126	3%							
Employment											0.0006
	Employed	5,386	3,030,731		58.3	(56.3, 60.2)	32.3	(30.5, 34.2)	9.4	(8.3, 10.7)	
	Unemployed	348	267,157		50.4	(42.7, 57.9)	32.5	(25.8, 40.1)	17.1	(11.4, 24.9)	
	Homemaker	352	209,326		65.7	(58.2, 72.5)	24.8	(18.7, 32.2)	9.5	(5.8, 15.1)	
	Student	325	382,453		64.7	(57.6, 71.3)	26.2	(20.3, 33.1)	9.0	(5.7, 14.0)	
	Retired	2,375	817,449		61.5	(58.9, 64.1)	27.3	(25.1, 29.8)	11.1	(9.4, 13.0)	
	Disabled	348	272,271		55.7	(48.2, 63.1)	24.7	(18.7, 31.8)	19.6	(14.0, 26.7)	
	Missing	186	139,155	3%							
Income											0.0064
	Less than $15,000	804	631,297		56.0	(51.0, 60.9)	27.5	(23.2, 32.2)	16.5	(12.8, 21.1)	
	$15,000 - <$30,000	998	622,190		56.0	(51.4, 60.6)	31.9	(27.7, 36.4)	12.1	(9.3, 15.5)	
	$30,000 - <$50,000	1,278	652,823		59.0	(54.9, 63.0)	29.3	(25.7, 33.1)	11.7	(9.2, 14.8)	
	$50,000 - <$100,000	2,447	1,236,310		59.0	(56.0, 61.9)	31.5	(28.8, 34.4)	9.5	(7.8, 11.6)	
	$100,000 -<$150,000	1,358	713,575		56.4	(52.5, 60.2)	34.3	(30.7, 38.1)	9.3	(7.1, 12.0)	
	$150,000 or more	1,123	521,718		64.6	(60.7, 68.3)	26.6	(23.3, 30.1)	8.9	(6.6, 11.8)	
	Missing	1,312	740,630	17%							
Marital status											0.0036
	Never married	1,551	1,267,751		55.8	(52.0, 59.5)	32.4	(28.9, 36.0)	11.9	(9.5, 14.7)	
	Living with partner	624	433,568		50.4	(45.2, 55.6)	36.7	(31.8, 41.9)	12.8	(9.4, 17.2)	
	Married	4,947	2,451,415		61.6	(59.7, 63.5)	28.8	(27.1, 30.6)	9.6	(8.4, 10.9)	
	Divorced or Separated	1,150	508,524		59.7	(55.5, 63.8)	27.9	(24.3, 31.9)	12.4	(9.8, 15.5)	
	Widowed	829	308,167		59.8	(55.2, 64.4)	30.7	(26.4, 35.3)	9.5	(7.2, 12.4)	
	Missing	219	149,117	3%							

		Unweighted N[1]	Weighted N[2]	% missing[3]	Harm outweighs benefit		Benefits about equal to harm		Benefits outweigh harm			p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]		%[4]	95% CI[4]	
Military status												0.7968
	No military	8,312	4,664,616		59.1	(57.5, 60.7)	30.4	(28.9, 31.9)		10.5	(9.5, 11.6)	
	Yes, served prior to Sept 2001	828	309,580		57.7	(53.0, 62.3)	30.3	(26.1, 34.8)		12.0	(9.5, 15.1)	
	Yes, served Sept 2001 or later	68	46,512		65.4	(49.8, 78.2)	25.9	(15.1, 40.7)	*	8.7	(3.5, 20.4)	
	Missing	112	97,834	2%								
Drug and alcohol use problems												0.0512
	No	9,113	4,928,229		59.6	(58.1, 61.1)	30.0	(28.6, 31.4)		10.4	(9.4, 11.4)	
	Yes	156	131,651		45.4	(35.0, 56.2)	34.3	(24.7, 45.3)		20.4	(12.0, 32.3)	
	Missing	51	58,662	1%								
Tobacco Use												<0.0001
	No	7,947	4,119,280		61.9	(60.3, 63.4)	28.5	(27.1, 30.0)		9.6	(8.6, 10.7)	
	Yes	1,206	890,192		46.2	(42.2, 50.3)	38.2	(34.3, 42.4)		15.6	(12.6, 19.1)	
	Missing	167	109,070	2%								
Self-reported Health status												0.0211
	Excellent	2,006	1,034,725		63.7	(60.5, 66.7)	27.0	(24.3, 29.9)		9.3	(7.4, 11.7)	
	Very Good	3,601	1,876,733		57.5	(55.1, 59.8)	32.3	(30.1, 34.7)		10.2	(8.7, 11.9)	
	Good	2,570	1,473,777		57.1	(54.2, 59.9)	31.4	(28.7, 34.2)		11.5	(9.7, 13.6)	
	Fair	912	553,399		61.5	(56.8, 66.0)	27.2	(23.2, 31.7)		11.3	(8.5, 14.8)	
	Poor	216	143,407		59.6	(49.7, 68.7)	25.0	(17.9, 33.8)		15.4	(9.4, 24.3)	
	Missing	15	36,500	1%								
Region												0.0368
	Western Massachusetts	2,688	642,077		58.7	(56.1, 61.3)	31.7	(29.3, 34.2)		9.6	(8.1, 11.3)	
	Greater Boston	5,176	3,471,414		60.3	(58.4, 62.2)	28.8	(27.1, 30.6)		10.9	(9.7, 12.3)	
	South Eastern Massachusetts	1,456	975,817		55.2	(51.7, 58.8)	34.3	(30.9, 37.8)		10.5	(8.5, 13.0)	
	Missing	0	29,234	1%								

		Unweighted N[1]	Weighted N[2]	% missing[3]	Harm outweighs benefit %[4]	95% CI[4]	Benefits about equal to harm %[4]	95% CI[4]	Benefits outweigh harm %[4]	95% CI[4]	p-value[5]
County											0.0042
	Barnstable/Dukes/Nantucket	373	201,638		55.7	(48.0, 63.0)	33.8	(26.6, 41.8)	10.6	(6.6, 16.5)	
	BERKSHIRE	481	110,236		61.5	(55.4, 67.2)	31.5	(26.3, 37.2)	7.0	(4.4, 11.1)	
	BRISTOL	562	443,936		53.6	(48.0, 59.1)	35.4	(30.3, 40.9)	11.0	(7.9, 15.1)	
	ESSEX	854	572,624		60.2	(55.5, 64.8)	29.2	(25.0, 33.8)	10.6	(8.1, 13.8)	
	FRANKLIN	302	57,888		68.4	(61.7, 74.5)	23.0	(17.9, 29.1)	8.6	(5.3, 13.6)	
	HAMPDEN	1,289	349,221		54.8	(51.0, 58.6)	33.5	(30.0, 37.2)	11.7	(9.4, 14.4)	
	HAMPSHIRE	616	124,732		62.7	(57.0, 68.0)	30.8	(25.7, 36.5)	6.5	(4.3, 9.7)	
	MIDDLESEX	1,909	1,129,381		58.9	(55.8, 61.9)	30.2	(27.4, 33.1)	11.0	(8.9, 13.4)	
	NORFOLK	804	487,681		63.6	(59.0, 68.0)	28.3	(24.2, 32.9)	8.0	(6.0, 10.7)	
	PLYMOUTH	521	330,243		57.2	(51.4, 62.8)	33.0	(27.8, 38.7)	9.8	(6.8, 13.9)	
	SUFFOLK	632	570,531		61.5	(56.2, 66.5)	24.5	(20.3, 29.2)	14.1	(10.5, 18.6)	
	WORCESTER	977	711,198		59.4	(55.0, 63.7)	30.1	(26.2, 34.4)	10.5	(8.0, 13.6)	
	Missing	0	29,234	1%							

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] The % missing is calculated using the weighted N

[4] Percentages and 95% CI are calculated using the weighted N

[5] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 45 Perceived morality of gambling (Is gambling morally wrong?)

		Unweighted N[1]	Weighted N[2]	% missing[3]	No			Do not know			Yes		p-value[5]
					%[4]	95% CI[4]		%[4]	95% CI[4]		%[4]	95% CI[4]	
Overall		9,427	5,165,01		82.4	(81.1, 83.6)	*	0.3	(0.1, 0.7)		17.3	(16.1, 18.6)	
	Missing	331	75,315	1%									
Gender													0.0257
	Male	3,754	2,416,89		83.8	(81.8, 85.7)	*	0.6	(0.2, 1.4)		15.6	(13.8, 17.6)	
	Female	5,567	2,685,84		81.3	(79.6, 82.9)	*	0.1	(0.1, 0.3)		18.6	(17.0, 20.3)	
	Missing	106	70,490	1%									
Age													<0.0001
	18-20	99	210,177		78.1	(67.0, 86.3)		0.0	NA		21.9	(13.7, 33.0)	
	21-24	245	326,735		75.8	(68.4, 82.0)		0.0	NA		24.2	(18.0, 31.6)	
	25-34	996	901,614		85.7	(82.1, 88.7)			---		13.8	(10.9, 17.3)	
	35-54	2,866	1,685,29		82.7	(80.3, 84.9)			---		16.9	(14.8, 19.2)	
	55-64	1,957	860,045		84.5	(81.8, 86.9)			---		15.4	(13.0, 18.1)	
	65-79	2,054	647,286		84.8	(82.5, 86.9)			---		14.9	(12.9, 17.3)	
	80+	753	261,913		71.6	(67.0, 75.7)	*	1.3	(0.5, 3.3)		27.2	(23.1, 31.7)	
	Missing	457	280,164	6%									
Ethnicity													<0.0001
	Hispanic	472	425,245		51.7	(45.4, 57.9)			---		46.2	(40.0, 52.5)	
	Black	358	345,538		68.3	(61.1, 74.6)			---		31.1	(24.8, 38.2)	
	White	7,837	3,878,29		89.6	(88.5, 90.6)	*	0.1	(0.1, 0.3)		10.3	(9.3, 11.3)	
	Asian	359	277,598		52.8	(45.3, 60.2)		0.0	NA		47.2	(39.8, 54.7)	
	Other	81	48,540		66.1	(50.2, 79.0)			---		32.7	(19.9, 48.8)	
	Missing	320	198,014	4%					---				
Education													<0.0001
	Less than high school	390	447,117		62.8	(56.0, 69.2)			---		35.8	(29.5, 42.6)	
	HS or GED	1,291	1,323,93		77.5	(74.1, 80.6)			---		22.0	(18.9, 25.4)	
	Some college	2,505	1,162,76		84.6	(82.4, 86.5)			---		15.4	(13.5, 17.6)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	No		Do not know		Yes		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
	BA	2,428	1,319,98		90.1	(88.6, 91.4)		---	9.8	(8.4, 11.3)	
	MS or professional degree	2,086	634,913		86.6	(84.5, 88.4)		---	13.3	(11.5, 15.4)	
	PHD	553	171,882		86.7	(82.6, 90.0)	0.0	NA	13.3	(10.0, 17.4)	
	Missing	174	112,635	2%							
Employment											<0.0001
	Employed	5,418	3,062,61		85.8	(84.1, 87.3)		---	14.2	(12.7, 15.8)	
	Unemployed	355	271,230		78.1	(71.2, 83.8)		---	20.1	(14.9, 26.5)	
	Homemaker	349	209,094		75.5	(68.1, 81.6)	0.0	NA	24.5	(18.4, 31.9)	
	Student	327	384,058		78.8	(72.1, 84.3)	0.0	NA	21.2	(15.7, 27.9)	
	Retired	2,426	837,089		81.1	(78.8, 83.2)	* 0.5	(0.2, 1.1)	18.4	(16.3, 20.7)	
	Disabled	359	285,389		65.5	(58.1, 72.1)		---	32.7	(26.3, 39.9)	
	Missing	193	123,750	2%				---			
Income											<0.0001
	Less than $15,000	830	653,239		66.8	(62.1, 71.3)		---	32.5	(28.1, 37.1)	
	$15,000 - <$30,000	1,017	635,389		74.3	(69.8, 78.3)		---	24.7	(20.7, 29.0)	
	$30,000 - <$50,000	1,298	668,067		76.6	(72.3, 80.5)		---	23.2	(19.4, 27.6)	
	$50,000 - <$100,000	2,455	1,239,493		87.9	(85.6, 90.0)		---	12.0	(10.0, 14.4)	
	$100,000 - <$150,000	1,359	714,513		92.4	(89.8, 94.4)		---	7.5	(5.5, 10.1)	
	$150,000 or more	1,123	522,064		91.1	(88.3, 93.2)	0.0	NA	8.9	(6.8, 11.7)	
	Missing	1,345	740,463	17%							
Marital status											0.0106
	Never married	1,560	1,281,76		81.4	(78.2, 84.2)		---	18.1	(15.4, 21.3)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	No		Do not know			Yes			p-value[5]
					%[4]	95% CI[4]		%[4]	95% CI[4]		%[4]	95% CI[4]	
	Living with	630	435,591		88.8	(84.5, 92.1)			---		10.9	(7.7, 15.2)	
	Married	4,987	2,478,03		83.3	(81.5, 85.0)			---		16.5	(14.8, 18.2)	
	Divorced or Separated	1,168	522,629		80.1	(76.0, 83.7)			---		19.6	(16.0, 23.8)	
	Widowed	854	317,161		77.6	(73.3, 81.4)			---		21.7	(17.9, 26.0)	
	Missing	228	138,042	3%					---				
Military status													0.0002
	No military	8,408	4,738,01		82.2	(80.8, 83.4)	*	0.3	(0.1, 0.8)		17.5	(16.2, 18.9)	
	Yes, served prior to Sept 2001	839	311,477		88.3	(85.1, 90.8)			---		11.3	(8.8, 14.3)	
	Yes, served Sept 2001 or later	67	46,417		73.2	(51.8, 87.4)		0.0	NA	*	26.8	(12.6, 48.2)	
	Missing	113	77,321	2%									
Drug and alcohol use problems													0.1201
	No	9,214	5,000,94		82.3	(81.0, 83.5)	*	0.2	(0.1, 0.5)		17.5	(16.2, 18.8)	
	Yes	159	133,018		86.0	(74.7, 92.7)			---	*	10.5	(5.4, 19.5)	
	Missing	54	39,263	1%					---				
Tobacco Use													<0.0001
	No	8,037	4,182,19		81.2	(79.7, 82.6)	*	0.3	(0.1, 0.6)		18.5	(17.2, 20.0)	
	Yes	1,222	902,659		88.6	(85.6, 91.1)			---		10.7	(8.3, 13.7)	
	Missing	168	88,378	2%					---				
Self-reported Health status													<0.0001
	Excellent	2,017	1,040,71		85.2	(82.4, 87.5)			---		14.7	(12.3, 17.4)	
	Very Good	3,618	1,895,86		85.6	(83.6, 87.4)			---		14.3	(12.5, 16.3)	
	Good	2,616	1,504,29		80.4	(77.8, 82.8)			---		19.2	(16.8, 21.8)	
	Fair	936	570,549		75.8	(71.4, 79.7)			---		23.0	(19.3, 27.2)	
	Poor	226	146,454		64.9	(54.3, 74.2)			---		34.6	(25.3, 45.3)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	No		Do not know		Yes		
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	p-value[5]
	Missing	14	15,355	0%				---			
Region											<0.0001
	Western Massachusetts	2,728	654,732		81.8	(79.6, 83.9)		---	18.1	(16.0, 20.4)	
	Greater Boston	5,222	3,516,74		81.0	(79.3, 82.6)	* 0.3	(0.1, 0.8)	18.7	(17.1, 20.4)	
	South Eastern Massachusetts	1,477	993,543		87.5	(84.8, 89.8)	* 0.7	(0.2, 2.5)	11.8	(9.6, 14.4)	
	Missing	0	8,214	0%							
County											<0.0001
	Barnstable/Dukes/Nantucket	376	202,372		92.8	(89.3, 95.1)		---	7.1	(4.7, 10.5)	
	BERKSHIRE	488	112,125		86.1	(81.1, 89.9)		---	13.7	(9.9, 18.6)	
	BRISTOL	567	448,281		85.5	(80.7, 89.3)		---	13.2	(9.7, 17.7)	
	ESSEX	853	572,173		80.9	(76.5, 84.6)		---	18.9	(15.2, 23.3)	
	FRANKLIN	310	58,978		87.1	(81.5, 91.1)	0.0	NA	12.9	(8.9, 18.5)	
	HAMPDEN	1,312	357,401		78.3	(74.8, 81.3)		---	21.7	(18.7, 25.1)	
	HAMPSHIRE	618	126,228		85.8	(80.8, 89.7)	0.0	NA	14.2	(10.3, 19.2)	
	MIDDLESEX	1,927	1,145,59		85.7	(83.3, 87.8)		---	14.2	(12.1, 16.6)	
	NORFOLK	811	500,782		81.6	(77.0, 85.4)	0.0	NA	18.4	(14.6, 23.0)	
	PLYMOUTH	534	342,890		87.0	(82.1, 90.8)		---	12.8	(9.0, 17.7)	
	SUFFOLK	641	577,080		73.7	(68.5, 78.3)		---	25.2	(20.7, 30.3)	
	WORCESTER	990	721,113		79.0	(74.7, 82.7)		---	20.9	(17.2, 25.2)	
	Missing	0	8,214	0%				---			

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] The % missing is calculated using the weighted N

[4] Percentages and 95% CI are calculated using the weighted N

[5] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Note: A dash --- indicates that the cell size is less than or equal to 5

Appendix D: Gambling in Massachusetts

Table 46 Past-year gambling participation

		Unweighted N[1]	Weighted N[2]	% participated		
				%[3]	95% CI[3]	p-value[4]
Overall		9,537	5,220,404	73.1	(71.8, 74.4)	
Gender						<0.0001
	Male	3,792	2,435,323	77.3	(75.2, 79.2)	
	Female	5,640	2,723,234	69.6	(67.8, 71.3)	
Age						<0.0001
	18-20	100	211,399	54.5	(43.0, 65.6)	
	21-24	246	327,588	57.6	(49.9, 64.9)	
	25-34	999	907,174	73.1	(69.4, 76.5)	
	35-54	2,893	1,705,300	78.1	(75.9, 80.2)	
	55-64	1,977	867,948	79.6	(77.1, 81.8)	
	65-79	2,086	656,843	74.1	(71.5, 76.5)	
	80+	771	268,311	63.4	(59.0, 67.5)	
Race/Ethnicity						<0.0001
	Hispanic	475	427,991	63.1	(57.0, 68.9)	
	Black	361	346,740	65.6	(58.5, 72.1)	
	White	7,932	3,923,775	76.4	(75.0, 77.7)	
	Asian	364	280,885	56.1	(48.8, 63.1)	
	Other	83	49,119	54.3	(39.2, 68.6)	
Education						<0.0001
	Less than high school	393	450,867	68.2	(61.6, 74.1)	
	HS or GED	1,313	1,345,798	73.4	(70.0, 76.6)	
	Some college	2,534	1,174,770	75.7	(73.2, 78.0)	
	BA	2,455	1,330,926	75.7	(73.4, 77.8)	
	MS or professional degree	2,112	642,157	71.0	(68.6, 73.3)	
	PHD	555	172,620	57.4	(52.4, 62.3)	
Employment						<0.0001
	Employed	5,477	3,096,320	76.7	(75.0, 78.3)	
	Unemployed	353	269,599	78.9	(72.6, 84.0)	
	Homemaker	357	212,919	64.7	(57.5, 71.2)	
	Student	329	386,133	57.7	(50.6, 64.4)	
	Retired	2,471	855,184	71.2	(68.8, 73.4)	
	Disabled	360	286,109	63.7	(56.5, 70.4)	
Income						<0.0001
	Less than $15,000	838	660,664	63.5	(58.8, 67.9)	
	$15,000 - <$30,000	1,028	641,679	71.6	(67.4, 75.5)	
	$30,000 - <$50,000	1,325	682,529	69.7	(65.6, 73.4)	
	$50,000 - <$100,000	2,473	1,243,119	78.4	(76.0, 80.6)	

		Unweighted N[1]	Weighted N[2]	% participated		
				%[3]	95% CI[3]	p-value[4]
	$100,000 -	1,368	717,915	82.8	(79.6, 85.6)	
	$150,000 or more	1,129	524,708	76.9	(73.7, 79.9)	
Marital status						<0.0001
	Never married	1,577	1,294,590	65.6	(62.0, 69.0)	
	Living with partner	633	438,669	78.7	(74.2, 82.6)	
	Married	5,039	2,502,507	76.8	(75.2, 78.3)	
	Divorced or Separated	1,183	527,565	73.7	(69.9, 77.2)	
	Widowed	877	327,516	68.6	(64.2, 72.7)	
Military status						<0.0001
	No military	8,502	4,784,449	72.4	(71.0, 73.8)	
	Yes, served prior to Sept 2001	853	319,520	82.3	(79.0, 85.3)	
	Yes, served Sept 2001 or later	68	46,512	77.8	(62.3, 88.1)	
Drug and alcohol use problems						<0.0001
	No	9,297	5,046,096	72.6	(71.3, 74.0)	
	Yes	159	133,018	89.8	(81.5, 94.6)	
Tobacco Use						<0.0001
	No	8,132	4,230,341	71.2	(69.7, 72.6)	
	Yes	1,231	907,214	82.9	(79.6, 85.7)	
Self-reported Health status						0.0007
	Excellent	2,035	1,054,592	71.8	(68.9, 74.5)	
	Very Good	3,662	1,914,354	75.2	(73.1, 77.3)	
	Good	2,655	1,520,867	74.9	(72.4, 77.2)	
	Fair	942	575,663	66.6	(61.9, 71.0)	
	Poor	229	148,620	61.4	(51.4, 70.5)	
Region						0.0021
	Western Massachusetts	2,760	662,877	74.5	(72.2, 76.7)	
	Greater Boston	5,282	3,552,363	71.6	(69.9, 73.3)	
	South Eastern Massachusetts	1,495	1,005,164	77.5	(74.3, 80.3)	
County						0.0005
	Barnstable/Dukes/Nantucket	380	205,162	77.7	(71.9, 82.6)	
	BERKSHIRE	496	113,162	77.0	(70.8, 82.1)	
	BRISTOL	575	454,402	76.4	(71.2, 81.0)	
	ESSEX	865	577,340	73.7	(69.5, 77.6)	
	FRANKLIN	308	58,430	79.7	(74.0, 84.4)	
	HAMPDEN	1,330	363,045	75.0	(71.6, 78.0)	

		Unweighted N[1]	Weighted N[2]	% participated %[3]	95% CI[3]	p-value[4]
	HAMPSHIRE	626	128,240	68.7	(63.5, 73.5)	
	MIDDLESEX	1,947	1,158,516	70.3	(67.6, 73.0)	
	NORFOLK	823	505,921	73.5	(69.3, 77.3)	
	PLYMOUTH	540	345,600	78.7	(73.3, 83.2)	
	SUFFOLK	645	583,230	66.0	(61.0, 70.7)	
	WORCESTER	1,002	727,356	75.0	(70.8, 78.8)	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

[4] P-value from chi-square test for differences across groups

Table 47 Past-year lottery participation

				% participated		
		Unweighted N[1]	Weighted N[2]	%[3]	95% CI[3]	p-value[4]
Overall		9,521	5,218,127	61.7	(60.2, 63.1)	
Gender						<0.0001
	Male	3,788	2,432,112	66.5	(64.2, 68.7)	
	Female	5,627	2,723,427	57.7	(55.9, 59.6)	
Age						<0.0001
	18-20	99	210,717	34.5	(24.5, 46.0)	
	21-24	246	327,588	41.5	(34.2, 49.1)	
	25-34	997	905,634	59.1	(55.2, 63.0)	
	35-54	2,887	1,705,767	68.2	(65.7, 70.5)	
	55-64	1,977	869,477	70.4	(67.7, 73.0)	
	65-79	2,079	656,161	63.8	(61.0, 66.4)	
	80+	771	267,685	52.9	(48.3, 57.3)	
Race/Ethnicity						<0.0001
	Hispanic	477	430,891	55.9	(49.7, 62.0)	
	Black	364	349,616	57.4	(50.3, 64.3)	
	White	7,913	3,917,090	64.3	(62.7, 65.8)	
	Asian	364	280,688	42.2	(35.1, 49.6)	
	Other	83	49,119	47.8	(33.3, 62.7)	
Education						<0.0001
	Less than high school	396	454,153	57.5	(50.6, 64.1)	
	HS or GED	1,313	1,349,633	67.7	(64.2, 71.1)	
	Some college	2,528	1,170,295	64.9	(62.2, 67.5)	
	BA	2,446	1,326,339	61.8	(59.3, 64.2)	
	MS or professional degree	2,104	639,437	53.5	(50.9, 56.0)	
	PHD	556	172,922	36.1	(31.4, 41.0)	
Employment						<0.0001
	Employed	5,467	3,094,771	65.7	(63.9, 67.5)	
	Unemployed	351	268,689	70.9	(64.0, 76.9)	
	Homemaker	357	212,919	50.8	(43.9, 57.8)	
	Student	328	385,072	35.1	(28.8, 41.9)	
	Retired	2,463	852,425	61.0	(58.5, 63.5)	
	Disabled	364	289,492	56.8	(49.5, 63.8)	
Income						0.0084
	Less than $15,000	840	664,435	56.7	(51.9, 61.4)	
	$15,000 - <$30,000	1,027	639,134	62.8	(58.3, 67.1)	
	$30,000 - <$50,000	1,321	683,965	61.2	(57.0, 65.2)	
	$50,000 - <$100,000	2,470	1,241,736	66.3	(63.5, 69.0)	
	$100,000 -<$150,000	1,368	717,562	66.0	(62.2, 69.6)	

		Unweighted N[1]	Weighted N[2]	% participated		p-value[4]
				%[3]	95% CI[3]	
	$150,000 or more	1,125	523,085	62.0	(58.3, 65.6)	
Marital status						<0.0001
	Never married	1,579	1,295,680	52.3	(48.6, 56.0)	
	Living with partner	632	437,986	68.1	(63.2, 72.6)	
	Married	5,028	2,501,894	65.3	(63.5, 67.1)	
	Divorced or Separated	1,180	527,276	66.7	(62.8, 70.4)	
	Widowed	874	326,107	57.5	(53.0, 61.8)	
Military status						<0.0001
	No military	8,490	4,783,626	60.7	(59.1, 62.2)	
	Yes, served prior to Sept 2001	849	318,349	74.7	(70.9, 78.2)	
	Yes, served Sept 2001 or later	68	46,512	70.0	(53.9, 82.3)	
Drug and alcohol use problems						0.0005
	No	9,282	5,044,103	61.2	(59.7, 62.6)	
	Yes	158	131,294	78.7	(68.5, 86.2)	
Tobacco Use						<0.0001
	No	8,115	4,226,685	59.0	(57.4, 60.6)	
	Yes	1,232	907,260	74.7	(70.9, 78.2)	
Self-reported Health status						0.0001
	Excellent	2,028	1,050,165	57.3	(54.1, 60.3)	
	Very Good	3,654	1,911,815	62.7	(60.4, 65.0)	
	Good	2,652	1,522,883	65.7	(63.0, 68.3)	
	Fair	941	576,656	57.1	(52.3, 61.7)	
	Poor	231	149,343	55.0	(45.2, 64.5)	
Region						0.0001
	Western Massachusetts	2,756	662,438	64.2	(61.8, 66.7)	
	Greater Boston	5,276	3,554,163	59.7	(57.8, 61.5)	
	South Eastern Massachusetts	1,489	1,001,526	67.1	(63.6, 70.3)	
County						<0.0001
	Barnstable/Dukes/Nantucket	376	203,580	63.6	(56.6, 70.1)	
	BERKSHIRE	491	111,841	66.3	(60.1, 72.0)	
	BRISTOL	573	452,078	66.5	(60.9, 71.7)	
	ESSEX	865	577,304	64.2	(59.7, 68.5)	
	FRANKLIN	309	58,578	64.3	(57.4, 70.7)	
	HAMPDEN	1,330	363,651	66.3	(62.8, 69.7)	
	HAMPSHIRE	626	128,367	56.6	(51.2, 61.8)	
	MIDDLESEX	1,944	1,156,663	55.7	(52.7, 58.6)	

		Unweighted N[1]	Weighted N[2]	% participated		
				%[3]	95% CI[3]	p-value[4]
	NORFOLK	818	504,740	62.6	(58.1, 66.9)	
	PLYMOUTH	540	345,869	69.8	(64.3, 74.9)	
	SUFFOLK	645	583,171	53.0	(47.9, 58.1)	
	WORCESTER	1,004	732,285	65.7	(61.3, 69.8)	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

[4] P-value from chi-square test for differences across groups

Table 48 Number of activities in which past-year gamblers participated

	Unweighted N[1]	Weighted N[2]	Average # other gambling activities participated in[3]	Percent also participated in[3]							
				All lottery	Raffles	Sports	Bingo	Horse racing	Private	Casino	Online
All lottery	5,775	3,218,277	1.1		40.3	17.0	4.6	4.8	13.8	29.8	2.1
Raffles	3,471	1,634,656	1.6	78.6		22.4	5.7	6.3	17.7	28.7	2.1
Sports	1,023	660,696	2.5	82.6	55.4		6.8	14.9	41.0	41.0	6.7
Bingo	289	178,584	2.5	82.3	52.4	25.7		11.0	26.1	52.9	5.7
Horse racing	330	178,272	3.1	87.3	58.1	55.3	11.1		31.5	58.7	10.3
Private	840	575,696	2.3	76.7	50.1	47.0	8.1	9.8		38.1	6.9
Casino	1,839	1,051,276	1.9	86.0	43.0	25.2	8.2	9.2	20.4		3.4
Online	110	82,189	3.0	82.9	42.9	53.3	12.5	22.6	47.8	44.6	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Averages and percentages are calculated using the weighted N

Table 49 Past-year traditional lottery participation

		Unweighted N[1]	Weighted N[2]	% participated		
				%[3]	95% CI[3]	p-value[4]
Overall		9,555	5,234,836	58.1	(56.6, 59.5)	
Gender						<0.0001
	Male	3,800	2,439,885	63.7	(61.4, 66.0)	
	Female	5,648	2,731,953	53.4	(51.6, 55.2)	
Age						<0.0001
	18-20	100	211,399	33.0	(23.2, 44.6)	
	21-24	246	327,588	38.6	(31.4, 46.2)	
	25-34	1,000	908,819	53.6	(49.6, 57.6)	
	35-54	2,895	1,709,956	64.4	(62.0, 66.9)	
	55-64	1,979	870,084	67.3	(64.5, 69.9)	
	65-79	2,089	659,180	61.1	(58.4, 63.8)	
	80+	776	269,445	49.0	(44.5, 53.5)	
Race/Ethnicity						<0.0001
	Hispanic	481	432,799	52.0	(45.8, 58.1)	
	Black	365	350,902	54.8	(47.7, 61.7)	
	White	7,938	3,927,888	60.4	(58.8, 61.9)	
	Asian	363	279,907	41.3	(34.2, 48.7)	
	Other	83	49,119	47.4	(32.9, 62.3)	
Education						<0.0001
	Less than high school	398	454,695	54.2	(47.4, 60.8)	
	HS or GED	1,316	1,351,078	63.5	(59.9, 67.0)	
	Some college	2,537	1,175,066	61.1	(58.4, 63.7)	
	BA	2,451	1,329,368	58.2	(55.7, 60.7)	
	MS or professional degree	2,114	642,663	50.8	(48.3, 53.4)	
	PHD	557	173,441	35.3	(30.7, 40.3)	
Employment						<0.0001
	Employed	5,481	3,101,508	62.3	(60.5, 64.2)	
	Unemployed	352	269,070	66.5	(59.4, 73.0)	
	Homemaker	357	212,919	47.4	(40.6, 54.4)	
	Student	329	386,133	32.6	(26.4, 39.4)	
	Retired	2,475	856,586	57.6	(55.0, 60.1)	
	Disabled	367	292,316	49.6	(42.4, 56.8)	
Income						0.0015
	Less than $15,000	844	666,216	51.7	(46.9, 56.4)	
	$15,000 - <$30,000	1,030	642,175	57.3	(52.8, 61.7)	
	$30,000 - <$50,000	1,324	684,649	58.4	(54.2, 62.4)	
	$50,000 - <$100,000	2,476	1,245,311	62.8	(59.9, 65.5)	
	$100,000 -<$150,000	1,370	718,388	62.9	(59.1, 66.6)	

		Unweighted N[1]	Weighted N[2]	% participated %	95% CI[3]	p-value[4]
	$150,000 or more	1,129	524,640	59.6	(55.8, 63.2)	
Marital status						<0.0001
	Never married	1,583	1,298,962	48.6	(44.9, 52.2)	
	Living with partner	633	438,669	61.8	(56.7, 66.7)	
	Married	5,045	2,509,344	62.4	(60.6, 64.2)	
	Divorced or Separated	1,183	528,253	63.4	(59.4, 67.2)	
	Widowed	878	327,661	52.5	(48.1, 56.9)	
Military status						<0.0001
	No military	8,518	4,797,830	57.0	(55.5, 58.6)	
	Yes, served prior to Sept 2001	853	319,700	72.0	(68.0, 75.6)	
	Yes, served Sept 2001 or later	68	46,512	67.2	(51.1, 80.1)	
Drug and alcohol use problems Drug and alcohol						0.0500
	No	9,313	5,058,278	57.7	(56.3, 59.2)	
	Yes	159	133,018	68.3	(57.2, 77.7)	
Tobacco Use						<0.0001
	No	8,145	4,240,152	55.9	(54.3, 57.4)	
	Yes	1,234	909,416	69.1	(65.1, 72.8)	
Self-reported Health status						0.0006
	Excellent	2,041	1,057,416	54.7	(51.6, 57.8)	
	Very Good	3,661	1,914,762	59.3	(56.9, 61.6)	
	Good	2,657	1,525,178	61.6	(58.9, 64.3)	
	Fair	950	580,872	53.1	(48.4, 57.7)	
	Poor	231	149,343	48.6	(39.2, 58.1)	
Region						0.0010
	Western Massachusetts	2,763	664,601	59.3	(56.7, 61.8)	
	Greater Boston	5,294	3,564,262	56.3	(54.5, 58.2)	
	South Eastern Massachusetts	1,498	1,005,973	63.5	(60.0, 66.8)	
County						<0.0001
	Barnstable/Dukes/Nantucket	381	205,045	60.7	(53.7, 67.3)	
	BERKSHIRE	496	113,296	56.8	(50.5, 62.9)	
	BRISTOL	575	454,402	61.9	(56.3, 67.3)	
	ESSEX	867	578,310	60.8	(56.2, 65.2)	
	FRANKLIN	310	58,978	57.5	(50.4, 64.3)	
	HAMPDEN	1,333	364,372	62.8	(59.2, 66.2)	
	HAMPSHIRE	624	127,955	52.3	(46.9, 57.6)	
	MIDDLESEX	1,949	1,159,630	52.5	(49.5, 55.5)	
	NORFOLK	820	505,472	60.6	(56.1, 65.0)	
	PLYMOUTH	542	346,526	67.1	(61.6, 72.3)	

		Unweighted N[1]	Weighted N[2]	% participated		
				%[3]	95% CI[3]	p-value[4]
	SUFFOLK	650	587,198	49.7	(44.6, 54.8)	
	WORCESTER	1,008	733,651	61.3	(56.9, 65.5)	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

[4] P-value from chi-square test for differences across groups

Table 50 Past-year instant games participation

		Unweighted N[1]	Weighted N[2]	% participated		p-value[4]
				%[3]	95% CI[3]	
Overall		9,515	5,210,024	37.2	(35.8, 38.7)	
Gender						0.0002
	Male	3,782	2,428,357	40.3	(38.0, 42.7)	
	Female	5,626	2,718,553	34.8	(33.1, 36.5)	
Age						<0.0001
	18-20	99	210,717	15.7	(9.0, 26.0)	
	21-24	246	327,588	23.7	(17.7, 31.0)	
	25-34	994	903,108	32.1	(28.4, 36.1)	
	35-54	2,889	1,705,549	42.9	(40.3, 45.6)	
	55-64	1,968	864,201	43.1	(40.1, 46.0)	
	65-79	2,081	656,547	40.4	(37.7, 43.2)	
	80+	771	266,982	33.7	(29.5, 38.2)	
Race/Ethnicity						<0.0001
	Hispanic	475	428,048	36.1	(30.2, 42.4)	
	Black	363	348,814	44.1	(37.3, 51.2)	
	White	7,906	3,910,943	38.2	(36.7, 39.8)	
	Asian	365	281,217	18.5	(13.5, 24.8)	
	Other	83	49,119	33.8	(20.7, 50.0)	
Education						<0.0001
	Less than high school	392	449,069	37.3	(31.3, 43.8)	
	HS or GED	1,307	1,344,568	43.8	(40.2, 47.5)	
	Some college	2,523	1,168,358	42.0	(39.4, 44.6)	
	BA	2,449	1,327,864	34.3	(31.9, 36.8)	
	MS or professional degree	2,107	639,441	27.9	(25.7, 30.3)	
	PHD	556	173,079	15.4	(12.2, 19.2)	
Employment						<0.0001
	Employed	5,460	3,092,669	39.1	(37.2, 41.0)	
	Unemployed	350	266,800	40.9	(33.6, 48.7)	
	Homemaker	357	212,919	31.3	(25.5, 37.8)	
	Student	328	385,072	16.8	(12.4, 22.3)	
	Retired	2,466	852,322	39.8	(37.3, 42.4)	
	Disabled	360	284,392	41.4	(34.4, 48.8)	
Income						0.0314
	Less than $15,000	834	657,552	37.8	(33.2, 42.6)	
	$15,000 - <$30,000	1,025	637,319	41.1	(36.7, 45.6)	
	$30,000 - <$50,000	1,320	683,079	39.1	(35.2, 43.1)	
	$50,000 - <$100,000	2,471	1,244,055	40.4	(37.5, 43.3)	
	$100,000 -<$150,000	1,367	716,777	38.2	(34.5, 42.0)	

		Unweighted N[1]	Weighted N[2]	% participated		p-value[4]
				%[3]	95% CI[3]	
	$150,000 or more	1,126	523,790	32.7	(29.0, 36.6)	
Marital status						<0.0001
	Never married	1,574	1,291,167	31.3	(28.0, 34.8)	
	Living with partner	629	435,640	42.1	(37.0, 47.4)	
	Married	5,031	2,503,153	38.8	(36.9, 40.7)	
	Divorced or Separated	1,179	526,449	43.1	(39.0, 47.3)	
	Widowed	873	323,602	35.7	(31.6, 40.0)	
Military status						<0.0001
	No military	8,482	4,775,160	36.5	(35.0, 38.0)	
	Yes, served prior to Sept 2001	850	318,540	47.8	(43.2, 52.4)	
	Yes, served Sept 2001 or later	68	46,512	50.7	(34.5, 66.7)	
Drug and alcohol use problems						0.0007
	No	9,277	5,036,430	36.6	(35.2, 38.1)	
	Yes	158	131,294	57.3	(46.4, 67.6)	
Tobacco Use						<0.0001
	No	8,113	4,223,252	35.0	(33.5, 36.6)	
	Yes	1,228	903,372	47.8	(43.8, 51.9)	
Self-reported Health status						<0.0001
	Excellent	2,032	1,052,127	29.9	(27.0, 32.9)	
	Very Good	3,651	1,910,977	36.8	(34.5, 39.0)	
	Good	2,647	1,517,142	42.2	(39.4, 45.1)	
	Fair	941	575,904	37.6	(33.3, 42.1)	
	Poor	229	146,608	42.0	(32.9, 51.5)	
Region						<0.0001
	Western Massachusetts	2,751	661,631	41.5	(39.0, 44.1)	
	Greater Boston	5,273	3,549,159	34.7	(32.9, 36.5)	
	South Eastern Massachusetts	1,491	999,234	43.5	(40.1, 47.0)	
County						<0.0001
	Barnstable/Dukes/Nantucket	381	204,187	40.4	(33.3, 47.9)	
	BERKSHIRE	489	111,477	40.6	(34.7, 46.7)	
	BRISTOL	569	449,032	45.4	(40.0, 50.9)	
	ESSEX	864	575,857	36.6	(32.2, 41.2)	
	FRANKLIN	309	58,578	41.3	(34.4, 48.5)	
	HAMPDEN	1,328	363,277	45.5	(41.9, 49.2)	
	HAMPSHIRE	625	128,298	31.1	(26.6, 36.1)	
	MIDDLESEX	1,939	1,152,501	32.1	(29.4, 34.9)	
	NORFOLK	821	506,559	34.3	(30.0, 38.8)	

		Unweighted N[1]	Weighted N[2]	% participated		
				%[3]	95% CI[3]	p-value[4]
	PLYMOUTH	541	346,015	43.0	(37.5, 48.6)	
	SUFFOLK	646	583,621	30.3	(25.7, 35.3)	
	WORCESTER	1,003	730,621	41.0	(36.8, 45.3)	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

[4] P-value from chi-square test for differences across groups

Table 51 Past-year daily games participation

		Unweighted N[1]	Weighted N[2]	% participated			p-value[4]
					%[3]	95% CI[3]	
Overall		9,511	5,209,060		14.1	(13.1, 15.2)	
Gender							<0.0001
	Male	3,778	2,426,532		17.4	(15.6, 19.4)	
	Female	5,626	2,719,543		11.2	(10.1, 12.4)	
Age							<0.0001
	18-20	100	211,399	*	4.4	(1.8, 10.2)	
	21-24	245	327,320		9.4	(5.4, 15.8)	
	25-34	997	906,677		12.4	(9.9, 15.4)	
	35-54	2,889	1,704,361		16.9	(14.9, 19.1)	
	55-64	1,972	863,111		18.5	(16.2, 21.1)	
	65-79	2,074	653,839		13.0	(11.1, 15.0)	
	80+	769	267,234		10.5	(7.7, 14.0)	
Race/Ethnicity							0.0004
	Hispanic	479	432,212		12.3	(8.7, 17.0)	
	Black	362	346,240		15.1	(10.7, 20.8)	
	White	7,899	3,908,032		14.9	(13.8, 16.2)	
	Asian	365	281,217		6.8	(4.3, 10.7)	
	Other	83	49,119	*	19.3	(8.3, 38.6)	
Education							<0.0001
	Less than high school	389	446,831		15.0	(10.9, 20.4)	
	HS or GED	1,308	1,344,609		18.7	(16.0, 21.7)	
	Some college	2,526	1,171,661		15.4	(13.6, 17.3)	
	BA	2,446	1,325,693		12.8	(11.2, 14.5)	
	MS or professional degree	2,106	639,930		7.6	(6.4, 9.1)	
	PHD	555	172,848		2.1	(1.2, 3.7)	
Employment							<0.0001
	Employed	5,466	3,090,106		14.8	(13.5, 16.3)	
	Unemployed	349	267,699		25.2	(18.6, 33.2)	
	Homemaker	356	212,465		10.1	(6.4, 15.7)	
	Student	328	385,865		6.5	(3.7, 11.3)	
	Retired	2,453	848,103		13.1	(11.3, 15.0)	
	Disabled	366	289,771		13.5	(9.6, 18.8)	
Income							0.0095
	Less than $15,000	839	659,290		14.3	(11.2, 18.0)	
	$15,000 - <$30,000	1,025	640,229		13.1	(10.2, 16.6)	
	$30,000 - <$50,000	1,318	681,582		15.4	(12.7, 18.5)	
	$50,000 - <$100,000	2,464	1,239,504		18.6	(16.4, 21.2)	
	$100,000 -<$150,000	1,367	716,301		13.4	(10.9, 16.3)	
	$150,000 or more	1,125	522,576		12.0	(9.2, 15.5)	

				% participated		
		Unweighted N[1]	Weighted N[2]	%[3]	95% CI[3]	p-value[4]
Marital status						0.0059
	Never married	1,578	1,296,718	12.2	(10.0, 14.8)	
	Living with partner	629	434,886	17.7	(14.0, 22.2)	
	Married	5,020	2,495,245	13.5	(12.2, 15.0)	
	Divorced or Separated	1,182	526,083	19.6	(16.2, 23.5)	
	Widowed	871	325,328	14.5	(11.3, 18.3)	
Military status						0.0001
	No military	8,484	4,776,001	13.5	(12.4, 14.7)	
	Yes, served prior to Sept 2001	845	316,908	20.8	(17.4, 24.6)	
	Yes, served Sept 2001 or later	68	46,512	34.4	(19.4, 53.2)	
Drug and alcohol use problems						0.0504
	No	9,272	5,036,911	13.8	(12.7, 14.9)	
	Yes	157	129,020	21.9	(14.8, 31.2)	
Tobacco Use						<0.0001
	No	8,107	4,218,765	12.7	(11.6, 13.8)	
	Yes	1,229	905,060	20.8	(17.8, 24.2)	
Self-reported Health status						0.1460
	Excellent	2,025	1,048,975	11.5	(9.4, 14.1)	
	Very Good	3,648	1,907,697	14.3	(12.7, 16.0)	
	Good	2,647	1,518,866	15.3	(13.3, 17.5)	
	Fair	945	576,914	14.3	(11.6, 17.5)	
	Poor	231	149,343	17.4	(11.8, 25.1)	
Region						0.2445
	Western Massachusetts	2,757	663,797	14.9	(13.2, 16.9)	
	Greater Boston	5,268	3,545,470	13.5	(12.2, 14.9)	
	South Eastern Massachusetts	1,486	999,793	15.6	(13.2, 18.4)	
County						0.0069
	Barnstable/Dukes/Nantucket	378	204,401	15.7	(10.1, 23.5)	
	BERKSHIRE	492	112,448	17.3	(13.1, 22.6)	
	BRISTOL	570	450,654	15.2	(11.8, 19.5)	
	ESSEX	857	570,035	14.5	(11.5, 18.3)	
	FRANKLIN	306	58,313	8.9	(5.8, 13.2)	
	HAMPDEN	1,334	364,946	16.8	(14.2, 19.7)	
	HAMPSHIRE	625	128,089	10.4	(7.7, 13.7)	
	MIDDLESEX	1,942	1,155,909	13.0	(10.9, 15.3)	
	NORFOLK	821	506,325	11.4	(8.8, 14.6)	
	PLYMOUTH	538	344,738	16.0	(12.4, 20.4)	

	Unweighted N[1]	Weighted N[2]	% participated		
			%[3]	95% CI[3]	p-value[4]
SUFFOLK	644	580,623	12.4	(9.2, 16.4)	
WORCESTER	1,004	732,578	15.9	(12.9, 19.4)	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 52 Past-year raffle participation

		Unweighted N[1]	Weighted N[2]	% participated		
				%[3]	95% CI[3]	p-value[4]
Overall		9,494	5,194,098	31.5	(30.2, 32.8)	
Gender						0.3955
	Male	3,772	2,422,272	30.8	(28.8, 33.0)	
	Female	5,616	2,709,458	32.0	(30.4, 33.6)	
Age						<0.0001
	18-20	100	211,399	16.8	(9.6, 27.8)	
	21-24	246	327,588	14.4	(9.8, 20.7)	
	25-34	995	904,804	24.1	(20.9, 27.5)	
	35-54	2,887	1,699,733	37.7	(35.3, 40.2)	
	55-64	1,967	860,354	38.4	(35.6, 41.3)	
	65-79	2,072	651,480	33.9	(31.4, 36.6)	
	80+	763	264,417	28.0	(24.1, 32.3)	
Race/Ethnicity						<0.0001
	Hispanic	476	428,044	18.8	(14.6, 23.8)	
	Black	362	344,626	22.7	(17.3, 29.3)	
	White	7,886	3,898,205	35.1	(33.6, 36.6)	
	Asian	363	280,390	12.1	(8.3, 17.3)	
	Other	82	48,540	31.4	(18.4, 48.2)	
Education						<0.0001
	Less than high school	390	447,465	22.8	(17.6, 29.0)	
	HS or GED	1,300	1,332,597	27.6	(24.6, 30.9)	
	Some college	2,522	1,169,244	31.6	(29.3, 34.0)	
	BA	2,442	1,324,509	37.1	(34.7, 39.5)	
	MS or professional degree	2,105	639,653	36.0	(33.6, 38.4)	
	PHD	554	172,610	26.8	(22.8, 31.3)	
Employment						<0.0001
	Employed	5,463	3,086,084	35.5	(33.8, 37.3)	
	Unemployed	348	265,716	26.0	(19.8, 33.2)	
	Homemaker	354	210,729	26.0	(20.9, 31.8)	
	Student	328	385,718	17.3	(12.5, 23.5)	
	Retired	2,445	841,705	31.5	(29.2, 33.9)	
	Disabled	363	288,736	16.6	(12.0, 22.5)	
Income						<0.0001
	Less than $15,000	837	660,561	16.0	(13.1, 19.5)	
	$15,000 - <$30,000	1,018	634,937	21.2	(18.2, 24.5)	
	$30,000 - <$50,000	1,310	670,525	29.0	(25.5, 32.8)	
	$50,000 - <$100,000	2,464	1,239,298	36.9	(34.2, 39.8)	
	$100,000 -<$150,000	1,367	716,832	42.1	(38.3, 45.9)	
	$150,000 or more	1,126	523,651	43.5	(39.7, 47.3)	

		Unweighted N[1]	Weighted N[2]	% participated		p-value[4]
				%[3]	95% CI[3]	
Marital status						<0.0001
	Never married	1,573	1,291,717	21.4	(18.6, 24.4)	
	Living with partner	630	435,651	27.5	(23.2, 32.2)	
	Married	5,012	2,486,244	37.1	(35.3, 38.9)	
	Divorced or Separated	1,180	526,306	31.6	(27.9, 35.6)	
	Widowed	869	323,416	33.5	(29.5, 37.8)	
Military status						0.0158
	No military	8,467	4,762,244	31.1	(29.8, 32.5)	
	Yes, served prior to Sept 2001	845	315,618	37.5	(33.1, 42.0)	
	Yes, served Sept 2001 or later	68	46,512	42.0	(26.5, 59.3)	
Drug and alcohol use problems						0.7538
	No	9,253	5,018,982	31.5	(30.2, 32.8)	
	Yes	159	133,018	30.0	(21.7, 39.9)	
Tobacco Use						0.0061
	No	8,091	4,205,000	32.4	(31.0, 33.8)	
	Yes	1,228	904,211	27.2	(23.9, 30.7)	
Self-reported Health status						<0.0001
	Excellent	2,026	1,051,558	31.9	(29.2, 34.8)	
	Very Good	3,644	1,901,501	34.6	(32.5, 36.8)	
	Good	2,640	1,511,603	31.3	(28.8, 33.9)	
	Fair	941	575,577	23.6	(20.2, 27.3)	
	Poor	228	146,594	19.0	(13.6, 26.0)	
Region						0.0048
	Western Massachusetts	2,756	663,015	35.0	(32.7, 37.3)	
	Greater Boston	5,250	3,531,918	30.4	(28.7, 32.0)	
	South Eastern Massachusetts	1,488	999,165	33.1	(30.0, 36.3)	
County						0.0002
	Barnstable/Dukes/Nantucket	379	205,374	37.7	(31.0, 44.9)	
	BERKSHIRE	493	112,708	38.9	(33.4, 44.7)	
	BRISTOL	569	448,723	32.0	(27.2, 37.2)	
	ESSEX	860	573,552	32.4	(28.4, 36.6)	
	FRANKLIN	308	58,625	42.4	(35.8, 49.4)	
	HAMPDEN	1,332	363,988	32.8	(29.6, 36.1)	
	HAMPSHIRE	623	127,694	34.4	(29.7, 39.4)	
	MIDDLESEX	1,932	1,149,952	31.7	(29.0, 34.5)	
	NORFOLK	819	504,137	28.8	(25.1, 32.9)	

		Unweighted N[1]	Weighted N[2]	% participated		
				%[3]	95% CI[3]	p-value[4]
	PLYMOUTH	540	345,067	31.7	(27.0, 36.8)	
	SUFFOLK	645	582,547	23.9	(19.9, 28.4)	
	WORCESTER	994	721,730	32.9	(29.1, 37.0)	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

[4] P-value from chi-square test for differences across groups

Table 53 Past-year casino participation

		Unweighted N[1]	Weighted N[2]	% participated		p-value[4]
				%[3]	95% CI[3]	
Overall		9,028	4,891,337	21.5	(20.3, 22.7)	
Gender						0.0039
	Male	3,625	2,302,915	23.5	(21.6, 25.6)	
	Female	5,311	2,533,823	19.8	(18.4, 21.4)	
Age						<0.0001
	18-20	93	200,855	* 8.2	(3.7, 17.2)	
	21-24	235	311,039	18.4	(13.2, 24.9)	
	25-34	957	855,101	28.6	(25.0, 32.3)	
	35-54	2,783	1,622,336	20.9	(18.8, 23.1)	
	55-64	1,883	807,743	23.3	(20.6, 26.1)	
	65-79	1,940	591,895	22.2	(19.9, 24.8)	
	80+	702	243,336	15.6	(12.3, 19.6)	
Race/Ethnicity						0.0012
	Hispanic	430	382,374	13.5	(9.5, 18.8)	
	Black	327	299,314	23.0	(17.3, 29.8)	
	White	7,537	3,711,041	22.8	(21.5, 24.3)	
	Asian	352	270,808	17.5	(12.8, 23.3)	
	Other	80	46,743	* 15.9	(8.5, 27.6)	
Education						<0.0001
	Less than high school	325	393,688	14.8	(10.2, 20.9)	
	HS or GED	1,175	1,197,657	22.7	(19.7, 25.9)	
	Some college	2,386	1,115,324	24.3	(22.1, 26.6)	
	BA	2,385	1,293,818	23.7	(21.4, 26.1)	
	MS or professional degree	2,056	625,623	17.6	(15.6, 19.8)	
	PHD	544	170,097	11.4	(8.4, 15.3)	
Employment						<0.0001
	Employed	5,264	2,945,004	24.1	(22.5, 25.8)	
	Unemployed	325	235,717	21.4	(15.5, 28.6)	
	Homemaker	335	200,521	10.0	(6.4, 15.4)	
	Student	321	378,953	14.2	(10.0, 19.7)	
	Retired	2,285	776,739	22.1	(19.9, 24.6)	
	Disabled	321	247,435	11.5	(7.4, 17.4)	
Income						<0.0001
	Less than $15,000	738	564,588	14.0	(10.8, 18.0)	
	$15,000 - <$30,000	934	573,664	17.2	(14.1, 20.8)	
	$30,000 - <$50,000	1,238	626,191	21.3	(18.0, 24.9)	
	$50,000 - <$100,000	2,378	1,197,739	26.1	(23.5, 28.8)	
	$100,000 -<$150,000	1,328	701,030	25.9	(22.5, 29.5)	
	$150,000 or more	1,103	513,261	24.1	(20.7, 27.8)	

		Unweighted N[1]	Weighted N[2]	% participated		p-value[4]
				%[3]	95% CI[3]	
Marital status						0.0776
	Never married	1,511	1,215,387	20.0	(17.3, 23.0)	
	Living with partner	599	410,320	24.9	(20.7, 29.6)	
	Married	4,835	2,396,760	22.4	(20.8, 24.2)	
	Divorced or Separated	1,078	463,048	18.3	(15.2, 22.0)	
	Widowed	799	293,449	23.1	(19.4, 27.3)	
Military status						0.4722
	No military	8,043	4,473,456	21.4	(20.1, 22.7)	
	Yes, served prior to Sept 2001	808	302,888	24.0	(20.2, 28.3)	
	Yes, served Sept 2001 or later	66	45,857	* 19.6	(10.4, 34.1)	
Drug and alcohol use problems						0.7320
	No	8,814	4,734,143	21.5	(20.3, 22.8)	
	Yes	153	129,021	20.1	(13.2, 29.3)	
Tobacco Use						0.0047
	No	7,733	3,980,846	20.6	(19.3, 21.9)	
	Yes	1,148	842,249	26.0	(22.6, 29.7)	
Self-reported Health status						0.0117
	Excellent	1,957	1,003,986	19.1	(16.5, 22.0)	
	Very Good	3,500	1,814,286	23.7	(21.7, 25.7)	
	Good	2,479	1,413,236	22.0	(19.8, 24.5)	
	Fair	872	521,186	17.3	(14.0, 21.1)	
	Poor	207	132,945	21.0	(13.8, 30.6)	
Region						0.6805
	Western Massachusetts	2,593	613,200	22.1	(20.0, 24.3)	
	Greater Boston	5,028	3,347,621	21.1	(19.6, 22.8)	
	South Eastern Massachusetts	1,407	930,517	22.3	(19.7, 25.3)	
County						<0.0001
	Barnstable/Dukes/Nantucket	356	192,323	12.9	(9.0, 18.3)	
	BERKSHIRE	465	103,504	20.9	(16.4, 26.2)	
	BRISTOL	535	415,619	26.4	(22.0, 31.4)	
	ESSEX	825	543,827	15.8	(12.5, 19.6)	
	FRANKLIN	287	53,796	20.6	(15.2, 27.2)	
	HAMPDEN	1,244	333,499	24.4	(21.3, 27.6)	
	HAMPSHIRE	597	122,401	17.5	(13.5, 22.5)	
	MIDDLESEX	1,865	1,105,384	19.8	(17.4, 22.5)	
	NORFOLK	780	477,527	21.3	(17.7, 25.6)	
	PLYMOUTH	516	322,575	22.7	(18.4, 27.6)	

		Unweighted N[1]	Weighted N[2]	% participated		
				%[3]	95% CI[3]	p-value[4]
	SUFFOLK	609	542,062	23.3	(19.1, 28.1)	
	WORCESTER	949	678,820	25.7	(22.1, 29.7)	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 54 Past-year sports betting participation

		Unweighted N[1]	Weighted N[2]		% participated %[3]	95% CI[3]	p-value[4]
Overall		9,536	5,224,027		12.6	(11.6, 13.7)	
Gender							<0.0001
	Male	3,790	2,432,634		19.2	(17.4, 21.2)	
	Female	5,637	2,727,251		6.8	(5.9, 7.7)	
Age							<0.0001
	18-20	100	211,399	*	12.6	(6.7, 22.4)	
	21-24	245	324,774		15.5	(10.4, 22.6)	
	25-34	999	908,551		15.1	(12.4, 18.3)	
	35-54	2,891	1,708,791		15.6	(13.7, 17.6)	
	55-64	1,971	864,622		10.9	(9.2, 12.9)	
	65-79	2,084	657,091		7.8	(6.5, 9.3)	
	80+	775	269,721		4.5	(3.0, 6.7)	
Race/Ethnicity							<0.0001
	Hispanic	481	432,702		9.7	(6.1, 15.0)	
	Black	364	345,549		14.0	(9.2, 20.6)	
	White	7,915	3,920,178		13.7	(12.6, 14.9)	
	Asian	365	281,217	*	4.1	(2.1, 8.0)	
	Other	83	49,119	*	9.8	(2.8, 28.9)	
Education							<0.0001
	Less than high school	396	453,770		5.8	(3.3, 10.2)	
	HS or GED	1,316	1,349,865		12.0	(9.6, 14.9)	
	Some college	2,528	1,172,683		11.3	(9.6, 13.4)	
	BA	2,448	1,324,745		16.7	(14.8, 18.9)	
	MS or professional degree	2,109	640,739		14.6	(12.8, 16.6)	
	PHD	555	172,556		8.8	(6.2, 12.2)	
Employment							<0.0001
	Employed	5,464	3,094,276		15.8	(14.3, 17.3)	
	Unemployed	354	270,863		13.4	(8.7, 20.2)	
	Homemaker	357	212,924		4.6	(2.6, 8.2)	
	Student	328	383,319		13.4	(9.2, 19.1)	
	Retired	2,471	855,535		6.2	(5.2, 7.5)	
	Disabled	364	288,830		3.9	(2.2, 6.9)	
Income							<0.0001
	Less than $15,000	840	660,621		7.0	(4.5, 10.6)	
	$15,000 - <$30,000	1,028	640,128		6.6	(4.6, 9.4)	
	$30,000 - <$50,000	1,323	684,164		9.7	(7.2, 13.1)	
	$50,000 - <$100,000	2,472	1,245,306		14.7	(12.7, 17.0)	
	$100,000 -<$150,000	1,367	717,187		19.4	(16.4, 22.8)	

		Unweighted N[1]	Weighted N[2]	% participated		p-value[4]
				%[3]	95% CI[3]	
	$150,000 or more	1,124	522,932	22.1	(18.7, 26.0)	
Marital status						<0.0001
	Never married	1,581	1,295,914	13.7	(11.3, 16.5)	
	Living with partner	630	437,435	13.3	(10.1, 17.4)	
	Married	5,030	2,503,544	13.4	(12.0, 14.8)	
	Divorced or Separated	1,182	526,435	11.4	(8.7, 14.9)	
	Widowed	878	327,607	5.9	(4.1, 8.6)	
Military status						0.0055
	No military	8,501	4,788,033	12.2	(11.1, 13.3)	
	Yes, served prior to Sept 2001	851	318,687	16.7	(13.5, 20.6)	
	Yes, served Sept 2001 or later	68	46,512	35.9	(20.7, 54.6)	
Drug and alcohol use problems						0.0289
	No	9,294	5,047,469	12.4	(11.4, 13.5)	
	Yes	159	133,018	23.2	(15.2, 33.7)	
Tobacco Use						0.0157
	No	8,129	4,231,694	12.0	(11.0, 13.2)	
	Yes	1,231	907,280	16.1	(13.2, 19.4)	
Self-reported Health status						0.0003
	Excellent	2,036	1,055,018	14.4	(11.9, 17.3)	
	Very Good	3,656	1,913,183	13.2	(11.7, 15.0)	
	Good	2,650	1,519,317	13.0	(11.1, 15.1)	
	Fair	951	581,266	7.7	(5.8, 10.2)	
	Poor	228	147,977	* 8.3	(3.7, 17.5)	
Region						0.1113
	Western Massachusetts	2,760	664,895	11.2	(9.5, 13.2)	
	Greater Boston	5,282	3,556,093	13.3	(12.0, 14.7)	
	South Eastern Massachusetts	1,494	1,003,038	11.2	(9.1, 13.7)	
County						0.2677
	Barnstable/Dukes/Nantucket	382	205,909	9.5	(6.2, 14.2)	
	BERKSHIRE	493	112,509	12.4	(9.1, 16.7)	
	BRISTOL	575	454,402	10.7	(7.5, 15.1)	
	ESSEX	864	577,405	13.9	(10.7, 17.9)	
	FRANKLIN	308	58,642	8.7	(5.3, 14.2)	
	HAMPDEN	1,335	365,676	12.1	(9.6, 15.2)	
	HAMPSHIRE	624	128,068	8.8	(6.0, 12.9)	
	MIDDLESEX	1,943	1,153,870	14.2	(12.0, 16.7)	

		Unweighted N[1]	Weighted N[2]	% participated		
				%[3]	95% CI[3]	p-value[4]
	NORFOLK	822	506,574	11.4	(8.9, 14.5)	
	PLYMOUTH	537	342,727	13.0	(9.6, 17.2)	
	SUFFOLK	649	586,940	13.7	(10.3, 18.1)	
	WORCESTER	1,004	731,305	12.5	(9.9, 15.5)	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

[4] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 55 Past-year private wagering participation

		Unweighted N[1]	Weighted N[2]	% participated		
				%[3]	95% CI[3]	p-value[4]
Overall		9,488	5,191,930	11.1	(10.1, 12.2)	
Gender						<0.0001
	Male	3,777	2,421,076	17.5	(15.7, 19.5)	
	Female	5,611	2,711,821	5.3	(4.5, 6.3)	
Age						<0.0001
	18-20	99	206,962	22.6	(14.3, 33.8)	
	21-24	246	327,588	17.0	(11.8, 24.0)	
	25-34	995	904,826	15.6	(12.8, 18.8)	
	35-54	2,875	1,694,894	10.7	(9.1, 12.6)	
	55-64	1,970	865,646	8.6	(7.1, 10.5)	
	65-79	2,078	654,784	6.6	(5.4, 8.0)	
	80+	768	266,413	4.8	(3.1, 7.2)	
Race/Ethnicity						0.0510
	Hispanic	477	429,514	6.2	(3.6, 10.6)	
	Black	364	349,067	12.7	(8.2, 19.2)	
	White	7,888	3,897,579	11.7	(10.6, 12.8)	
	Asian	362	280,058	10.4	(6.2, 17.0)	
	Other	83	49,119		---	
Education						0.0001
	Less than high school	393	446,423	7.3	(4.1, 12.6)	
	HS or GED	1,305	1,338,084	9.5	(7.3, 12.4)	
	Some college	2,517	1,169,339	11.1	(9.3, 13.2)	
	BA	2,446	1,326,420	14.3	(12.4, 16.4)	
	MS or professional degree	2,104	639,208	11.4	(9.8, 13.3)	
	PHD	553	171,423	6.9	(4.8, 9.8)	
Employment						<0.0001
	Employed	5,447	3,082,610	12.4	(11.1, 13.8)	
	Unemployed	352	268,328	10.1	(6.3, 15.9)	
	Homemaker	357	213,004	* 6.7	(3.1, 13.7)	
	Student	328	381,696	20.4	(15.0, 27.1)	
	Retired	2,455	848,281	5.8	(4.8, 7.0)	
	Disabled	366	288,787	* 5.5	(2.8, 10.5)	
Income						<0.0001
	Less than $15,000	841	663,101	8.9	(6.2, 12.6)	
	$15,000 - <$30,000	1,023	636,548	7.4	(5.1, 10.5)	
	$30,000 - <$50,000	1,312	676,240	7.4	(5.3, 10.1)	
	$50,000 - <$100,000	2,458	1,236,646	13.6	(11.5, 16.1)	
	$100,000 -<$150,000	1,356	709,233	14.3	(11.7, 17.4)	
	$150,000 or more	1,127	523,657	18.4	(15.0, 22.4)	

		Unweighted N[1]	Weighted N[2]		% participated %[3]	95% CI[3]	p-value[4]
Marital status							<0.0001
	Never married	1,576	1,291,242		16.1	(13.4, 19.3)	
	Living with partner	627	434,092		13.6	(10.4, 17.5)	
	Married	5,011	2,487,925		9.6	(8.5, 10.8)	
	Divorced or Separated	1,183	529,556		8.0	(5.8, 11.1)	
	Widowed	870	324,661		4.5	(3.2, 6.4)	
Military status							0.1858
	No military	8,464	4,763,492		10.8	(9.8, 12.0)	
	Yes, served prior to Sept 2001	848	317,298		11.9	(9.4, 14.9)	
	Yes, served Sept 2001 or later	67	45,263	*	28.7	(14.5, 48.8)	
Drug and alcohol use problems							0.0021
	No	9,247	5,017,253		10.7	(9.7, 11.8)	
	Yes	159	133,018		27.3	(18.6, 38.1)	
Tobacco Use							<0.0001
	No	8,086	4,205,619		9.8	(8.8, 10.9)	
	Yes	1,229	903,633		17.4	(14.3, 21.0)	
Self-reported Health status							0.0455
	Excellent	2,030	1,052,648		11.9	(9.7, 14.5)	
	Very Good	3,641	1,902,360		12.1	(10.5, 14.0)	
	Good	2,634	1,508,357		11.0	(9.2, 13.0)	
	Fair	939	573,052		7.4	(5.1, 10.6)	
	Poor	229	148,247	*	8.0	(3.6, 16.7)	
Region							0.4445
	Western Massachusetts	2,748	661,367		10.0	(8.4, 11.8)	
	Greater Boston	5,254	3,529,804		11.4	(10.1, 12.7)	
	South Eastern Massachusetts	1,486	1,000,758		10.9	(8.6, 13.6)	
County							0.3583
	Barnstable/Dukes/Nantucket	378	204,117	*	10.2	(5.5, 18.3)	
	BERKSHIRE	492	112,175		11.8	(7.9, 17.4)	
	BRISTOL	570	452,447		9.5	(6.5, 13.7)	
	ESSEX	859	567,169		12.6	(9.4, 16.7)	
	FRANKLIN	307	58,583		10.1	(5.7, 17.2)	
	HAMPDEN	1,326	362,749		9.5	(7.6, 11.8)	
	HAMPSHIRE	623	127,860		9.7	(6.3, 14.6)	
	MIDDLESEX	1,935	1,151,091		11.9	(9.8, 14.3)	
	NORFOLK	818	503,043		9.7	(7.3, 12.7)	

		Unweighted N[1]	Weighted N[2]	% participated		
				%[3]	95% CI[3]	p-value[4]
	PLYMOUTH	538	344,195	13.0	(9.4, 17.6)	
	SUFFOLK	649	585,943	14.2	(10.7, 18.5)	
	WORCESTER	993	722,559	8.4	(6.3, 11.3)	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

[4] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Note: A dash --- indicates that the cell size is less than or equal to 5

Table 56 Past-year horse racing participation

		Unweighted N[1]	Weighted N[2]	% participated			p-value[4]
					%[3]	95% CI[3]	
Overall		9,542	5,214,938		3.4	(2.9, 4.0)	
Gender							<0.0001
	Male	3,790	2,423,147		5.0	(4.0, 6.1)	
	Female	5,644	2,728,252		2.0	(1.6, 2.6)	
Age							<0.0001
	18-20	99	206,962			---	
	21-24	246	327,588	*	2.8	(1.1, 6.9)	
	25-34	998	905,344		3.5	(2.3, 5.3)	
	35-54	2,893	1,703,074		3.5	(2.6, 4.7)	
	55-64	1,973	867,061		4.9	(3.6, 6.6)	
	65-79	2,091	659,399		3.4	(2.6, 4.6)	
	80+	773	268,412		2.3	(1.3, 4.0)	
Race/Ethnicity							0.0032
	Hispanic	478	427,659	*	1.6	(0.6, 4.4)	
	Black	364	347,754			---	
	White	7,928	3,916,657		4.0	(3.4, 4.7)	
	Asian	365	281,217	*	1.5	(0.6, 3.7)	
	Other	83	49,119			---	
Education							0.0356
	Less than high school	393	444,449	*	3.0	(1.5, 5.8)	
	HS or GED	1,314	1,346,252		3.9	(2.6, 5.7)	
	Some college	2,531	1,172,509		2.5	(1.9, 3.3)	
	BA	2,456	1,330,049		4.3	(3.3, 5.5)	
	MS or professional degree	2,114	642,177		3.3	(2.5, 4.4)	
	PHD	555	172,818	*	1.8	(0.9, 3.7)	
Employment							0.3484
	Employed	5,474	3,093,184		3.3	(2.7, 4.0)	
	Unemployed	354	270,399	*	7.2	(3.5, 14.1)	
	Homemaker	357	212,942	*	1.9	(0.7, 4.6)	
	Student	327	381,485	*	3.9	(2.0, 7.4)	
	Retired	2,475	855,364		3.4	(2.5, 4.5)	
	Disabled	362	286,617	*	2.5	(1.2, 5.3)	
Income							<0.0001
	Less than $15,000	843	661,590		2.8	(1.6, 4.9)	
	$15,000 - <$30,000	1,031	641,221		1.4	(0.8, 2.4)	
	$30,000 - <$50,000	1,319	682,078		2.6	(1.8, 3.8)	

		Unweighted N[1]	Weighted N[2]	% participated			p-value[4]
					%[3]	95% CI[3]	
	$50,000 - <$100,000	2,474	1,241,494		4.2	(3.1, 5.7)	
	$100,000 - <$150,000	1,368	712,564		4.6	(3.2, 6.5)	
	$150,000 or more	1,131	525,243		5.8	(3.9, 8.6)	
Marital status							0.5952
	Never married	1,579	1,290,716		3.0	(2.0, 4.4)	
	Living with partner	631	436,750		3.4	(2.1, 5.6)	
	Married	5,044	2,505,607		3.8	(3.1, 4.6)	
	Divorced or	1,181	524,140	*	3.4	(1.9, 6.1)	
	Widowed	877	327,702	*	2.4	(1.3, 4.6)	
Military status							0.0029
	No military	8,512	4,783,255		3.1	(2.6, 3.7)	
	Yes, served prior to Sept 2001	851	318,581		8.3	(5.8, 11.8)	
	Yes, served Sept 2001 or later	67	45,038			---	
Drug and alcohol use problems							0.7522
	No	9,302	5,042,010		3.3	(2.8, 3.9)	
	Yes	157	130,828	*	3.7	(1.8, 7.5)	
Tobacco Use							0.1806
	No	8,139	4,231,555		3.2	(2.7, 3.8)	
	Yes	1,227	898,599		4.3	(3.0, 6.1)	
Self-reported Health status							0.2649
	Excellent	2,040	1,057,383		2.6	(1.9, 3.5)	
	Very Good	3,660	1,913,041		3.9	(3.0, 4.9)	
	Good	2,651	1,512,608		3.7	(2.7, 5.1)	
	Fair	945	575,297		2.8	(1.6, 4.8)	
	Poor	231	149,343	*	3.1	(1.2, 7.8)	
Region							0.1414
	Western Massachusetts	2,765	665,117		3.9	(3.1, 4.8)	
	Greater Boston	5,282	3,548,092		3.6	(3.0, 4.4)	
	South Eastern Massachusetts	1,495	1,001,730		2.4	(1.4, 4.0)	
County							0.0028
	Barnstable/Dukes/ Nantucket	382	205,487	*	2.2	(1.0, 4.5)	
	BERKSHIRE	494	112,681		10.6	(7.5, 14.8)	
	BRISTOL	574	451,161	*	2.7	(1.2, 5.8)	
	ESSEX	862	570,025		3.3	(2.0, 5.2)	

		Unweighted N[1]	Weighted N[2]	% participated			
					%[3]	95% CI[3]	p-value[4]
	FRANKLIN	308	58,604		---		
	HAMPDEN	1,335	365,051		2.3	(1.6, 3.3)	
	HAMPSHIRE	628	128,781		3.2	(2.0, 5.3)	
	MIDDLESEX	1,944	1,155,890		3.5	(2.6, 4.7)	
	NORFOLK	819	502,837		2.4	(1.4, 3.9)	
	PLYMOUTH	539	345,082	*	2.1	(0.8, 5.5)	
	SUFFOLK	650	586,196		5.9	(3.7, 9.1)	
	WORCESTER	1,007	733,144		3.2	(2.0, 5.2)	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

[4] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Note: A dash --- indicates that the cell size is less than or equal to 5

Table 57 Past-year bingo participation

				% participated		
		Unweighted N[1]	Weighted N[2]	%[3]	95% CI[3]	p-value[4]
Overall		9,525	5,214,786	3.4	(2.9, 4.0)	
Gender						0.0017
	Male	3,784	2,427,691	2.4	(1.7, 3.5)	
	Female	5,634	2,724,274	4.3	(3.6, 5.1)	
Age						<0.0001
	18-20	100	211,399	---		
	21-24	246	327,588	* 1.6	(0.6, 4.1)	
	25-34	995	897,565	5.7	(3.8, 8.6)	
	35-54	2,892	1,708,197	2.5	(1.8, 3.4)	
	55-64	1,974	868,047	2.3	(1.5, 3.5)	
	65-79	2,076	655,194	4.9	(3.8, 6.4)	
	80+	772	269,187	6.4	(4.5, 9.1)	
Race/Ethnicity						<0.0001
	Hispanic	480	431,497	3.5	(1.9, 6.1)	
	Black	364	349,707	* 5.4	(2.7, 10.3)	
	White	7,910	3,915,037	3.5	(2.9, 4.2)	
	Asian	363	276,480	---		
	Other	83	49,119	---		
Education						<0.0001
	Less than high school	393	450,891	4.9	(2.7, 8.6)	
	HS or GED	1,311	1,341,482	5.1	(3.7, 6.9)	
	Some college	2,529	1,172,667	4.5	(3.5, 5.7)	
	BA	2,449	1,328,597	1.7	(1.1, 2.6)	
	MS or professional degree	2,104	639,418	1.3	(0.8, 2.0)	
	PHD	556	173,020	---		
Employment						<0.0001
	Employed	5,467	3,090,152	2.7	(2.1, 3.4)	
	Unemployed	350	265,679	* 7.4	(3.7, 14.4)	
	Homemaker	356	211,952	---		
	Student	328	385,821	* 2.5	(1.1, 5.6)	
	Retired	2,464	853,607	5.4	(4.4, 6.8)	
	Disabled	365	290,800	* 5.1	(2.4, 10.4)	
Income						0.0018
	Less than $15,000	840	662,621	4.2	(2.6, 6.8)	
	$15,000 - <$30,000	1,024	632,086	6.0	(4.2, 8.6)	
	$30,000 - <$50,000	1,320	683,825	4.2	(2.7, 6.5)	
	$50,000 - <$100,000	2,468	1,243,918	3.0	(2.2, 4.0)	
	$100,000 -<$150,000	1,368	717,913	1.6	(0.9, 2.9)	

		Unweighted N[1]	Weighted N[2]		% participated %[3]	95% CI[3]	p-value[4]
	$150,000 or more	1,125	521,918	*	2.1	(0.8, 5.4)	
Marital status							0.0009
	Never married	1,580	1,294,252		3.1	(2.1, 4.7)	
	Living with partner	627	432,998		3.3	(2.1, 5.2)	
	Married	5,026	2,499,716		2.8	(2.1, 3.7)	
	Divorced or Separated	1,180	527,504		3.9	(2.2, 6.7)	
	Widowed	878	328,106		8.6	(6.4, 11.5)	
Military status							0.6041
	No military	8,496	4,779,727		3.4	(2.8, 4.0)	
	Yes, served prior to Sept 2001	847	318,012		3.8	(2.5, 5.7)	
	Yes, served Sept 2001 or later	68	46,512			---	
Drug and alcohol use problems							0.1355
	No	9,284	5,038,940		3.5	(2.9, 4.1)	
	Yes	158	132,305			---	
Tobacco Use							0.9912
	No	8,120	4,230,858		3.4	(2.9, 4.1)	
	Yes	1,229	899,145		3.5	(2.2, 5.3)	
Self-reported Health status							0.0514
	Excellent	2,031	1,052,052		2.4	(1.5, 3.9)	
	Very Good	3,654	1,913,121		2.8	(2.0, 3.7)	
	Good	2,650	1,519,043		4.5	(3.5, 5.9)	
	Fair	947	575,394		4.3	(2.7, 6.6)	
	Poor	229	148,867	*	4.9	(2.2, 10.6)	
Region							0.9233
	Western Massachusetts	2,754	662,519		3.6	(2.8, 4.6)	
	Greater Boston	5,280	3,549,797		3.4	(2.7, 4.2)	
	South Eastern Massachusetts	1,491	1,002,469		3.4	(2.3, 5.1)	
County							<0.0001
	Barnstable/Dukes/Nantucket	377	202,930			---	
	BERKSHIRE	494	112,777	*	1.5	(0.6, 3.8)	
	BRISTOL	574	453,910		4.1	(2.4, 7.0)	
	ESSEX	860	567,207		4.2	(2.6, 6.9)	
	FRANKLIN	308	58,649	*	4.6	(2.2, 9.5)	
	HAMPDEN	1,329	363,088		4.0	(2.9, 5.6)	
	HAMPSHIRE	623	128,006		3.9	(2.4, 6.2)	
	MIDDLESEX	1,943	1,157,119		3.5	(2.4, 5.1)	

		Unweighted N[1]	Weighted N[2]		% participated %[3]	95% CI[3]	p-value[4]
	NORFOLK	822	506,904	*	1.4	(0.8, 2.6)	
	PLYMOUTH	540	345,629	*	4.0	(2.1, 7.5)	
	SUFFOLK	647	584,371	*	3.5	(1.9, 6.4)	
	WORCESTER	1,008	734,195		3.8	(2.7, 5.5)	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%
Note: A dash --- indicates that the cell size is less than or equal to 5

Table 58 Past-year online gambling participation

				% participated			
		Unweighted N[1]	Weighted N[2]		%[3]	95% CI[3]	p-value[4]
Overall		9,461	5,174,249		1.6	(1.2, 2.1)	
Gender							0.0014
	Male	3,756	2,406,682		2.4	(1.7, 3.4)	
	Female	5,607	2,709,752		0.9	(0.6, 1.3)	
Age							0.0089
	18-20	100	211,399			---	
	21-24	243	324,419	*	2.0	(0.9, 4.4)	
	25-34	990	900,339		2.9	(1.7, 4.7)	
	35-54	2,877	1,695,379		1.4	(0.9, 2.0)	
	55-64	1,966	859,605	*	0.6	(0.3, 1.1)	
	65-79	2,064	648,427		0.7	(0.4, 1.3)	
	80+	766	265,810			---	
Race/Ethnicity							0.2741
	Hispanic	473	424,637			---	
	Black	361	346,258	*	2.3	(0.7, 7.1)	
	White	7,872	3,891,909		1.6	(1.2, 2.1)	
	Asian	363	280,108			---	
	Other	83	49,119			---	
Education							0.0002
	Less than high school	383	443,365	*	2.8	(1.0, 7.5)	
	HS or GED	1,301	1,332,968	*	0.8	(0.3, 2.0)	
	Some college	2,517	1,168,487		2.0	(1.3, 3.1)	
	BA	2,444	1,324,638		1.8	(1.2, 2.8)	
	MS or professional degree	2,100	637,304		1.5	(0.9, 2.5)	
	PHD	554	172,610			---	
Employment							<0.0001
	Employed	5,447	3,077,527		1.5	(1.1, 2.1)	
	Unemployed	351	269,556	*	5.2	(2.3, 11.2)	
	Homemaker	358	213,073		0.0	NA	
	Student	326	384,005	*	2.9	(1.2, 7.0)	
	Retired	2,441	839,052		0.6	(0.3, 1.0)	
	Disabled	363	288,104	*	1.3	(0.5, 3.0)	
Income							0.3377
	Less than $15,000	831	655,925		1.5	(0.9, 2.7)	
	$15,000 - <$30,000	1,022	639,296	*	1.9	(0.8, 4.7)	
	$30,000 - <$50,000	1,311	675,453		1.5	(0.8, 2.5)	
	$50,000 - <$100,000	2,455	1,233,270		2.0	(1.2, 3.4)	
	$100,000 -<$150,000	1,356	709,673	*	1.0	(0.5, 2.0)	

		Unweighted N[1]	Weighted N[2]		% participated %[3]	95% CI[3]	p-value[4]
	$150,000 or more	1,128	524,090	*	3.0	(1.6, 5.8)	
Marital status							0.0109
	Never married	1,571	1,288,954		2.4	(1.4, 4.0)	
	Living with partner	629	436,517	*	1.5	(0.7, 3.0)	
	Married	5,004	2,484,085		1.3	(0.9, 1.8)	
	Divorced or Separated	1,177	523,166	*	1.9	(0.7, 4.9)	
	Widowed	866	321,908			---	
Military status							0.3574
	No military	8,447	4,752,206		1.4	(1.1, 1.9)	
	Yes, served prior to Sept 2001	844	315,001	*	1.7	(0.9, 3.1)	
	Yes, served Sept 2001 or later	68	46,512			---	
Drug and alcohol use problems							0.2418
	No	9,220	4,999,360		1.6	(1.2, 2.1)	
	Yes	159	133,018	*	3.0	(1.3, 6.7)	
Tobacco Use							0.0457
	No	8,064	4,189,623		1.4	(1.0, 1.9)	
	Yes	1,225	903,171		2.7	(1.7, 4.3)	
Self-reported Health status							0.7305
	Excellent	2,020	1,045,920	*	1.3	(0.7, 2.4)	
	Very Good	3,638	1,899,915		2.0	(1.3, 3.0)	
	Good	2,625	1,503,315		1.4	(0.8, 2.4)	
	Fair	935	570,434	*	1.3	(0.6, 2.8)	
	Poor	228	147,400			---	
Region							0.8765
	Western Massachusetts	2,740	656,834		1.4	(1.0, 2.1)	
	Greater Boston	5,242	3,527,536		1.6	(1.2, 2.3)	
	South Eastern Massachusetts	1,479	989,879	*	1.5	(0.7, 3.0)	
County							0.2086
	Barnstable/Dukes/Nantucket	379	204,134			---	
	BERKSHIRE	492	112,517	*	2.1	(0.8, 5.0)	
	BRISTOL	566	443,079			---	
	ESSEX	855	571,774	*	1.7	(0.9, 3.3)	
	FRANKLIN	307	58,606			---	
	HAMPDEN	1,318	358,859		1.3	(0.8, 2.3)	
	HAMPSHIRE	623	126,852	*	1.0	(0.4, 2.4)	
	MIDDLESEX	1,932	1,147,288	*	1.6	(0.8, 3.1)	

		Unweighted N[1]	Weighted N[2]	% participated			
					%[3]	95% CI[3]	p-value[4]
	NORFOLK	818	503,605		---		
	PLYMOUTH	534	342,666	*	3.0	(1.1, 7.6)	
	SUFFOLK	645	583,249	*	3.3	(1.8, 6.0)	
	WORCESTER	992	721,621	*	1.0	(0.4, 2.2)	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

[4] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Note: A dash --- indicates that the cell size is less than or equal to 5

Table 59 What was the main type of online gambling you engaged in?

	Unweighted N[1]	Weighted N[2]		%[3]	95% CI[3]
Total	110	90,233		100	
Lottery	7	7,229	*	8.0	(2.3, 24.0)
Instant games	---	---			---
Bingo	---	---			---
Slot machines	---	---			---
Casino table games(i.e., blackjack, baccarat, roulette, craps, etc.)	---	---			---
Poker	15	13,318	*	14.8	(7.0, 28.4)
Horse racing	15	5,944	*	6.6	(3.2, 13.2)
Dog racing	---	---			---
Sports betting	34	29,318		32.5	(21.5, 45.8)
Other	26	22,099		24.5	(15.3, 36.8)

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%
Note: A dash --- indicates that the cell size is less than or equal to 5

Table 60 Frequency of gambling participation by demographics

					Never		Yearly		Monthly		Weekly		
		Unweighted N[1]	Weighted N[2]	% missing[3]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	p-value[5]
Overall		9,537	5,220,404		26.9	(25.6, 28.2)	34.6	(33.2, 35.9)	20.4	(19.2, 21.7)	18.1	(16.9, 19.3)	
	Missing	221	19,925	0%									
Gender													<0.0001
	Male		2,435,323		22.7	(20.8, 24.8)	30.0	(28.0, 32.2)	22.5	(20.5, 24.6)	24.7	(22.7, 26.9)	
	Female		2,723,234		30.4	(28.7, 32.2)	38.6	(36.9, 40.4)	18.5	(17.1, 20.0)	12.4	(11.3, 13.7)	
	Missing	105	61,847	1%									
Age													<0.0001
	18-20		211,399		45.5	(34.4, 57.0)	29.4	(19.9, 41.2)	14.7	(8.3, 24.9)	* 10.4	(5.2, 19.5)	
	21-24		327,588		42.4	(35.1, 50.1)	32.0	(25.5, 39.3)	17.9	(12.7, 24.7)	7.6	(4.2, 13.4)	
	25-34		907,174		26.9	(23.5, 30.6)	40.4	(36.7, 44.3)	19.9	(16.8, 23.4)	12.8	(9.9, 16.2)	
	35-54		1,705,300		21.9	(19.8, 24.1)	35.6	(33.2, 38.0)	23.7	(21.5, 26.1)	18.9	(16.7, 21.3)	
	55-64		867,948		20.4	(18.2, 22.9)	35.1	(32.4, 37.8)	19.9	(17.6, 22.4)	24.6	(21.9, 27.5)	
	65-79		656,843		25.9	(23.5, 28.5)	29.0	(26.6, 31.5)	20.2	(18.0, 22.5)	24.9	(22.5, 27.5)	
	80+		268,311		36.6	(32.5, 41.0)	26.9	(23.1, 31.0)	14.9	(12.0, 18.4)	21.6	(17.9, 25.8)	
	Missing	465	275,841	6%									
Ethnicity													<0.0001
	Hispanic		427,991		36.9	(31.1, 43.0)	23.5	(18.8, 28.9)	22.9	(18.0, 28.7)	16.8	(12.3, 22.5)	
	Black		346,740		34.4	(27.9, 41.5)	22.8	(17.6, 29.1)	22.3	(17.2, 28.4)	20.5	(15.0, 27.3)	
	White		3,923,775		23.6	(22.3, 25.0)	37.2	(35.7, 38.7)	20.7	(19.4, 22.1)	18.6	(17.3, 19.9)	
	Asian		280,885		43.9	(36.9, 51.2)	29.2	(23.2, 35.9)	13.1	(8.5, 19.7)	13.8	(8.9, 20.8)	
	Other		49,119		45.7	(31.4, 60.8)	24.6	(15.4, 36.8)	* 7.5	(4.0, 13.9)	* 22.2	(10.5, 41.0)	
	Missing	322	191,894	4%									
Education													<0.0001
	Less than high		450,867		31.8	(25.9, 38.4)	22.9	(17.4, 29.4)	20.7	(15.7, 26.8)	24.6	(19.5, 30.5)	
	HS or GED		1,345,798		26.6	(23.4, 30.0)	23.3	(20.5, 26.5)	21.7	(18.8, 24.9)	28.4	(25.2, 31.8)	
	Some college		1,174,770		24.3	(22.0, 26.8)	36.2	(33.6, 38.7)	21.6	(19.5, 23.8)	18.0	(16.1, 20.0)	
	BA		1,330,926		24.3	(22.2, 26.6)	42.4	(39.9, 44.9)	20.7	(18.6, 22.8)	12.7	(11.0, 14.5)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	Never		Yearly		Monthly		Weekly		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
	MS or professional degree		642,157		29.0	(26.7, 31.4)	45.7	(43.2, 48.3)	17.1	(15.2, 19.2)	8.1	(6.8, 9.6)	
	PHD		172,620		42.6	(37.7, 47.6)	40.6	(35.8, 45.6)	11.1	(8.3, 14.8)	5.6	(3.7, 8.3)	
	Missing	175	103,266	2%									
Employment													<0.0001
	Employed		3,096,320		23.3	(21.7, 25.0)	37.5	(35.7, 39.3)	21.0	(19.4, 22.6)	18.2	(16.6, 19.9)	
	Unemployed		269,599		21.1	(16.0, 27.4)	30.5	(24.0, 37.8)	26.5	(20.2, 34.0)	21.9	(16.0, 29.1)	
	Homemaker		212,919		35.3	(28.8, 42.5)	38.8	(32.5, 45.5)	19.8	(14.2, 27.0)	6.0	(3.9, 9.1)	
	Student		386,133		42.3	(35.6, 49.4)	35.3	(29.0, 42.3)	14.0	(9.6, 19.8)	8.4	(5.1, 13.5)	
	Retired		855,184		28.8	(26.6, 31.2)	29.0	(26.8, 31.3)	18.5	(16.5, 20.5)	23.7	(21.5, 26.1)	
	Disabled		286,109		36.3	(29.6, 43.5)	18.5	(13.8, 24.2)	23.4	(17.4, 30.8)	21.8	(16.4, 28.4)	
	Missing	190	114,140	2%									
Income													<0.0001
	Less than $15,000		660,664		36.5	(32.1, 41.2)	21.5	(18.0, 25.5)	21.4	(17.7, 25.7)	20.5	(16.8, 24.8)	
	$15,000 - <$30,000		641,679		28.4	(24.5, 32.6)	29.3	(25.4, 33.6)	23.7	(19.9, 28.0)	18.5	(15.4, 22.1)	
	$30,000 - <$50,000		682,529		30.3	(26.6, 34.4)	28.2	(24.9, 31.8)	20.7	(17.6, 24.2)	20.8	(17.5, 24.4)	
	$50,000 - <$100,000		1,243,119		21.6	(19.4, 24.0)	36.6	(33.9, 39.4)	19.5	(17.3, 21.9)	22.3	(19.7, 25.1)	
	$100,000 - <$150,000		717,915		17.2	(14.4, 20.4)	44.4	(40.7, 48.3)	21.6	(18.5, 25.0)	16.8	(13.9, 20.1)	
	$150,000 or more		524,708		23.1	(20.1, 26.3)	42.9	(39.2, 46.6)	21.3	(18.0, 25.0)	12.8	(10.1, 16.0)	
	Missing	1,376	749,790	17%									
													<0.0001

		Unweighted N[1]	Weighted N[2]	% missing[3]	Never		Yearly		Monthly		Weekly		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
Marital status	Never married		1,294,590		34.4	(31.0, 38.0)	31.3	(28.1, 34.7)	19.7	(16.9, 22.9)	14.6	(12.2, 17.5)	
	Living with partner		438,669		21.3	(17.4, 25.8)	40.8	(35.8, 46.0)	21.8	(17.9, 26.2)	16.1	(12.5, 20.6)	
	Married		2,502,507		23.2	(21.7, 24.8)	36.2	(34.4, 38.0)	21.2	(19.6, 22.8)	19.4	(17.8, 21.1)	
	Divorced or Separated		527,565		26.3	(22.8, 30.1)	32.8	(29.2, 36.6)	18.9	(15.9, 22.2)	22.0	(18.4, 26.2)	
	Widowed		327,516		31.4	(27.3, 35.8)	30.8	(27.0, 34.9)	16.4	(13.4, 20.0)	21.4	(18.0, 25.4)	
	Missing	228	129,557	3%									
Military status													<0.0001
	No military		4,784,449		27.6	(26.2, 29.0)	34.9	(33.5, 36.4)	20.6	(19.3, 21.9)	17.0	(15.7, 18.2)	
	Yes, served prior to Sept 2001		319,520		17.7	(14.7, 21.0)	29.6	(25.4, 34.1)	19.0	(15.9, 22.6)	33.7	(29.4, 38.4)	
	Yes, served Sept 2001 or later		46,512		22.2	(11.9, 37.7)	34.9	(21.6, 50.9)	* 14.5	(7.4, 26.7)	* 28.4	(14.3, 48.6)	
	Missing	114	69,923	1%									
Drug and alcohol use problems													0.0002
	No		5,046,096		27.4	(26.0, 28.7)	34.5	(33.1, 35.9)	20.3	(19.1, 21.5)	17.9	(16.7, 19.1)	
	Yes		133,018		* 10.2	(5.4, 18.5)	41.5	(31.3, 52.5)	22.6	(14.9, 32.8)	25.6	(17.1, 36.6)	
	Missing	81	41,291	1%									
Tobacco Use													<0.0001
	No		4,230,341		28.8	(27.4, 30.3)	35.6	(34.1, 37.1)	19.2	(18.0, 20.5)	16.4	(15.2, 17.7)	
	Yes		907,214		17.1	(14.3, 20.4)	30.6	(27.0, 34.4)	26.4	(22.9, 30.1)	25.9	(22.5, 29.7)	
	Missing	174	82,849	2%									
Self-reported Health status													<0.0001
	Excellent		1,054,592		28.2	(25.5, 31.1)	38.9	(36.1, 41.9)	19.3	(16.8, 22.1)	13.6	(11.3, 16.3)	
	Very Good		1,914,354		24.8	(22.7, 26.9)	39.0	(36.8, 41.3)	19.9	(18.1, 21.8)	16.3	(14.6, 18.2)	
	Good		1,520,867		25.1	(22.8, 27.6)	31.5	(29.0, 34.1)	20.3	(18.0, 22.7)	23.1	(20.7, 25.7)	
	Fair		575,663		33.4	(29.0, 38.1)	23.7	(20.3, 27.5)	24.3	(20.4, 28.7)	18.6	(15.4, 22.3)	
	Poor		148,620		38.6	(29.5, 48.6)	20.1	(13.6, 28.6)	20.0	(13.4, 28.9)	21.3	(15.0, 29.3)	

		Unweighted N[1]	Weighted N[2]	% missing[3]	Never		Yearly		Monthly		Weekly		p-value[5]
					%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	%[4]	95% CI[4]	
	Missing	14	6,309	0%									
Region													<0.0001
	Western Massachusetts		662,877		25.5	(23.3, 27.8)	33.6	(31.2, 36.0)	20.5	(18.4, 22.7)	20.5	(18.4, 22.7)	
	Greater Boston		3,552,363		28.4	(26.7, 30.1)	35.0	(33.3, 36.7)	20.5	(19.0, 22.1)	16.1	(14.7, 17.6)	
	South Eastern Massachusetts		1,005,164		22.5	(19.7, 25.7)	33.7	(30.6, 36.9)	20.1	(17.5, 23.1)	23.7	(20.7, 27.0)	
	Missing	0	0	0%									
County													<0.0001
	Barnstable/Dukes/Nantucket		205,162		22.3	(17.4, 28.1)	43.5	(36.6, 50.7)	18.6	(13.4, 25.3)	15.6	(10.5, 22.6)	
	BERKSHIRE		113,162		23.0	(17.9, 29.2)	33.2	(27.7, 39.1)	21.4	(17.1, 26.5)	22.4	(17.9, 27.7)	
	BRISTOL		454,402		23.6	(19.0, 28.8)	30.4	(25.8, 35.4)	19.1	(15.2, 23.7)	27.0	(22.2, 32.3)	
	ESSEX		577,340		26.3	(22.4, 30.5)	34.9	(30.7, 39.2)	21.0	(17.4, 25.2)	17.8	(14.3, 22.0)	
	FRANKLIN		58,430		20.3	(15.6, 26.0)	46.0	(38.9, 53.3)	19.3	(14.2, 25.5)	14.4	(10.4, 19.6)	
	HAMPDEN		363,045		25.0	(22.0, 28.4)	30.0	(26.9, 33.4)	22.1	(19.1, 25.5)	22.8	(19.8, 26.2)	
	HAMPSHIRE		128,240		31.3	(26.5, 36.5)	38.3	(33.3, 43.6)	15.6	(12.2, 19.8)	14.8	(11.0, 19.7)	
	MIDDLESEX		1,158,516		29.7	(27.0, 32.4)	37.1	(34.3, 40.0)	18.8	(16.5, 21.3)	14.4	(12.3, 16.8)	
	NORFOLK		505,921		26.5	(22.7, 30.7)	38.7	(34.4, 43.3)	19.7	(16.2, 23.7)	15.1	(11.8, 19.0)	
	PLYMOUTH		345,600		21.3	(16.8, 26.7)	32.1	(27.2, 37.4)	22.4	(18.1, 27.5)	24.1	(19.5, 29.5)	
	SUFFOLK		583,230		34.0	(29.3, 39.0)	28.9	(24.8, 33.3)	20.0	(16.0, 24.6)	17.2	(13.2, 22.0)	
	WORCESTER		727,356		25.0	(21.2, 29.2)	34.0	(30.1, 38.1)	23.8	(20.3, 27.7)	17.2	(14.3, 20.6)	
	Missing	0	0	0%									

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] The % missing is calculated using the weighted N

[4] Percentages and 95% CI are calculated using the weighted N

[5] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 61 Reasons for gambling by demographics

		Unweighted N[1]	Weighted N[2]	For excitement/entertainment % [3]	For excitement/entertainment 95% CI [3]	To win money % [3]	To win money 95% CI [3]	To escape or distract yourself % [3]	To escape or distract yourself 95% CI [3]	To socialize with family or friends % [3]	To socialize with family or friends 95% CI [3]	To support worthy causes % [3]	To support worthy causes 95% CI [3]	Because it makes you feel good % [3]	Because it makes you feel good 95% CI [3]	p-value[4]
Overall		6,328	3,523,487	28.9	(27.3, 30.6)	37.8	(36.0, 39.6)	2.5	(2.0, 3.1)	16.2	(15.0, 17.6)	11.1	(10.1, 12.2)	0.8	(0.5, 1.3)	
Gender	Male	2,694	1,765,880	29.6	(27.1, 32.2)	41.1	(38.4, 44.0)	2.4	(1.7, 3.5)	15.0	(13.2, 17.0)	8.7	(7.3, 10.3)	* 1.2	(0.6, 2.2)	<0.0001
	Female	3,592	1,733,566	28.2	(26.2, 30.2)	34.5	(32.3, 36.7)	2.6	(2.0, 3.3)	17.4	(15.7, 19.2)	13.6	(12.3, 15.1)	* 0.5	(0.2, 0.9)	
Age	18-20	52	109,172	* 21.3	(10.9, 37.6)	43.1	(28.5, 58.9)	---		24.4	(13.9, 39.2)	---		0.0	NA	* <0.0001
	21-24	137	180,382	31.9	(23.2, 42.2)	38.3	(29.0, 48.5)	---		23.4	(15.7, 33.3)	---		0.0	NA	
	25-34	695	652,598	31.1	(26.9, 35.7)	37.0	(32.3, 41.9)	* 2.6	(1.4, 4.9)	19.6	(16.3, 23.3)	6.8	(4.8, 9.5)	---		
	35-54	2,101	1,256,982	28.6	(26.0, 31.5)	38.7	(35.7, 41.8)	1.7	(1.1, 2.9)	15.3	(13.4, 17.5)	12.8	(11.1, 14.8)	* 0.5	(0.2, 1.4)	
	55-64	1,398	628,061	30.3	(27.1, 33.6)	37.9	(34.5, 41.5)	3.6	(2.4, 5.2)	11.1	(9.1, 13.5)	12.9	(10.9, 15.1)	* 0.7	(0.3, 1.9)	
	65-79	1,320	418,945	28.1	(25.1, 31.3)	34.5	(31.3, 37.9)	3.8	(2.7, 5.4)	14.7	(12.4, 17.3)	14.5	(12.3, 17.0)	* 0.9	(0.5, 1.9)	
	80+	377	136,161	21.7	(17.1, 27.2)	37.1	(30.8, 43.9)	* 3.3	(1.6, 6.6)	18.6	(14.1, 24.2)	12.0	(8.9, 15.9)	* 3.0	(1.4, 6.5)	
Ethnicity	Hispanic	278	250,584	22.8	(16.5, 30.7)	45.8	(37.7, 54.2)	* 4.5	(2.0, 10.0)	9.4	(5.6, 15.3)	9.8	(5.6, 16.8)	---		* 0.0014
	Black	233	219,437	24.3	(17.4, 32.8)	47.6	(38.8, 56.6)	* 2.0	(0.8, 4.9)	10.7	(6.9, 16.3)	12.8	(7.2, 21.9)	---		
	White	5,392	2,761,468	30.1	(28.4, 31.9)	36.5	(34.6, 38.4)	2.4	(1.9, 3.1)	16.5	(15.2, 18.0)	11.4	(10.4, 12.4)	* 0.5	(0.3, 0.9)	
	Asian	194	160,300	25.2	(18.3, 33.6)	35.8	(26.3, 46.5)	---		28.9	(20.4, 39.3)	* 5.1	(2.4, 10.5)	* 2.5	(1.1, 6.0)	
	Other	47	24,163	* 19.2	(9.0, 36.4)	* 25.7	(13.3, 43.8)	---		* 22.8	(7.9, 50.5)	* 26.1	(10.4, 51.7)	0.0	NA	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%
Note: A dash --- indicates that the cell size is less than or equal to 5

Appendix D1: Gambling expenditure data

As noted several times in this report, gambling expenditure is an important measure of gambling participation. Expenditure data are useful in illustrating the relative importance of different gambling activities to the population, how much money individuals spend on different gambling activities, and the proportion of gambling expenditures and revenues derived from recreational, at-risk, and problem gamblers. The following table presents total reported expenditures for each of the gambling activities included in the survey along with totals for all lottery games and all gambling.

Table 62 Reported expenditures on different gambling activities

	Expenditures $million		% of total
All gambling		$7,708	100.0%
All lottery	*	$5,018	65.1%
Casino	*	$1,339	17.4%
Sports		$402	5.2%
Private	*	$426	5.5%
Raffles		$183	2.4%
Bingo	*	$212	2.7%
Online	*	$61	0.8%
Horse racing		$67	0.9%

Reported in millions of dollars

* Estimate is unreliable, relative standard error > 30%

While all of the data obtained in gambling surveys are based on self-report, expenditure data is the only area where objective information is available to assess the accuracy of these reports. Research has shown that there are substantial challenges in obtaining accurate expenditure information from survey respondents. In fact, every study that has included questions about spending on gambling, including the SEIGMA Baseline General Population Survey, has found a substantial mismatch with known spending based on reports to government agencies (Volberg et al., 2001; Williams & Wood, 2007; Wood & Williams, 2007).

Household expenditure surveys have consistently obtained significant underestimates of actual gambling expenditure. For example, in Australia, gambling expenditure totals in the 1998–1999 Household Expenditure Survey were only 17% of actual gambling revenues (Australian Bureau of Statistics, 2000). In New Zealand, people reported spending $103 per person on gambling, compared to $280 per person in actual revenue (Statistics New Zealand, 1999). In 2001, Canadians reported spending $267 on gambling per *household* in the Survey of Household Spending, compared to an average of $447 per *person* in actual revenue (Statistics Canada, 2003). Average Alberta household gambling expenditure in the 2008 Survey of Household Spending was $363 compared to approximately $2,000 in actual per household revenue.

Jurisdiction-wide prevalence surveys of gambling have obtained expenditure totals that are both above and below actual revenues. In Washington State, Volberg, Moore, Christiansen, Cummings, and Banks (1998) found that reported losses were two to ten times higher than actual revenues, depending on the type of gambling. In a study of Canadian provinces by Williams and Wood (2004), self-reported expenditures were 2.1 times higher than actual provincial gaming revenues in that time period. In contrast, Australian and New Zealand studies have found self-reported expenditures to be between half and three-quarters of actual revenues (Abbott &

Volberg, 2000; Productivity Commission, 1999). In a national survey of U.S. citizens, gamblers reported being *ahead* or winning $3 billion at casinos in the past year instead of having *lost* more than $20 billion, the actual total revenues reported by the casino industry. Gamblers also reported being ahead $2 billion at the racetrack and being ahead $4 billion in private wagering. Only when it came to lotteries did they admit to a loss of $5 billion (Gerstein et al., 1999).

There are several possible reasons for the lack of correspondence between reported expenditures and actual revenues. One concerns the nature of the question being asked. Many gambling surveys have asked people: "How much do you *spend* on gambling?" A problem with the word "spend" is that some people interpret it to mean how much money they have wagered in total rather than their net win/loss, and other people include their travel and meal costs (Blaszczynski et al., 1997). Paradoxically, studies using clearer non-biased question wordings have obtained some of the most discrepant results. The U.S. national study (Gerstein et al., 1999) asked respondents whether they had "come out ahead or behind on your gambling" with the choices being "ahead, behind, or broke even." With this wording, a majority of people actually reported *winning* rather than losing money in the past year. It appears that when given the choice to represent themselves as either a "winner" or "loser," many people choose to misrepresent themselves as winners or to minimize their actual losses.

The importance of question wording was explored in research conducted by Wood and Williams (2007) in which Ontario adult gamblers were asked about past-month gambling expenditure in one of 12 different ways. The relative validity of each question format was subsequently established on the basis of the correspondence of reported gambling expenditures with amounts recorded by respondents in weekly diaries as well as actual Ontario gambling revenues. One important finding from this study was that slight variations in question wording resulted in significant variation in reported expenditure amounts. Another important finding was that there were some question wordings that had better correspondence to the amounts recorded in diaries as well as jurisdictional revenue. The question wording with the best evidence of validity was actually the traditional question that asked about "*spending*." While this question wording generally results in a good match between *overall* reported gambling expenditures and *overall* jurisdictional revenues, the match with revenues by specific type of gambling is not as good (Williams, Belanger, et al., 2011).

Another possible reason for the lack of correspondence between reported expenditures and actual revenues relates to the characteristics of different gambling activities. Little attention has been paid to the features of different gambling activities and their likely impact on reports of spending elicited from survey respondents. For example, games differ in their proportion of winners and losers. Traditional large jackpot lottery games are characterized by a small number of very large prizes while instant lottery games include numerous "winning" experiences with most prizes limited to one to four times the price of the ticket.[18] Gambling activities also differ in their speed of play with some games (e.g., slot machines) characterized by a rapid cycle of play and others (e.g., casino table games) often characterized by slower, more interactive play. These variations have quite different implications for both the chances of accurately reflecting the distribution of winners and losers in a survey and for the accurate recall or calculation of wins and losses by survey respondents. In general, researchers have found that lotteries are associated with the most accurate self-reports of spending because players are reporting on behavior that is consistent in both frequency and amount spent. As games depart from this formula, with transfers occurring among smaller groups and in more particularistic and irregular ways, the tendency for large wins to be salient (and thus average winnings to be over-estimated) and large losses to be neglected or minimized (and thus average losses under-estimated) becomes greater and the fit between estimated expenditures and known consumer spending becomes poorer (Volberg et al., 2001).

[18] Thanks to Phil Kopel who made this point in his detailed feedback on our gambling expenditure data.

Finally, a substantial fraction of gambling revenues, particularly from casino table games and some pari-mutuel betting pools, has historically been derived from a very small number of "high-rollers." It is difficult to account for the amount of money that these individuals put into play using survey methods since such individuals are unlikely to be included in even very large samples of the population (Volberg et al., 2001).

Despite these limitations, self-reported expenditure data provide a valuable lens into the relative importance of different gambling activities in different jurisdictions, the proportion of gambling expenditures accounted for by recreational, at-risk, and problem gamblers, and the degree to which people exaggerate wins or minimize losses.

Table 63 Population demographics by region

		Western Massachusetts		Greater Boston		South Eastern Massachusetts		
		%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Unweighted N[1]		2,774		5,304		1,500		
Weighted N[2]		667,509		3,570,032		1,007,088		
Gender	Male	46.7	(44.1, 49.4)	47.6	(45.7, 49.5)	45.9	(42.4, 49.5)	0.6948
	Female	53.3	(50.6, 55.9)	52.4	(50.5, 54.3)	54.1	(50.5, 57.6)	
Age	18-20	4.2	(2.8, 6.2)	3.7	(2.7, 5.1)	6.1	(4.0, 9.3)	<0.0001
	21-24	5.9	(4.5, 7.8)	7.4	(6.3, 8.9)	4.1	(2.7, 6.1)	
	25-34	19.3	(17.0, 21.8)	19.5	(17.8, 21.2)	13.6	(11.1, 16.7)	
	35-54	32.0	(29.6, 34.6)	35.0	(33.2, 36.9)	34.6	(31.2, 38.2)	
	55-64	18.6	(16.9, 20.4)	17.0	(15.8, 18.3)	18.7	(16.4, 21.3)	
	65-79	13.7	(12.4, 15.1)	11.9	(11.1, 12.9)	17.8	(15.8, 20.0)	
	80+	6.3	(5.4, 7.3)	5.4	(4.8, 6.1)	5.0	(4.1, 6.1)	
Ethnicity	Hispanic	11.5	(9.6, 13.7)	9.1	(7.9, 10.4)	5.0	(3.2, 7.6)	<0.0001
	Black	5.7	(4.3, 7.4)	7.5	(6.3, 8.8)	6.1	(4.6, 8.1)	
	White	79.5	(76.8, 81.9)	75.3	(73.4, 77.1)	86.0	(82.9, 88.7)	
	Asian	2.5	(1.6, 3.8)	7.5	(6.4, 8.6)	* 1.0	(0.4, 2.6)	
	Other	0.9	(0.5, 1.4)	0.7	(0.5, 1.0)	* 1.9	(1.1, 3.5)	
Education	Less than high school	11.0	(9.0, 13.2)	7.9	(6.6, 9.5)	10.7	(8.3, 13.6)	<0.0001
	HS or GED	29.0	(26.4, 31.7)	24.5	(22.6, 26.5)	31.1	(27.5, 35.0)	
	Some college	29.1	(26.9, 31.4)	20.8	(19.5, 22.3)	26.1	(23.5, 28.9)	
	BA	18.9	(17.2, 20.8)	28.6	(27.0, 30.2)	21.3	(19.0, 23.9)	
	MS or professional degree	9.8	(8.8, 10.8)	14.1	(13.2, 15.0)	9.0	(7.8, 10.3)	
	PHD	2.3	(1.9, 2.8)	4.0	(3.6, 4.5)	1.8	(1.3, 2.4)	
Employment	Employed	54.6	(51.9, 57.2)	62.2	(60.3, 64.0)	58.8	(55.3, 62.2)	<0.0001
	Unemployed	7.1	(5.5, 9.1)	5.4	(4.5, 6.6)	3.6	(2.5, 5.1)	
	Homemaker	3.6	(2.7, 4.7)	4.0	(3.4, 4.7)	5.0	(3.6, 6.9)	
	Student	8.3	(6.5, 10.5)	7.7	(6.5, 9.1)	6.4	(4.5, 9.1)	
	Retired	19.2	(17.6, 20.9)	15.3	(14.3, 16.4)	20.3	(18.2, 22.6)	
	Disabled	7.3	(6.0, 8.8)	5.4	(4.5, 6.4)	5.9	(4.2, 8.3)	

		Western Massachusetts		Greater Boston		South Eastern Massachusetts		
		%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Income	Less than $15,000	19.5	(17.2, 22.0)	14.2	(12.6, 15.9)	14.2	(11.5, 17.5)	<0.0001
	$15,000 - <$30,000	17.4	(15.3, 19.7)	13.7	(12.3, 15.3)	14.5	(11.9, 17.6)	
	$30,000 - <$50,000	20.6	(18.4, 23.0)	14.6	(13.2, 16.1)	14.1	(11.8, 16.8)	
	$50,000 - <$100,000	27.8	(25.6, 30.2)	27.0	(25.2, 28.8)	30.6	(27.3, 34.1)	
	$100,000 -<$150,000	10.0	(8.5, 11.7)	17.0	(15.5, 18.5)	16.9	(14.4, 19.7)	
	$150,000 or more	4.7	(3.9, 5.6)	13.6	(12.5, 14.8)	9.7	(8.0, 11.8)	
Marital status	Never married	25.6	(23.0, 28.3)	26.4	(24.6, 28.4)	21.8	(18.5, 25.6)	0.0013
	Living with partner	9.7	(8.2, 11.4)	8.7	(7.7, 9.9)	7.4	(5.7, 9.5)	
	Married	45.0	(42.4, 47.6)	48.7	(46.9, 50.6)	53.4	(49.8, 57.0)	
	Divorced or Separated	12.8	(11.3, 14.5)	9.9	(8.9, 11.0)	10.4	(8.5, 12.6)	
	Widowed	7.0	(6.0, 8.0)	6.2	(5.5, 6.9)	7.0	(5.8, 8.4)	
Military status	No military	90.6	(89.1, 91.9)	93.5	(92.7, 94.2)	92.4	(90.8, 93.7)	0.0056
	Yes, served prior to Sept 2001	7.8	(6.7, 9.1)	5.7	(5.0, 6.4)	6.9	(5.7, 8.3)	
	Yes, served Sept 2001 or later	1.6	(1.0, 2.5)	0.8	(0.5, 1.3)	* 0.7	(0.3, 1.6)	
Drug and alcohol use problems	No	96.8	(95.6, 97.7)	97.5	(96.7, 98.1)	97.7	(96.0, 98.7)	0.4973
	Yes	3.2	(2.3, 4.4)	2.5	(1.9, 3.3)	2.3	(1.3, 4.0)	
Tobacco Use	No	78.3	(75.8, 80.6)	83.5	(81.8, 85.0)	81.1	(77.8, 83.9)	0.0021
	Yes	21.7	(19.4, 24.2)	16.5	(15.0, 18.2)	18.9	(16.1, 22.2)	
Self-reported Health status	Excellent	17.3	(15.5, 19.3)	21.4	(19.9, 22.9)	18.0	(15.7, 20.7)	0.0027
	Very Good	35.4	(33.0, 37.8)	37.2	(35.4, 38.9)	35.7	(32.4, 39.1)	
	Good	30.5	(28.1, 33.0)	28.3	(26.6, 30.0)	31.4	(28.2, 34.9)	
	Fair	14.1	(12.3, 16.1)	10.6	(9.4, 11.9)	11.0	(9.1, 13.3)	
	Poor	2.7	(2.1, 3.6)	2.6	(2.0, 3.4)	3.8	(2.5, 5.6)	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 64 Patterns of gambling participation by region

		Western Massachusetts		Greater Boston		South Eastern Massachusetts		
		%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Unweighted N[1]		2,760		5,282		1,495		
Weighted N[2]		662,877		3,552,363		1,005,164		
Frequency of gambling	Never	25.5	(23.3, 27.8)	28.4	(26.7, 30.1)	22.5	(19.7, 25.7)	<0.0001
	At least yearly	33.6	(31.2, 36.0)	35.0	(33.3, 36.7)	33.7	(30.6, 36.9)	
	At least monthly	20.5	(18.4, 22.7)	20.5	(19.0, 22.1)	20.1	(17.5, 23.1)	
	At least weekly	20.5	(18.4, 22.7)	16.1	(14.7, 17.6)	23.7	(20.7, 27.0)	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups

Table 65 Past-year gambling participation by region

	Western Massachusetts		Greater Boston		South Eastern Massachusetts		
	%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Unweighted N[1]	2,774		5,304		1,500		
Weighted N[2]	667,509		3,570,032		1,007,088		
Any gambling	74.5	(72.2, 76.7)	71.6	(69.9, 73.3)	77.5	(74.3, 80.3)	0.0021
All lottery	64.2	(61.8, 66.7)	59.7	(57.8, 61.5)	67.1	(63.6, 70.3)	0.0001
Large Jackpot	59.3	(56.7, 61.8)	56.3	(54.5, 58.2)	63.5	(60.0, 66.8)	0.0010
Instant/scratch	41.5	(39.0, 44.1)	34.7	(32.9, 36.5)	43.5	(40.1, 47.0)	<0.0001
Daily	14.9	(13.2, 16.9)	13.5	(12.2, 14.9)	15.6	(13.2, 18.4)	0.2445
Raffles	35.0	(32.7, 37.3)	30.4	(28.7, 32.0)	33.1	(30.0, 36.3)	0.0048
Casino	22.1	(20.0, 24.3)	21.1	(19.6, 22.8)	22.3	(19.7, 25.3)	0.6805
Bingo	3.6	(2.8, 4.6)	3.4	(2.7, 4.2)	3.4	(2.3, 5.1)	0.9233
Horse racing	3.9	(3.1, 4.8)	3.6	(3.0, 4.4)	2.4	(1.4, 4.0)	0.1414
Sports	11.2	(9.5, 13.2)	13.3	(12.0, 14.7)	11.2	(9.1, 13.7)	0.1113
Private	10.0	(8.4, 11.8)	11.4	(10.1, 12.7)	10.9	(8.6, 13.6)	0.4445
Internet	1.4	(1.0, 2.1)	1.6	(1.2, 2.3)	* 1.5	(0.7, 3.0)	0.8765

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

[4] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 66 Past-year gamblers demographics by region

		Western Massachusetts		Greater Boston		South Eastern Massachusetts		
		%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Unweighted		2.056		3.772		1.164		
Weighted N[2]		494,019		2,543,137		778,622		
Gender	Male	47.7	(44.7, 50.8)	50.5	(48.3, 52.7)	48.9	(44.9, 52.8)	0.3197
	Female	52.3	(49.2, 55.3)	49.5	(47.3, 51.7)	51.1	(47.2, 55.1)	
Age	18-20	3.1	(1.8, 5.4)	2.6	(1.6, 4.0)	5.1	(2.9, 8.7)	<0.0001
	21-24	5.3	(3.8, 7.4)	5.9	(4.7, 7.5)	2.7	(1.6, 4.5)	
	25-34	19.5	(16.9, 22.5)	19.3	(17.4, 21.3)	13.8	(10.9, 17.3)	
	35-54	33.7	(30.9, 36.7)	37.4	(35.2, 39.6)	35.5	(31.7, 39.6)	
	55-64	20.0	(17.9, 22.2)	18.3	(16.8, 19.8)	20.5	(17.8, 23.6)	
	65-79	13.5	(12.0, 15.1)	11.7	(10.7, 12.8)	18.4	(16.1, 20.9)	
	80+	4.8	(4.0, 5.8)	4.8	(4.2, 5.6)	4.0	(3.1, 5.2)	
Ethnicity	Hispanic	9.7	(7.7, 12.2)	8.0	(6.6, 9.6)	3.8	(2.1, 6.7)	<0.0001
	Black	4.9	(3.4, 6.9)	6.7	(5.4, 8.2)	5.4	(3.9, 7.5)	
	White	82.7	(79.7, 85.3)	79.0	(76.8, 81.1)	88.6	(85.3, 91.2)	
	Asian	* 1.8	(1.0, 3.5)	5.9	(4.8, 7.3)	* 0.5	(0.3, 1.1)	
	Other	0.9	(0.5, 1.5)	0.4	(0.2, 0.7)	* 1.7	(0.8, 3.4)	
Education	Less than high school	9.7	(7.7, 12.3)	7.6	(6.1, 9.4)	9.2	(6.8, 12.4)	<0.0001
	HS or GED	30.2	(27.2, 33.4)	24.3	(22.1, 26.6)	30.6	(26.5, 35.1)	
	Some college	29.7	(27.2, 32.4)	21.6	(20.0, 23.3)	26.9	(24.0, 30.1)	
	BA	19.0	(16.9, 21.2)	29.6	(27.8, 31.5)	23.0	(20.2, 26.0)	

		Western Massachusetts		Greater Boston		South Eastern Massachusetts		
		%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
	MS or professional degree	9.8	(8.6, 11.0)	13.7	(12.7, 14.8)	8.8	(7.5, 10.3)	
	PHD	1.6	(1.3, 2.1)	3.2	(2.8, 3.8)	1.4	(1.0, 2.1)	
Employment	Employed	59.4	(56.3, 62.4)	64.9	(62.7, 67.0)	61.7	(57.8, 65.4)	0.0004
	Unemployed	7.2	(5.3, 9.6)	5.9	(4.7, 7.3)	4.0	(2.7, 5.9)	
	Homemaker	3.0	(2.2, 4.1)	3.7	(3.0, 4.6)	3.9	(2.8, 5.5)	
	Student	7.0	(5.1, 9.5)	6.1	(4.9, 7.6)	4.8	(3.0, 7.8)	
	Retired	17.6	(15.9, 19.4)	14.7	(13.6, 16.0)	20.4	(18.0, 23.1)	
	Disabled	5.9	(4.5, 7.6)	4.6	(3.6, 5.9)	5.1	(3.3, 7.7)	
Income	Less than $15.000	17.3	(14.8, 20.1)	11.6	(9.9, 13.5)	12.8	(9.9, 16.4)	<0.0001
	$15.000 - <$30.000	16.6	(14.2, 19.3)	13.6	(11.9, 15.5)	12.6	(9.9, 15.8)	
	$30.000 - <$50.000	20.7	(18.1, 23.5)	13.4	(11.9, 15.2)	12.9	(10.5, 15.8)	
	$50.000 - <$100.000	29.5	(26.8, 32.3)	27.9	(25.9, 30.1)	33.6	(29.6, 37.7)	
	$100.000 -<$150.000	11.0	(9.2, 13.2)	19.0	(17.3, 20.9)	18.7	(15.8, 22.0)	
	$150.000 or more	5.0	(4.1, 6.1)	14.4	(13.0, 15.9)	9.4	(7.6, 11.6)	
Marital status	Never married	23.3	(20.4, 26.5)	23.6	(21.5, 25.8)	19.7	(16.1, 23.9)	0.0055
	Living with partner	10.5	(8.7, 12.6)	9.5	(8.2, 10.9)	7.8	(5.9, 10.2)	
	Married	46.7	(43.7, 49.7)	51.2	(49.0, 53.4)	55.6	(51.6, 59.6)	
	Divorced or Separated	13.5	(11.7, 15.5)	9.8	(8.7, 11.1)	10.5	(8.4, 13.1)	
	Widowed	6.0	(5.1, 7.2)	5.9	(5.2, 6.8)	6.3	(5.0, 7.9)	
Military status	No military	89.7	(88.0, 91.2)	92.4	(91.3, 93.4)	92.3	(90.5, 93.7)	0.0005
	Yes, served prior to Sept 2001	8.3	(7.0, 9.7)	6.6	(5.7, 7.6)	7.5	(6.0, 9.2)	
	Yes, served Sept 2001 or later	2.0	(1.3, 3.3)	1.0	(0.6, 1.6)	---	---	

		Western Massachusetts		Greater Boston		South Eastern Massachusetts		
		%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Drug and alcohol use	No	95.9	(94.3, 97.1)	96.9	(95.9, 97.7)	97.1	(94.8, 98.4)	0.4477
	Yes	4.1	(2.9, 5.7)	3.1	(2.3, 4.1)	2.9	(1.6, 5.2)	
Tobacco Use	No	75.9	(72.8, 78.7)	81.4	(79.3, 83.2)	78.3	(74.4, 81.7)	0.0077
	Yes	24.1	(21.3, 27.2)	18.6	(16.8, 20.7)	21.7	(18.3, 25.6)	
Self-reported Health status	Excellent	16.3	(14.3, 18.6)	21.5	(19.8, 23.4)	16.6	(14.3, 19.3)	0.0014
	Verv Good	36.1	(33.3, 39.0)	38.3	(36.2, 40.4)	37.3	(33.6, 41.2)	
	Good	32.8	(29.9, 35.8)	28.8	(26.8, 30.9)	31.6	(28.0, 35.6)	
	Fair	12.1	(10.3, 14.3)	9.3	(8.0, 10.7)	11.3	(9.1, 14.0)	
	Poor	2.7	(1.9, 3.7)	2.1	(1.6, 2.9)	3.0	(1.8, 5.0)	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%
Note: A dash --- indicates that the cell size is less than or equal to 5

Appendix E: Problem Gambling in Massachusetts

Appendix E1: Development and Performance of the PPGM

In Chapters 2 and 5 of this report, we discussed the features of the PPGM, which served as our primary instrument to assess problem gambling in the Baseline Population Survey. As we noted there, the PPGM is a 14-item assessment instrument with questions organized into three sections: Problems, Impaired Control, and Other Issues. The instrument employs a 12-month timeframe and recognizes a continuum of gambling across four categories (Recreational, At-Risk, Problem, and Pathological). The PPGM has been field tested and refined with both clinical and general population samples.

Between 2007 and 2010, Williams and Volberg (2010, 2014) carried out a large study to re-evaluate the classification accuracy of the South Oaks Gambling Screen (SOGS), the Canadian Problem Gambling Index (CPGI) and the NORC DSM-IV Screen for Gambling Problems (NODS) – a DSM-IV-based measure – and to investigate the performance of the PPGM relative to these other instruments. The sample for this study included 7,272 gamblers drawn from two earlier studies. The first study was an experimental investigation of the impact of administration modality and survey description on obtained problem gambling prevalence rates (Williams & Volberg, 2009). The second sample consisted of 12,521 individuals age 15 and older from 105 countries who completed an online survey of gambling in 2007 (Wood & Williams, 2009, 2011, 2012).

Both studies administered the SOGS, CPGI, NODS, and PPGM to everyone who had gambled in the past year. Participants who had one or more positive responses to any of the 39 problem gambling questions from any of the four instruments, and/or reported $50 or more in gambling losses in a typical month (estimated in U.S. dollars) were selected for clinical rating (n=4,071). A psychiatrist and a psychologist with experience in assessing and treating addictions were trained in the rating procedure. The psychiatrist and psychologist were then provided with written definitions of the typological categories as well as detailed written profiles of each selected participant's past-year gambling behavior and answers to the 39 problem gambling questions. Additional information about participants' demographics, history of addictions, substance use, and mental health issues was also provided.

Over a period of several months, the clinicians independently read each profile and assessed the person's gambling status. The choices available to them were Recreational Gambler, At-Risk Gambler, Problem Gambler, and Pathological Gambler (all using a past-year time frame). All cases in which the two clinicians disagreed (n=189; 4.6%) were reviewed to obtain a consensus decision. Each participant was given a designation of problem or non-problem gambler on each of the four instruments as well as by the joint rating of the clinicians. The relationship between the instrument versus clinician categorization was assessed using the indices of sensitivity, specificity, positive predictive power, negative predictive power, diagnostic efficiency, kappa, and the instrument versus clinician problem gambling prevalence ratio. A *z* test of proportions was used to make statistical comparisons between the instruments on sensitivity, specificity, positive predictive power, negative predictive power, and diagnostic efficiency.

Across the two samples, the PPGM had a Cronbach's alpha of .81 and a one-month test-retest reliability of .78. (total score) and .68 (five categories). In terms of concurrent validity, the PPGM has the following Kendall-tau associations with the other instruments: .70 (CPGI), .69 (SOGS), and .78 (NODS). The PPGM also had a Kendall tau association of .41 with gambling frequency and .20 with gambling next expenditure (Williams & Volberg, 2014). Subsequent research has demonstrated that the PPGM produces consistent results across different jurisdictions and over periods of time with the same people (Back et al., 2015; Williams et al., 2015).

The following table describes the performance of all four instruments assessed in this study, including sensitivity, specificity, positive predictive power, negative predictive power, diagnostic efficiency, kappa, and instrument/clinician prevalence ratio.

Table 67 Classification accuracy of the CPGI, SOGS, NODS, and PPGM

	CPGI	SOGS	NODS	PPGM
Sensitivity	91.2%	85.9%	68.5%	99.7%
Specificity	85.5%	90.4%	96.8%	98.9%
Positive Predictive Power	49.4%	56.5%	76.8%	93.5%
Negative Predictive Power	98.4%	97.8%	95.2%	99.9%
Diagnostic Efficiency	86.3%	89.8%	93.0%	99.0%
Kappa	0.56	0.62	0.68	0.96
Instrument Prevalence/Clinician Prevalence	1.85	1.52	0.89	1.07

Sensitivity: % of individuals clinically assessed as problem gamblers that also receive this designation on the assessment instrument.

Specificity: % of individuals clinically assessed as non-problem gamblers that also receive this designation on the assessment instrument.

Positive Predictive Power: % of individuals that are designated as problem gamblers on the assessment instrument that are confirmed as problem gamblers in the clinical assessment.

Negative Predictive Power: % of individuals that are designated as non-problem gamblers on the assessment instrument that are confirmed as non-problem gamblers in the clinical assessment.

Diagnostic Efficiency: Number of true positives (correctly identified as problem gamblers) + true negatives (correctly identified as non-problem gamblers) divided by the total sample size.

Kappa: A quantitative measure of overall agreement after taking chance agreement into account.

Instrument Prevalence/Clinician Prevalence: The prevalence rate of problem gambling as determined by the assessment instrument divided by the prevalence rate of problem gambling as determined by clinical assessment.

Appendix E2: Problem and Pathological Gambling Measure (PPGM)

1a. Has your involvement in gambling caused you either to borrow a significant [19] amount of money or sell some of your possessions in the past 12 months? (Yes/No).
1b. Has your involvement in gambling caused significant **financial concerns** for you or someone close to you in the past 12 months? (Yes/No). (Note: do not score 1 for 1b if 1 has already been scored for 1a).
2. Has your involvement in gambling caused significant **mental stress** in the form of guilt, anxiety, or depression for you or someone close to you in the past 12 months? (Yes/No).
3a. Has your involvement in gambling caused serious problems [20] in your **relationship with your spouse/partner, or important friends or family** in the past 12 months? (Note: Family is whomever the person themselves defines as "family")(Yes/No).
3b. Has your involvement in gambling caused you to repeatedly neglect your children or family in the past 12 months? (Yes/No). (Note: do not score 1 for 3b if 1 has already been scored for 3a).
4. Has your involvement in gambling resulted in significant **health problems** or injury for you or someone close to you in the past 12 months? (Yes/No).
5a. Has your involvement in gambling caused significant **work or school problems** for you or someone close to you in the past 12 months? (Yes/No).
5b. Has your involvement in gambling caused you to miss a significant amount of time off work or school in the past 12 months? (Yes/No). (Note: do not score 1 for 5b if 1 has already been scored for 5a).
6. Has your involvement in gambling caused you or someone close to you to write bad cheques, take money that didn't belong to you or commit other **illegal acts** to support your gambling in the past 12 months? (Yes/No).
7. Is there anyone else who would say that your involvement in gambling in the past 12 months has caused any significant problems regardless of whether you agree with them or not? (Yes/No).

PROBLEMS SCORE	**/7**

8. In the past 12 months, have you often gambled longer, with more money or more frequently than you intended to? (Yes/No).
9. In the past 12 months, have you often gone back to try and win back the money you lost? (Yes/No).
10a. In the past 12 months, have you made any attempts to either cut down, control or stop your gambling? (Yes/No). (go to 11 if 'no') (this item not scored)
10b. Were you successful in these attempts? (Yes/No). (score '1' for no and '0' for yes)
11. In the past 12 months, is there anyone else who would say that you have had difficulty controlling your gambling, regardless of whether you agreed with them or not? (Yes/No).

IMPAIRED CONTROL SCORE	**/4**

[19] *If people ask what 'significant' means, say 'significant means something that either you or someone else would say is considerable, important, or major', either because of its frequency or seriousness*
[20] *If people ask what 'problem' means say 'a difficulty that needs to be fixed'.*

12. In the past 12 months, would you say you have been preoccupied with gambling? (Yes/No).
13. In the past 12 months, when you were not gambling did you often experience irritability, restlessness or strong cravings for it? (Yes/No).
14. In the past 12 months, did you find you needed to gamble with larger and larger amounts of money to achieve the same level of excitement? (Yes/No).

OTHER ISSUES SCORE	**/3**

TOTAL SCORE	**/14**

PPGM Scoring and Classification

PATHOLOGICAL GAMBLER (4)

1. Problems Score of 1 or higher, plus
2. Impaired Control Score of 1 or higher, plus
3. Total Score of 5 or higher, plus
4. Reported gambling frequency of at least once a month on some form of gambling.

PROBLEM GAMBLER (3)

1. Problems Score of 1 or higher, plus
2. Impaired Control Score of 1 or higher, plus
3. Total Score of 2 to 4, plus
4. Reported gambling frequency of at least once a month on some form of gambling.

OR

1. Total Score of 3 or higher, plus
2. Frequency of gambling[21] AND average reported gambling loss (not net loss)[22] $\geq$ median for unambiguously identified Problem and Pathological Gamblers in the population (i.e., as established by the most recent population prevalence survey).

AT RISK GAMBLER (2) (this category also includes people who may be problem gamblers in denial)

1. Does not meet criteria for Problem or Pathological gambling, plus
2. Total Score of 1 or higher

OR

1. Frequency of gambling[1] AND average reported gambling loss (not net loss)[2] $\geq$ median for unambiguously identified Problem and Pathological Gamblers in the population (i.e., as established by the most recent population prevalence survey).

RECREATIONAL GAMBLER (1)

- Gambler who does not meet criteria for Pathological, Problem or At-Risk gambler.

NON-GAMBLER (0)

- No reported gambling on any form in past year.

[21] Simplest way of establishing this is using the highest frequency of gambling reported for any individual form in the past year.

[22] Reported gambling losses tend to be a more accurate estimate of true losses compared to net loss, especially in problem gamblers (i.e., problem gamblers often report winning as much or more than they lose and thus may not report any net loss) (Wood, R.T. & Williams, R.J**.** (2007b). How much money do you spend on gambling? The comparative validity of question wordings used to assess gambling expenditure. *International Journal of Social Research Methodology: Theory & Practice, 10 (1),* 63-77. http://hdl.handle.net/10133/752. Note: The person's income and net worth/debt can be taken into account when deciding whether the gambling loss criterion should apply.

Table 68 Endorsement table for Problem & Pathological Gambling Measure (PPGM)

Questions from SEIGMA Baseline survey	Endorsement rate[1]
Problems score	
GP5a: In the past 12 months, have you borrowed money or sold anything to get money to gamble? Would you say (0=never, 1=sometimes,2=most of the time,3=almost always)	1.35%
GP6a: In the past 12 months, has your gambling caused any financial problems for you or your household? Would you say…(0=never, 1=sometimes,2=most of the time,3=almost always)	2.57%
GP10a: Has your involvement in gambling caused significant mental stress in the form of guilt, anxiety, or depression for you or someone close to you in the past 12 months? (1=yes, 0=no)	2.86%
GP11a: Has your involvement in gambling caused significant problems in your relationship with your spouse/partner or important friends or family in the past 12 months? (1=yes, 0=no)	0.90%
GP12a: In the past 12 months, has your involvement in gambling caused you to repeatedly neglect your children or family? (1=yes, 0=no)	0.21%
GP7a: In the past 12 months, has your gambling caused you any health problems, including stress or anxiety? Would you say (0=never, 1=sometimes,2=most of the time,3=almost always)	2.77%
GP13a: Has your involvement in gambling caused significant work or school problems for you or someone close to you in the past 12 months or caused you to miss a significant amount of time off work or school? (1=yes, 0=no)	0.36%
GP14a: In the past 12 months, has your involvement in gambling caused you or someone close to you to write bad checks, take money that didn't belong to you or commit other illegal acts to support your gambling? (1=yes, 0=no)	0.46%
GP8: In the past 12 months, have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true? Would you say…(0=never, 1=sometimes,2=most of the time,3=almost always)	2.48%
Impaired control	
GP15: In the past 12 months, have you often gambled longer, with more money or more frequently than you intended to? (1=yes, 0=no)	3.40%
GP4: In the past 12 months, when you gambled, did you go back another day to try to win back the money you lost? Would you say…(0=never, 1=sometimes,2=most of the time,3=almost always)	8.76%
GP16a: In the past 12 months, have you made attempts to either cut down, control or stop gambling? (1=yes, 0=no)	7.69%
GP16b: Were you successful in these attempts to cut down, control or stop gambling? (1=yes, 0=no)	89.82%
GP17: In the past 12 months, is there anyone else who would say that you had difficulty controlling your gambling, regardless of whether you agreed with them or not? (1=yes, 0=no)	2.20%
Other issues	
GP18: In the past 12 months, would you say you have been preoccupied with gambling? (1=yes, 0=no)	1.55%
GP19: In the past 12 months, when you did try cutting down or stopping did you find you were very restless or irritable or that you had strong cravings for it? (1=yes, 0=no)	1.40%
GP20: In the past 12 months, did you find you needed to gamble with larger and larger amounts of money to achieve the same level of excitement? (1=yes, 0=no)	0.86%

[1]Percent answered yes or sometimes, most of the time or almost always. Percentages are based on unweighted N.

Table 69 Enrollment by gender, race/ethnicity, and PPGM status

		PPGM status				
Ethnicity	Gender	Non Gambler	Recreational Gambler	At Risk Gambler	Problem Gambler	Pathological Gambler
Missing	missing	18	29	1-4		
	Male	36	95	9		
	Female	35	89	1-4	1-4	1-4
Hispanic	missing	1-4		1-4		
	Male	48	86	17	1-4	1-4
	Female	120	173	19	1-4	1-4
Black	missing		1-4		1-4	
	Male	39	64	18	9	1-4
	Female	74	123	23	1-4	1-4
White	missing	9	35	1-4		
	Male	681	2156	258	36	29
	Female	1260	3208	221	18	12
Asian	missing	1-4				
	Male	68	82	17	1-4	
	Female	101	83	6	1-4	
Other	missing	1-4	1-4			
	Male	7	20	1-4		
	Female	22	26	1-4		
TOTAL		2523	6271	600	75	54

Appendix E3: The Canadian Problem Gambling Index (CPGI)

In 1997, several Canadian government agencies with responsibility for addressing problem gambling commissioned a major study to clarify the concept of problem gambling and design a new instrument to measure problem gambling in non-clinical settings. Development of the instrument, called the Canadian Problem Gambling Index (CPGI), involved conducting a large population survey, then re-testing sub-samples of respondents and completing a small number of clinical validation interviews. Many potential items were assembled from various sources and the nine items that were most effective in differentiating non-gamblers, non-problematic regular gamblers and problem gamblers were retained. These nine items constitute the Problem Gambling Severity Index (PGSI), a subset of the larger CPGI.[23] Each of the nine CPGI items, framed in the past 12 months, is scored on a four-point scale (never = 1, sometimes = 2, most of the time = 3, almost always = 4). People scoring eight or more are classified as problem gamblers. Scores of three to seven indicate "moderate risk" and scores of one or two "low risk." "Non-problem gamblers" score zero.

Research has shown that the CPGI has excellent reliability with a Cronbach's alpha of .84 and a test-retest reliability of .78 (Ferris & Wynne, 2001). Content validity was established for the CPGI by means of feedback from gambling experts. In the aforementioned study of the classification accuracy of the four most frequently used problem gambling instruments, the CPGI demonstrated good concurrent validity with the three other instruments as well as associations with gambling frequency and gambling expenditure (Williams & Volberg, 2014).

The CPGI has some important advantages over other problem gambling instruments. Specifically, it uses the more neutral term "problem gambling;" it recognizes a continuum of disordered gambling with categories of non-problem, low-risk, moderate-risk and problem gambler; it provides a 12 month timeframe; the criteria were developed and tested both with a clinical sample and a general population sample; and a strong empirical approach was used to identify the final set of items comprising the scale. However, with most of the items drawn from two older problem gambling instruments, the screen is an evolution from older measures rather than something entirely new (Ferris & Wynne, 2001).

The content of the CPGI was driven by statistical rather than theoretical considerations and some researchers have argued that the end product lacks face validity (Svetieva & Walker, 2008). The final set of questions was winnowed down from 46 candidates by deleting items having low correlations with the other items and/or the total score, with little regard to their theoretical importance. Items that are deleted to increase internal consistency are typically those with the lowest rates of endorsement (representing more severe or less common manifestations of the disorder). As a result, the CPGI does not assess some important problems deriving from gambling (i.e., work problems, school problems, involvement in illegal activities) as well as important signs of loss of control (i.e., difficulty cutting back, signs of withdrawal). The problem with this approach is that people with less common signs and symptoms of problem gambling have the potential of not being correctly identified. Another result of this approach to deleting items without strong correspondence to other items is that the factor structure of the CPGI was artificially reduced from three factors to one.

The CPGI items and scoring algorithm are presented on the following page.

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

Figure 38 CPGI items and scoring algorithm

PROBLEM GAMBLING SEVERITY INDEX

Scoring Algorithm and Questionnaire Items

1. PGSI Questionnaire Items Scored

- The 9 items (Q1-Q9) in the questionnaire below are scored.
- Score 1 for each response of "sometimes," 2 for each "most of the time," and 3 for each "almost always." A score of between 0 and 27 points is possible.

2. Classification of Gambler Sub-Types

- There are four classification categories based on the following cut-points for PGSI scores:
  - 0 = non-problem gambler
  - 1-2 = low risk gambler
  - 3-7 = moderate risk gambler
  - 8+ = problem gambler
- The non-problem gambler group is separated into gamblers and non-gamblers as these sub-groups have quite different characteristics.

3. PGSI Scored Items by Category

Dimension	Variables	Indicators	PGSI Scored Items
Problem Gambling Behaviour	Loss of control	Bet more than could afford	1. How often have you bet more than you could really afford to lose?
	Motivation	Increase wagers	2. How often have you needed to gamble with larger amounts of money to get the same feeling of excitement?
	Chasing	Return to win back losses	3. How often have you gone back another day to try to win back the money you lost?
	Borrowing	Borrow money or sold anything	4. How often have you borrowed money or sold anything to get money to gamble?
Adverse Consequences	Problem recognition	Felt problem	5. How often have you felt that you might have a problem with gambling?
	Personal consequences	Criticism	6. How often have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?
		Feelings of guilt	7. How often have you felt guilty about the way you gamble or what happens when you gamble?
		Negative health effects	8. How often has your gambling caused you any health problems, including stress or anxiety?
	Social consequences	Financial problems	9. How often has your gambling caused any financial problems for you or your household?

Appendix E4: Evidence for Revising the Scoring of the CPGI

As noted elsewhere in this report, there has been criticism of the conceptual underpinnings and validity of the SOGS, CPGI, and the DSM-IV, the three most commonly used instruments for assessing problem gambling. Most importantly, there is only fair to weak correspondence between problem gamblers identified in population surveys and the subsequent classification of these same individuals in clinical interviews. The presumption has been that the high percentage of instrument-identified problem and pathological gamblers in population studies not subsequently confirmed by clinical interview reflected a false positive problem with the instruments.

In Appendix E1, we described a study that was carried out to re-evaluate the classification accuracy of the SOGS, CPGI, and the NODS, a DSM-IV-based measure (Williams & Volberg, 2010, 2014). In general, all of the instruments performed well at correctly classifying most non-problem gamblers (i.e., specificity and negative predictive power). The main weakness of the CPGI was that roughly half of the people labeled as problem gamblers by this instrument (using a 3+ criterion) were not classified as problem gamblers by the clinical raters (i.e., low positive predictive power). Many researchers have adopted a cutoff of 3 or more on the CPGI in preference to the cutoff of 8 or more recommended by the instrument's developers because the higher cutoff yielded too few problem gamblers for analysis.

In addition to assessing the classification accuracy of the different problem gambling instruments, different cut-off criteria for problem gambling were evaluated to determine whether improved classification accuracy could be obtained. The following table shows that the CPGI/clinician prevalence ratio is closest to 1 using a 5+ cut-off. The 5+ cut-off also has significantly higher ($p < .05$) specificity, positive predictive power, and diagnostic efficiency (although lower sensitivity) compared to 3+.

Table 70 Classification accuracy of the CPGI using different scoring thresholds

	CPGI 3+	CPGI 4+	**CPGI 5+**	CPGI 6+	CPGI 7+	CPGI 8+
Sensitivity	91.2%	83.1%	**74.2%**	64.6%	54.3%	44.4%
Specificity	85.5%	92.5%	**95.6%**	97.6%	98.7%	99.2%
Positive Predictive Power	49.4%	63.1%	**72.5%**	80.5%	86.6%	89.9%
Negative Predictive Power	98.4%	97.2%	**96.0%**	94.7%	93.3%	92.0%
Diagnostic Efficiency	86.5%	91.2%	**92.7%**	93.1%	92.7%	91.9%
Kappa	0.56	0.67	**0.69**	0.68	0.63	0.55
Instrument Prev/Clinician Prev Ratio	1.85	1.32	**1.02**	0.80	0.63	0.49

A separate investigation of the CPGI independently found that the performance of the instrument was improved using a cutoff of 5+ (Currie et al., 2013). These investigators noted that the original development work for the instrument only tested the problem gambler category for validity with the names and cutoffs for the remaining categories (non-problem, low-risk, moderate-risk) established without any validity testing. Like Williams and Volberg (2014), Currie and colleagues noted that researchers often use a 3+ cutoff for the CPGI because of the small number of individuals who score 8 or more on the screen, even in very large survey samples.

These researchers conducted a comprehensive assessment of the validity of the CPGI gambler types using data from the CPGI Integrated Dataset (which includes data from prevalence surveys conducted in Alberta, British Columbia, Ontario, Manitoba, Newfoundland, and the national CPGI validation study) (n=14,833 past-year

gamblers) and from the Canadian Community Health Survey (CCHS 1.2) (n=18,913 past-year gamblers). The primary aims of their study were to assess the discriminant validity of the CPGI severity classifications and cutoff scores and to determine the impact of re-calibrating the CPGI scoring rules on the reliability and external validity of these categories.

The researchers examined gambling intensity, game preference, and gambling expenditures to assess the validity of the CPGI severity classifications. Their analysis showed that there were very few statistically significant differences across these dimensions between the low-risk and moderate-risk groups. In contrast, the differences between moderate-risk and problem gamblers were very large on nearly all of the dimensions assessed, particularly in gambling expenditures and preferences for EGMs or casino games.

The authors noted that while a major revision of the CPGI may eventually be necessary, a relatively simple way to improve the instrument would be to revise the scoring to increase the distinctiveness of the groups. Although the possibility of merging the categories of low-risk and moderate-risk gambler types was considered, the researchers concluded that a more defensible option was to re-calibrate the categories. Their proposal was to re-score the CPGI to distinguish non-problem gamblers (CPGI=0), low-risk gamblers (CPGI=1-4), moderate-risk gamblers (CPGI=5-7), and problem gamblers (CPGI=8-27) in order to improve the distinctiveness of the groups in relation to gambling intensity and game preference as well as median income spent on gambling. Although the terminology recommended by Currie et al. (2013) is different than the terminology adopted by Williams and Volberg (2014), the preferential cutoff for the CPGI to distinguish problematic gamblers from at-risk gamblers is the same.

Table 71 Classification of respondents using conventional CPGI scoring

	Sample Size Unweighted N[1]	Weighted N[2]	Percent[3]	95% CI[3]
TOTAL	9491	5,194,816	100	
Non gambler in past yr	2534	1,395,307	26.9	(25.6, 28.2)
Non problem gambler (CPGI=0)	6132	3,177,899	61.2	(59.7, 62.6)
Low risk gambler (CPGI=1-2)	564	393,330	7.6	(6.7, 8.5)
Moderate risk gambler (CPGI=3-7)	212	181,519	3.5	(2.9, 4.2)
Problem gambler (CPGI=8+)	49	46,760	0.9	(0.6, 1.3)

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

Table 72 Endorsement Table for Canadian Problem Gambling Index (CPGI)

Questions from SEIGMA Baseline survey	Endorsement rate[1]
PROBLEM GAMBLING BEHAVIOR	
Loss of Control	
GP1: Thinking about the past 12 months, have you bet more than you could really afford to lose? Would you say… (0=never, 1=sometimes,2=most of the time,3=almost always)	8.23%
Motivation	
GP3: In the past 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement? Would you say… (0=never, 1=sometimes,2=most of the time,3=almost always)	3.61%
Chasing	
GP4: In the past 12 months, when you gambled, did you go back another day to try to win back the money you lost? Would you say…(0=never, 1=sometimes,2=most of the time,3=almost always)	8.76%
Borrowing	
GP5a: In the past 12 months, have you borrowed money or sold anything to get money to gamble? Would you say (0=never, 1=sometimes,2=most of the time,3=almost always)	1.35%
ADVERSE CONSEQUENCES	
Problem recognition	
GP9: In the past 12 months, have you felt that you might have a problem with gambling? Would you say…(0=never, 1=sometimes,2=most of the time,3=almost always)	3.07%
Personal consequences	
GP8: In the past 12 months, have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true? Would you say…(0=never, 1=sometimes,2=most of the time,3=almost always)	2.48%
GP2: Thinking about the past 12 months, have you felt guilty about the way you gamble or what happens when you gamble? Would you say…(0=never, 1=sometimes,2=most of the time,3=almost always)	12.70%
GP7a: In the past 12 months, has your gambling caused you any health problems, including stress or anxiety? Would you say (0=never, 1=sometimes,2=most of the time,3=almost always)	2.77%
Social consequences	
GP6a: In the past 12 months, has your gambling caused any financial problems for you or your household? Would you say…(0=never, 1=sometimes,2=most of the time,3=almost always)	2.57%

[1]Percent answered yes or sometimes, most of the time or almost always
Percentages are based on unweighted N

Table 73 Cross-tabulation of the two problem gambling instruments

PPGM	CPGI						
	Missing	Non gambler in past yr	CPGI=0 or did not complete	CPGI=1-2	CPGI=3-4	CPGI=5-7	CPGI=8+	Total
Missing	1-4	11	40	1-4	1-4	1-4	0	.
Non gambler	0	2520	0	1-4	0	0	0	2523
Recreational gambler	85	0	5906	244	28	8	0	6186
At risk gambler	1-4	1-4	184	301	76	25	10	599
Problem gambler	0	0	1-4	14	29	21	9	75
Pathological gambler	0	0	0	1-4	1-4	19	30	54
Total	.	2523	6092	563	137	73	49	9437
Frequency Missing = 141								

Table 74 PPGM by demographic group, among whole population

		Unweighted N[1]	Weighted N[2]	Non gambler		Recreational gambler		At-risk gambler		Problem gambler		p-value[4]
				%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	
Overall		9,523	5,211,381	26.6	(25.3, 28.0)	62.9	(61.4, 64.4)	8.4	(7.5, 9.4)	2.0	(1.6, 2.6)	
Gender												<0.0001
	Male	3,787	2,431,173	22.3	(20.4, 24.4)	63.9	(61.5, 66.2)	10.7	(9.1, 12.5)	3.1	(2.3, 4.1)	
	Female	5,632	2,718,888	30.3	(28.6, 32.1)	62.1	(60.3, 63.9)	6.5	(5.6, 7.6)	1.1	(0.7, 1.6)	
Age												<0.0001
	18-20	100	211,399	45.5	(34.4, 57.0)	41.6	(30.8, 53.3)	* 11.9	(6.1, 22.1)		---	
	21-24	246	327,588	42.4	(35.1, 50.1)	52.0	(44.4, 59.6)	* 4.8	(2.4, 9.7)		---	
	25-34	996	904,752	26.2	(22.9, 29.8)	62.3	(58.3, 66.2)	8.7	(6.5, 11.6)	* 2.7	(1.5, 5.0)	
	35-54	2,890	1,702,925	21.6	(19.6, 23.9)	66.3	(63.7, 68.9)	9.9	(8.1, 12.0)	2.1	(1.4, 3.2)	
	55-64	1,976	866,881	20.3	(18.1, 22.7)	69.3	(66.5, 72.0)	7.9	(6.3, 9.9)	2.4	(1.6, 3.7)	
	65-79	2,083	655,703	25.6	(23.2, 28.2)	63.6	(60.8, 66.3)	8.5	(7.0, 10.2)	2.3	(1.5, 3.5)	
	80+	770	268,126	36.6	(32.4, 40.9)	56.5	(52.0, 60.9)	5.8	(3.9, 8.6)		---	
Ethnicity												<0.0001
	Hispanic	474	426,787	35.6	(30.0, 41.7)	49.3	(43.1, 55.5)	12.8	(8.5, 18.8)	* 2.3	(0.9, 5.6)	
	Black	361	346,740	34.3	(27.8, 41.4)	47.3	(40.3, 54.4)	12.3	(8.3, 18.0)	6.1	(3.4, 10.6)	
	White	7,925	3,920,489	23.5	(22.2, 24.9)	67.0	(65.4, 68.5)	7.8	(6.8, 8.8)	1.7	(1.3, 2.2)	
	Asian	363	279,996	42.9	(35.9, 50.2)	46.4	(39.1, 53.7)	8.3	(4.8, 13.9)		---	
	Other	83	49,119	45.7	(31.4, 60.8)	44.5	(30.7, 59.3)		---		---	
Education												<0.0001
	Less than	393	450,867	30.8	(25.0, 37.3)	53.3	(46.5, 59.9)	13.3	(9.3, 18.7)	* 2.6	(1.3, 5.2)	
	HS or GED	1,312	1,345,183	26.5	(23.3, 29.9)	57.0	(53.2, 60.6)	12.7	(10.3, 15.6)	3.8	(2.6, 5.6)	
	Some college	2,531	1,172,102	24.1	(21.8, 26.6)	65.6	(63.0, 68.2)	8.7	(7.3, 10.4)	1.5	(1.0, 2.4)	
	BA	2,452	1,329,322	24.1	(22.0, 26.4)	68.9	(66.5, 71.2)	5.7	(4.6, 7.1)	1.3	(0.8, 2.1)	
	MS or professional degree	2,110	641,585	28.9	(26.6, 31.3)	66.7	(64.2, 69.1)	3.6	(2.7, 4.8)	* 0.8	(0.4, 1.6)	
	PHD	554	172,085	42.3	(37.4, 47.3)	55.2	(50.1, 60.1)	2.3	(1.3, 4.1)		---	

		Unweighted N[1]	Weighted N[2]	Non gambler		Recreational gambler		At-risk gambler		Problem gambler		p-value[4]
				%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	
Employment												<0.0001
	Employed	5,471	3,092,048	23.2	(21.6, 24.9)	66.6	(64.7, 68.5)	8.4	(7.2, 9.7)	1.8	(1.3, 2.5)	
	Unemployed	353	269,599	19.4	(14.8, 25.0)	57.3	(49.6, 64.6)	15.5	(10.1, 23.1)	* 7.8	(4.3, 14.0)	
	Homemaker	357	212,919	35.3	(28.8, 42.5)	59.4	(52.3, 66.1)	4.6	(2.5, 8.2)		---	
	Student	329	386,133	42.3	(35.5, 49.3)	51.3	(44.3, 58.3)	* 5.4	(2.9, 9.6)		---	
	Retired	2,469	854,612	28.7	(26.5, 31.1)	61.9	(59.4, 64.4)	7.7	(6.4, 9.3)	1.7	(1.1, 2.6)	
	Disabled	360	286,109	36.3	(29.6, 43.5)	46.9	(39.7, 54.2)	14.1	(9.2, 20.8)	* 2.7	(1.1, 6.3)	
Income												<0.0001
	Less than $15,000	838	660,664	35.8	(31.4, 40.5)	46.2	(41.5, 50.9)	15.0	(11.3, 19.7)	3.0	(1.7, 5.1)	
	$15,000 - <$30,000	1,028	641,679	28.2	(24.3, 32.4)	59.5	(54.9, 63.9)	8.7	(6.4, 11.7)	3.6	(2.1, 6.2)	
	$30,000 - <$50,000	1,324	682,343	30.3	(26.5, 34.4)	56.9	(52.7, 61.0)	11.1	(8.5, 14.5)	1.6	(1.0, 2.8)	
	$50,000 - <$100,000	2,469	1,240,044	21.3	(19.1, 23.8)	68.4	(65.6, 71.0)	8.1	(6.5, 10.0)	2.2	(1.5, 3.4)	
	$100,000 - <$150,000	1,366	716,887	17.1	(14.3, 20.3)	74.4	(70.8, 77.7)	7.5	(5.6, 10.1)	* 1.0	(0.5, 2.0)	
	$150,000 or more	1,129	524,708	22.9	(20.0, 26.1)	70.2	(66.5, 73.6)	5.1	(3.5, 7.3)	* 1.8	(0.7, 4.9)	
Marital status												<0.0001
	Never	1,574	1,292,570	34.0	(30.6, 37.6)	53.7	(50.0, 57.4)	10.1	(7.9, 13.0)	2.1	(1.3, 3.6)	
	Living with	632	437,465	21.1	(17.2, 25.6)	69.1	(64.1, 73.7)	7.3	(5.0, 10.7)	* 2.5	(1.3, 4.5)	
	Married	5,033	2,499,736	23.1	(21.5, 24.7)	67.5	(65.6, 69.3)	8.1	(6.9, 9.4)	1.4	(1.0, 2.0)	
	Divorced or	1,183	527,565	26.2	(22.8, 30.0)	60.2	(56.0, 64.3)	8.8	(6.5, 11.7)	4.8	(2.7, 8.1)	
	Widowed	877	327,516	31.1	(27.0, 35.5)	58.9	(54.3, 63.3)	8.1	(5.8, 11.1)	* 1.9	(0.8, 4.4)	
												<0.0001

		Unweighted N[1]	Weighted N[2]	Non gambler		Recreational gambler		At-risk gambler		Problem gambler		p-value[4]
				%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	
Military status	No military	8,492	4,778,114	27.3	(25.9, 28.7)	62.6	(61.0, 64.1)	8.3	(7.3, 9.4)	1.8	(1.4, 2.3)	
	Yes, served prior to Sept 2001	852	319,334	17.3	(14.5, 20.7)	68.1	(63.9, 72.1)	11.5	(8.9, 14.6)	3.1	(1.9, 5.0)	
	Yes, served Sept 2001 or	68	46,512	22.2	(11.9, 37.7)	53.1	(36.4, 69.1)		---		---	
Drug and alcohol use problems												<0.0001
	No	9,283	5,037,073	27.1	(25.8, 28.5)	62.8	(61.3, 64.3)	8.2	(7.3, 9.2)	1.9	(1.5, 2.5)	
	Yes	159	133,018	10.2	(5.4, 18.5)	69.4	(58.2, 78.7)	* 14.1	(7.3, 25.6)	* 6.2	(3.1, 12.1)	
Tobacco Use												<0.0001
	No	8,120	4,221,643	28.6	(27.2, 30.1)	62.3	(60.7, 63.9)	7.5	(6.6, 8.5)	1.6	(1.2, 2.2)	
	Yes	1,229	906,889	16.6	(13.8, 19.8)	66.7	(62.6, 70.5)	12.8	(10.0, 16.2)	3.9	(2.6, 5.9)	
Self-reported Health status												<0.0001
	Excellent	2,031	1,052,121	28.0	(25.3, 30.9)	64.9	(61.8, 67.9)	6.5	(4.7, 8.8)	* 0.6	(0.3, 1.3)	
	Very Good	3,657	1,911,996	24.6	(22.6, 26.8)	66.7	(64.4, 68.9)	7.0	(5.8, 8.4)	1.7	(1.1, 2.6)	
	Good	2,652	1,519,065	24.9	(22.6, 27.4)	61.4	(58.5, 64.1)	10.9	(9.0, 13.2)	2.8	(2.0, 4.0)	
	Fair	940	573,271	32.3	(28.1, 36.9)	55.7	(51.0, 60.3)	8.3	(6.0, 11.5)	3.6	(2.0, 6.4)	
	Poor	229	148,620	38.6	(29.5, 48.6)	42.9	(34.0, 52.2)	16.4	(9.9, 25.8)	*	---	
Region												0.0519
	Western Massachuset	2,758	661,651	25.3	(23.1, 27.6)	64.5	(62.0, 67.0)	8.3	(6.7, 10.1)	1.9	(1.3, 2.8)	
	Greater Boston	5,271	3,544,953	28.0	(26.4, 29.8)	61.6	(59.8, 63.5)	8.2	(7.1, 9.4)	2.1	(1.6, 2.9)	
	South Eastern Massachuset	1,494	1,004,778	22.5	(19.6, 25.7)	66.3	(62.7, 69.6)	9.5	(7.4, 12.2)	1.7	(1.0, 2.8)	
County												0.0002
	Barnstable/Dukes/Nantuc	379	204,776	22.1	(17.2, 28.0)	69.5	(62.5, 75.6)	* 8.1	(4.3, 14.6)		---	

		Unweighted N[1]	Weighted N[2]	Non gambler		Recreational gambler		At-risk gambler		Problem gambler		
				%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
	BERKSHIRE	496	113,162	23.0	(17.9, 29.2)	69.2	(63.0, 74.8)	6.9	(4.5, 10.4)	---		
	BRISTOL	575	454,402	23.6	(19.0, 28.8)	64.7	(59.1, 70.0)	10.5	(7.2, 15.1)	* 1.2	(0.5, 2.6)	
	ESSEX	864	576,137	26.1	(22.3, 30.4)	64.6	(59.9, 69.0)	5.8	(3.8, 8.7)	* 3.5	(1.8, 6.9)	
	FRANKLIN	308	58,430	20.3	(15.6, 26.0)	71.6	(65.1, 77.4)	* 5.8	(3.1, 10.6)	---		
	HAMPDEN	1,328	361,819	24.7	(21.7, 28.0)	63.1	(59.3, 66.6)	9.9	(7.6, 12.7)	2.4	(1.5, 3.8)	
	HAMPSHIRE	626	128,240	31.3	(26.5, 36.5)	61.3	(55.8, 66.6)	* 6.0	(3.2, 11.2)	* 1.4	(0.6, 3.2)	
	MIDDLESEX	1,942	1,155,361	29.2	(26.6, 32.0)	61.2	(58.2, 64.1)	8.2	(6.5, 10.2)	1.4	(0.8, 2.4)	
	NORFOLK	819	503,622	26.2	(22.4, 30.4)	64.4	(59.7, 68.8)	8.6	(5.8, 12.5)	* 0.9	(0.4, 2.1)	
	PLYMOUTH	540	345,600	21.3	(16.8, 26.7)	66.4	(60.5, 71.8)	9.1	(6.0, 13.7)	* 3.2	(1.6, 6.1)	
	SUFFOLK	644	582,477	33.8	(29.1, 38.8)	53.8	(48.6, 58.9)	9.1	(6.2, 13.1)	* 3.3	(1.7, 6.3)	
	WORCESTER	1,002	727,356	24.4	(20.6, 28.5)	64.5	(60.0, 68.7)	8.9	(6.5, 12.2)	2.2	(1.3, 3.7)	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

[4] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Note: A dash --- indicates that the cell size is less than or equal to 5

Table 75 Past-year gambling rates by PPGM

	Recreational gambler		At-risk gambler		Problem gambler	
	%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]
Unweighted N[1]	6,271		600		129	
Weighted N[2]	3,278,144		439,884		105,738	
All gambling	100	NA	98.2[4]	(94.5, 99.4)	100	NA
All lottery	82.8	(81.4, 84.2)	93.5	(89.4, 96.0)	94.9	(86.0, 98.3)
Traditional	78.0	(76.5, 79.4)	88.0	(83.3, 91.5)	94.5	(85.8, 98.0)
Instant games	47.2	(45.4, 49.0)	73.0	(67.4, 77.9)	81.6	(71.3, 88.7)
Daily games	16.0	(14.7, 17.4)	36.4	(31.0, 42.3)	52.6	(40.9, 64.0)
Raffles	43.4	(41.6, 45.1)	40.9	(35.3, 46.8)	47.4	(35.9, 59.3)
Casino	26.2	(24.6, 27.8)	47.4	(41.4, 53.4)	51.5	(39.6, 63.3)
Bingo	3.7	(3.0, 4.5)	9.4	(6.7, 13.1)	* 17.5	(9.3, 30.5)
Horse racing	3.7	(3.1, 4.5)	7.6	(5.0, 11.2)	22.3	(13.3, 35.0)
Sports	15.2	(13.9, 16.6)	27.6	(22.5, 33.3)	40.7	(29.4, 53.0)
Private	13.4	(12.1, 14.8)	24.3	(19.3, 30.1)	33.0	(22.2, 46.0)
Online	1.3	(0.9, 1.9)	5.3	(3.4, 8.3)	* 15.2	(7.8, 27.5)

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] Among those who never gambled in past year, 4 people bought high risk stocks
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 76 Which types of gambling have contributed to your problems?

	Unweighted N[1]	Weighted N[2]	Row Percent[3]	95% CI[3]
Lottery	---	---	---	---
Instant tickets	7	5228	* 23.2	(9.6, 46.3)
Keno	---	---	---	---
Bingo	---	---	---	---
Slot machines	6	1952	* 8.7	(3.2, 21.4)
Casino table games	---	---	---	---
Sports betting	---	---	---	---
High risk stocks	---	---	---	---
Online	---	---	---	---

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%
Note: A dash --- indicates that the cell size is less than or equal to 5

Appendix F: Comparing Gambler Types

Table 77 Differences in recreational, at-risk, and problem gamblers by demographics

		Recreational gambler		At-risk gambler		Problem gambler		
		%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Unweighted N[1]		6,271		600		129		
Weighted N[2]		3,278,144		439,884		105,738		
Gender	Male	47.9	(46.1, 49.7)	59.5	(53.8, 65.0)	72.3	(61.3, 81.1)	<0.0001
	Female	52.1	(50.3, 53.9)	40.5	(35.0, 46.2)	27.7	(18.9, 38.7)	
Age	18-20	2.8	(2.0, 4.0)	* 5.9	(3.0, 11.3)		---	0.3484
	21-24	5.5	(4.5, 6.7)	* 3.7	(1.8, 7.4)		---	
	25-34	18.1	(16.5, 19.7)	18.4	(13.9, 23.9)	23.8	(13.8, 37.8)	
	35-54	36.2	(34.4, 38.0)	39.4	(33.5, 45.7)	34.4	(23.9, 46.7)	
	55-64	19.3	(18.0, 20.6)	16.0	(12.7, 20.0)	20.4	(13.2, 30.1)	
	65-79	13.4	(12.5, 14.3)	13.0	(10.5, 15.9)	14.5	(9.2, 22.1)	
	80+	4.9	(4.3, 5.5)	3.7	(2.4, 5.5)		---	
Ethnicity	Hispanic	6.7	(5.7, 7.8)	12.7	(8.5, 18.6)	* 9.3	(3.8, 21.0)	<0.0001
	Black	5.2	(4.3, 6.3)	9.9	(6.6, 14.6)	20.2	(11.8, 32.4)	
	White	83.3	(81.7, 84.9)	70.8	(64.4, 76.5)	63.9	(50.9, 75.2)	
	Asian	4.1	(3.3, 5.1)	5.4	(3.1, 9.2)		---	
	Other	0.7	(0.5, 1.0)		---	0.0	NA	
Education	Less than high school	7.5	(6.3, 8.9)	13.7	(9.6, 19.2)	* 11.2	(5.6, 21.2)	<0.0001
	HS or GED	23.8	(22.1, 25.7)	39.2	(33.2, 45.6)	49.6	(37.9, 61.4)	
	Some college	23.9	(22.6, 25.4)	23.4	(19.4, 27.9)	17.4	(11.2, 26.1)	
	BA	28.5	(27.0, 30.0)	17.4	(13.9, 21.5)	16.4	(10.1, 25.5)	
	MS or professional degree	13.3	(12.5, 14.2)	5.3	(4.0, 7.1)	* 5.1	(2.6, 9.7)	
	PHD	3.0	(2.6, 3.4)	0.9	(0.5, 1.6)		---	
Employment	Employed	64.3	(62.6, 66.1)	59.2	(53.2, 64.9)	53.4	(41.7, 64.8)	0.0051
	Unemployed	4.8	(4.0, 5.8)	9.6	(6.1, 14.6)	20.1	(11.3, 33.0)	
	Homemaker	3.9	(3.3, 4.7)	* 2.2	(1.2, 4.0)		---	
	Student	6.2	(5.1, 7.5)	* 4.7	(2.6, 8.5)		---	
	Retired	16.5	(15.5, 17.6)	15.1	(12.2, 18.4)	13.7	(8.7, 21.1)	
	Disabled	4.2	(3.4, 5.1)	9.2	(6.0, 13.9)	* 7.4	(3.1, 16.4)	
Income	Less than $15,000	10.8	(9.6, 12.2)	24.1	(18.4, 30.9)	19.9	(11.9, 31.5)	<0.0001

		Recreational gambler		At-risk gambler		Problem gambler		
		%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
	$15,000 - <$30,000	13.5	(12.1, 15.0)	13.6	(10.1, 18.1)	23.5	(14.1, 36.6)	
	$30,000 - <$50,000	13.7	(12.5, 15.1)	18.5	(14.1, 23.8)	11.4	(6.7, 18.9)	
	$50,000 - <$100,000	30.0	(28.3, 31.8)	24.3	(19.6, 29.6)	27.9	(18.8, 39.3)	
	$100,000 -<$150,000	18.9	(17.4, 20.4)	13.1	(9.7, 17.4)	* 7.4	(3.6, 14.3)	
	$150,000 or more	13.0	(11.9, 14.2)	6.5	(4.4, 9.3)	* 9.9	(3.8, 23.4)	
Marital status	Never married	21.7	(20.0, 23.5)	29.9	(24.1, 36.5)	26.4	(16.7, 39.0)	0.0257
	Living with partner	9.5	(8.4, 10.7)	7.3	(5.0, 10.7)	* 10.2	(5.5, 18.2)	
	Married	52.8	(51.0, 54.6)	46.1	(40.3, 52.0)	33.5	(24.1, 44.5)	
	Divorced or Separated	9.9	(9.0, 11.0)	10.6	(7.8, 14.2)	23.9	(14.5, 36.8)	
	Widowed	6.0	(5.4, 6.7)	6.1	(4.3, 8.5)	* 6.0	(2.6, 13.3)	
Military status	No military	92.5	(91.7, 93.3)	90.8	(88.1, 92.9)	82.9	(71.4, 90.4)	0.2230
	Yes, served prior to Sept 2001	6.7	(6.0, 7.5)	8.4	(6.4, 10.9)	9.5	(5.6, 15.6)	
	Yes, served Sept 2001 or later	0.8	(0.5, 1.1)		---		---	
Drug and alcohol use problems	No	97.2	(96.4, 97.8)	95.6	(91.5, 97.8)	92.1	(84.8, 96.1)	0.1237
	Yes	2.8	(2.2, 3.6)	* 4.4	(2.2, 8.5)	* 7.9	(3.9, 15.2)	
Tobacco Use	No	81.3	(79.7, 82.8)	73.1	(66.9, 78.5)	65.9	(53.7, 76.2)	0.0019
	Yes	18.7	(17.2, 20.3)	26.9	(21.5, 33.1)	34.1	(23.8, 46.3)	
Self-reported Health status	Excellent	20.9	(19.5, 22.3)	15.5	(11.4, 20.6)	* 6.2	(3.0, 12.6)	<0.0001
	Very Good	39.0	(37.2, 40.7)	30.5	(25.6, 35.9)	30.5	(20.7, 42.3)	
	Good	28.5	(26.9, 30.2)	37.6	(31.9, 43.7)	40.6	(29.8, 52.5)	
	Fair	9.8	(8.7, 10.9)	10.8	(7.8, 14.9)	19.7	(11.5, 31.7)	
	Poor	1.9	(1.5, 2.5)	5.5	(3.3, 9.2)		---	
Region	Western Massachusetts	13.0	(12.4, 13.7)	12.4	(10.0, 15.4)	11.9	(7.9, 17.7)	0.8030
	Greater Boston	66.7	(65.1, 68.2)	65.8	(60.2, 71.0)	72.0	(62.1, 80.1)	
	South Eastern Massachusetts	20.3	(18.9, 21.8)	21.8	(17.1, 27.3)	16.1	(9.8, 25.4)	
County	Barnstable/Dukes/Nantucket	4.3	(3.7, 5.1)	* 3.8	(2.0, 7.0)		---	0.0137
	BERKSHIRE	2.4	(2.1, 2.7)	1.8	(1.1, 2.7)		---	

		Recreational gambler		At-risk gambler		Problem gambler		
		%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
	BRISTOL	9.0	(7.9, 10.1)	10.9	(7.4, 15.6)	* 5.2	(2.3, 11.1)	
	ESSEX	11.4	(10.2, 12.6)	7.6	(4.9, 11.4)	* 19.2	(10.2, 33.1)	
	FRANKLIN	1.3	(1.1, 1.5)	* 0.8	(0.4, 1.5)		---	
	HAMPDEN	7.0	(6.4, 7.6)	8.1	(6.2, 10.7)	8.1	(4.9, 13.1)	
	HAMPSHIRE	2.4	(2.1, 2.7)	* 1.8	(0.9, 3.4)	* 1.6	(0.7, 3.9)	
	MIDDLESEX	21.6	(20.2, 23.0)	21.5	(17.3, 26.5)	15.3	(9.0, 24.7)	
	NORFOLK	9.9	(8.9, 11.0)	9.8	(6.7, 14.3)	* 4.1	(1.7, 9.7)	
	PLYMOUTH	7.0	(6.2, 7.9)	7.2	(4.6, 10.9)	* 10.3	(5.3, 19.1)	
	SUFFOLK	9.6	(8.4, 10.8)	12.1	(8.3, 17.2)	18.2	(9.9, 31.1)	
	WORCESTER	14.3	(13.0, 15.7)	14.8	(10.8, 19.9)	15.2	(9.0, 24.5)	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%
Note: A dash --- indicates that the cell size is less than or equal to 5

Table 78 Comparing reasons for gambling across gambling types

		Recreational		At-risk		Problem		
		%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Unweighted N[1]		6,271		600		129		
Weighted N[2]		3,278,144		439,884		105,738		
Reasons for gambling	For excitement/entertainment	27.9	(26.2, 29.6)	35.6	(30.1, 41.5)	35.3	(25.0, 47.1)	<0.0001
	To win money	36.3	(34.4, 38.2)	45.1	(39.1, 51.2)	48.8	(37.1, 60.7)	
	To escape or distract yourself	2.1	(1.6, 2.7)	* 3.5	(1.8, 6.6)	* 8.9	(4.7, 16.3)	
	To socialize with family or friends	18.0	(16.6, 19.5)	8.8	(5.9, 12.9)	* 2.5	(0.9, 7.0)	
	To support worthy causes	12.6	(11.5, 13.8)	* 2.9	(1.2, 6.8)		---	
	Because it makes you feel good	0.5	(0.3, 0.8)	* 3.2	(1.3, 7.6)		---	
	Other	2.7	(2.2, 3.3)		---		---	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%
Note: A dash --- indicates that the cell size is less than or equal to 5

Table 79 Expenditures by gambler type

	Recreational				At-risk				Problem		
	mean	se	median		mean	se	median		mean	se	median
Any Gambling	$762	214	$120	*	$9,785	3,289	$1,200		$9,433	2,562	$2,681
All lottery	* $640	253	$60	*	$7,017	3,349	$480	*	$5,080	2,062	$720
Traditional	* $549	280	$60	*	$6,231	3,369	$240	*	$3,411	2,058	$600
Instant games	* $272	103	$60	*	$1,542	518	$240		$1,235	233	$360
Daily games	$167	28	$60	*	$1,006	368	$162	*	$1,387	471	$240
Raffles	$114	19	$36		$155	27	$62	*	$354	137	$120
Casino	$448	103	$100	*	$3,797	2,137	$600	*	$6,301	2,999	$1,000
Bingo	* $512	228	$180	*	$4,172	3,419	$240	*	$692	336	$205
Horse racing	$265	52	$120		$569	169	$120	*	$995	368	$595
Sports	* $282	132	$60	*	$1,439	663	$240	*	$2,692	1,158	$600
Private	$173	35	$60	*	$3,290	1,409	$240	*	$457	175	$120

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 80 Estimates of annual gambling losses by gambler type, in millions

	Total[1]	Recreational[1]		At-risk[1]		Problem[1]	
			% loss		% loss		% loss
Any Gambling	$7,708	$2,498	32%	* $4,220	55%	$990	13%
All lottery	* $5,018	* $1,713	34%	* $2,805	56%	* $500	10%
Traditional	* $3,793	* $1,261	33%	* $2,206	58%	* $326	9%
Instant games	$935	* $376	40%	* $457	49%	$102	11%
Daily games	$290	$76	26%	* $143	49%	* $72	25%
Raffles	$183	$143	78%	$25	14%	* $15	8%
Casino	* $1,339	$348	26%	* $687	51%	* $303	23%
Bingo	* $212	* $51	24%	* $150	71%	* $11	5%
Horse racing	$67	$29	44%	$15	22%	* $23	34%
Sports	$402	* $131	32%	* $163	40%	* $109	27%
Private	* $426	$72	17%	* $339	80%	* $15	4%
Online	* $61	* $10	16%	* $37	61%	* $14	23%

[1] Reported in Millions of dollars

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 81 Alcohol and drug use by gambler type

		Recreational gambler		At-risk gambler		Problem gambler		
		%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Unweighted N[1]		6,271		600		129		
Weighted N[2]		3,278,144		439,884		105,738		
Alcohol use	not in past year	22.1	(20.6, 23.7)	25.7	(20.9, 31.1)	19.8	(12.5, 29.8)	0.2014
	did not report alcohol use in past 30	4.6	(3.9, 5.5)	7.7	(4.9, 12.1)	* 4.0	(1.4, 10.8)	
	Yes, in past 30 days	73.3	(71.6, 74.9)	66.6	(60.7, 72.0)	76.3	(65.8, 84.3)	
Problems with alcohol or drug (past 12 months)	No	97.2	(96.4, 97.8)	95.6	(91.5, 97.8)	92.1	(84.8, 96.1)	0.3584
	Yes, but did not seek help	1.6	(1.1, 2.2)	* 1.8	(0.7, 4.7)	* 5.7	(2.5, 12.8)	
	Yes and sought help	1.3	(0.9, 1.9)	* 2.5	(0.9, 6.5)		---	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%
Note: A dash --- indicates that the cell size is less than or equal to 5

Table 82 Proportion of close friends and family members who gambled regularly by PPGM

		Recreational gambler		At risk gambler		Problem gambler		
		%[3]	95% CI[3]	%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Unweighted N[1]		6,271		600		129		
Weighted N[2]		3,278,144		439,884		105,738		
Proportion of close friends and family members who gamble regularly	None of them	47.6	(45.8, 49.4)	21.4	(16.8, 26.8)	11.8	(6.7, 19.9)	<0.00001
	Some of them	49.6	(47.8, 51.4)	68.6	(62.7, 74.0)	74.0	(62.0, 83.2)	
	Most of them	2.3	(1.7, 3.1)	5.8	(3.7, 9.2)	* 12.6	(5.6, 25.7)	
	All of them	0.6	(0.4, 0.8)	* 4.2	(2.1, 8.2)	---		

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%
Note: A dash --- indicates that the cell size is less than or equal to 5

Table 83 During the last 12 months, has there been a person in your life that you consider gambles too much?

		Unweighted N[1]	Weighted N[2]	No		Yes		p-value[4]
				%[3]	95% CI[3]	%[3]	95% CI[3]	
Overall		9475	5,185,795	81.5	(80.3, 82.7)	18.5	(17.3, 19.7)	
Gender								0.5690
	Male	3768	2,416,995	81.1	(79.0, 83.0)	18.9	(17.0, 21.0)	
	Female	5611	2,711,736	81.8	(80.3, 83.2)	18.2	(16.8, 19.7)	
Age								<0.0001
	18-20	100	211,399	83.8	(74.0, 90.5)	16.2	(9.5, 26.0)	
	21-24	246	327,588	79.9	(72.6, 85.6)	20.1	(14.4, 27.4)	
	25-34	994	904,890	75.9	(72.2, 79.3)	24.1	(20.7, 27.8)	
	35-54	2882	1,701,465	81.4	(79.2, 83.5)	18.6	(16.5, 20.8)	
	55-64	1969	862,749	80.9	(78.2, 83.4)	19.1	(16.6, 21.8)	
	65-79	2070	646,181	84.1	(81.8, 86.1)	15.9	(13.9, 18.2)	
	80+	761	262,266	89.9	(86.8, 92.3)	10.1	(7.7, 13.2)	
Ethnicity								0.1630
	Hispanic	477	430,674	79.7	(74.1, 84.3)	20.3	(15.7, 25.9)	
	Black	364	348,936	73.9	(66.9, 79.9)	26.1	(20.1, 33.1)	
	White	7898	3,907,660	82.0	(80.7, 83.3)	18.0	(16.7, 19.3)	
	Asian	364	280,718	83.9	(77.2, 88.9)	16.1	(11.1, 22.8)	
	Other	83	49,119	82.1	(70.5, 89.9)	17.9	(10.1, 29.5)	
Education								<0.0001
	less than high school	389	449,370	80.0	(74.1, 84.7)	20.0	(15.3, 25.9)	
	HS or GED	1307	1,341,152	79.2	(75.9, 82.1)	20.8	(17.9, 24.1)	
	some college	2522	1,170,645	78.8	(76.5, 81.0)	21.2	(19.0, 23.5)	
	BA	2452	1,329,562	82.9	(80.8, 84.8)	17.1	(15.2, 19.2)	
	MS or professional degree	2105	637,947	87.0	(85.1, 88.6)	13.0	(11.4, 14.9)	
	PHD	556	173,255	89.5	(85.8, 92.3)	10.5	(7.7, 14.2)	
Employment								0.0038
	employed	5463	3,090,649	81.4	(79.7, 82.9)	18.6	(17.1, 20.3)	

		Unweighted N[1]	Weighted N[2]	No		Yes		p-value[4]
				%[3]	95% CI[3]	%[3]	95% CI[3]	
	unemployed	352	269,601	76.8	(69.4, 82.8)	23.2	(17.2, 30.6)	
	homemaker	357	212,575	80.6	(74.3, 85.6)	19.4	(14.4, 25.7)	
	student	329	386,133	85.0	(79.5, 89.2)	15.0	(10.8, 20.5)	
	retired	2452	843,346	84.5	(82.5, 86.4)	15.5	(13.6, 17.5)	
	disabled	367	292,548	73.2	(66.2, 79.3)	26.8	(20.7, 33.8)	
Income								0.0026
	Less than $15,000	839	663,420	75.3	(70.6, 79.5)	24.7	(20.5, 29.4)	
	$15,000 - <$30,000	1024	639,692	79.1	(75.1, 82.6)	20.9	(17.4, 24.9)	
	$30,000 - <$50,000	1319	682,352	80.5	(76.8, 83.7)	19.5	(16.3, 23.2)	
	$50,000 - < $100,000	2459	1,236,748	82.0	(79.6, 84.2)	18.0	(15.8, 20.4)	
	$100,000 - <$150,000	1363	714,946	84.4	(81.4, 87.0)	15.6	(13.0, 18.6)	
	$150,000 or more	1129	524,707	85.0	(81.9, 87.7)	15.0	(12.3, 18.1)	
Marital status								0.0003
	Never married	1577	1,294,144	78.4	(75.1, 81.4)	21.6	(18.6, 24.9)	
	Living with partner	629	437,785	77.3	(72.5, 81.4)	22.7	(18.6, 27.5)	
	Married	5022	2,496,693	84.1	(82.6, 85.5)	15.9	(14.5, 17.4)	
	Divorced or Separated	1184	528,905	78.5	(74.8, 81.8)	21.5	(18.2, 25.2)	
	Widowed	869	322,026	82.6	(78.3, 86.2)	17.4	(13.8, 21.7)	
Military status								0.3983
	No military	8478	4,774,508	81.4	(80.1, 82.7)	18.6	(17.3, 19.9)	
	Yes, served prior to Sep. 2001	843	315,011	83.9	(80.2, 87.1)	16.1	(12.9, 19.8)	
	Yes, served Sept 2001 or later	67	46,256	80.2	(65.4, 89.7)	* 19.8	(10.3, 34.6)	
Drug and alcohol use problems								0.0290
	No	9236	5,011,196	81.9	(80.7, 83.1)	18.1	(16.9, 19.3)	
	Yes	158	132,525	69.5	(58.2, 78.9)	30.5	(21.1, 41.8)	
Tobacco Use								<0.0001
	no	8079	4,200,592	83.0	(81.8, 84.2)	17.0	(15.8, 18.2)	
	yes	1224	903,023	74.5	(70.5, 78.1)	25.5	(21.9, 29.5)	

		Unweighted N[1]	Weighted N[2]	No		Yes		p-value[4]
				%[3]	95% CI[3]	%[3]	95% CI[3]	
Self-reported Health status								0.0116
	Excellent	2028	1,048,889	82.8	(80.0, 85.3)	17.2	(14.7, 20.0)	
	Very Good	3632	1,896,179	83.7	(81.8, 85.4)	16.3	(14.6, 18.2)	
	Good	2634	1,513,148	79.8	(77.3, 82.1)	20.2	(17.9, 22.7)	
	Fair	936	571,644	77.5	(73.2, 81.4)	22.5	(18.6, 26.8)	
	Poor	230	148,669	77.1	(68.2, 84.1)	22.9	(15.9, 31.8)	
Region								0.0873
	Western Massachusetts	2747	658,808	81.7	(79.6, 83.6)	18.3	(16.4, 20.4)	
	Greater Boston	5244	3,529,285	82.4	(80.8, 83.8)	17.6	(16.2, 19.2)	
	South Eastern Massachusetts	1484	997,701	78.6	(75.4, 81.4)	21.4	(18.6, 24.6)	
County								0.0326
	Barnstable/Dukes/Nantucket	379	203,975	85.6	(78.9, 90.4)	14.4	(9.6, 21.1)	
	BERKSHIRE	494	112,805	79.5	(73.8, 84.3)	20.5	(15.7, 26.2)	
	BRISTOL	569	451,024	74.8	(69.6, 79.4)	25.2	(20.6, 30.4)	
	ESSEX	859	570,106	81.6	(77.4, 85.2)	18.4	(14.8, 22.6)	
	FRANKLIN	308	58,583	81.9	(75.5, 86.9)	18.1	(13.1, 24.5)	
	HAMPDEN	1320	359,195	81.1	(78.2, 83.8)	18.9	(16.2, 21.8)	
	HAMPSHIRE	625	128,225	84.9	(80.9, 88.3)	15.1	(11.7, 19.1)	
	MIDDLESEX	1935	1,151,166	84.6	(82.2, 86.8)	15.4	(13.2, 17.8)	
	NORFOLK	818	503,906	79.5	(75.1, 83.4)	20.5	(16.6, 24.9)	
	PLYMOUTH	536	342,702	79.3	(74.2, 83.7)	20.7	(16.3, 25.8)	
	SUFFOLK	640	579,885	81.4	(76.6, 85.3)	18.6	(14.7, 23.4)	
	WORCESTER	992	724,223	82.0	(78.4, 85.2)	18.0	(14.8, 21.6)	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 84 What is your relationship with the person in your life that you consider gambles too much?

	Unweighted N[1]	Weighted N[2]	%[3]	95% CI[3]
TOTAL	1510	950610	100	
Spouse or Partner	122	67829	7.14	(5.59, 9.06)
Parent or Step Parent	136	127708	13.43	(10.74, 16.68)
Child or Step Child	58	33194	3.49	(2.54, 4.78)
Other person in your household	24	27453	2.89	(1.66, 4.99)
Other family member not in your household	499	296091	31.15	(27.93, 34.55)
Ex-partner	19	6853	0.72	(0.40, 1.28)
Work colleague	107	72408	7.62	(5.69, 10.13)
Friend	456	273824	28.81	(25.64, 32.19)
Neighbor	41	25089	2.64	(1.74, 3.98)
Someone else	48	20161	2.12	(1.48, 3.02)

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N

Table 85 Effect of the person's gambling

	Unweighted N[1]	Weighted N[2]		%[3]	95% CI[3]
Reduced time spent socializing	49	24,885		4.0	(2.8, 5.6)
Not fulfilled household or family duties	37	17,579		2.8	(1.9, 4.2)
Failed to do something they had promised or were supposed to do (including work-related duties)	23	12,021		1.9	(1.1, 3.2)
Emotional pain, neglect, concern, or frustration	187	108,308		17.3	(14.2, 20.9)
Financial strife, borrowing, or difficulty covering household expenses	297	202,332		32.4	(28.2, 36.9)
Stolen money or valuables	12	6,096	*	1.0	(0.5, 1.8)
Other ways	366	259,694		41.6	(37.0, 46.3)

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 86 Degree that acquaintance's gambling affected respondents personally by relationship to gambler

	Unweighted N[1]	Weighted N[2]	MEAN[3]	95% CI[3]
TOTAL	1424	909,646	2.9	(2.7, 3.2)
Spouse or Partner	118	65,841	4.4	(3.8, 5.0)
Parent or Step Parent	135	127,197	4.0	(3.2, 4.7)
Child or Step Child	55	31,217	4.8	(3.7, 6.0)
Other person in your household	23	27,103	4.2	(2.6, 5.8)
Other family member not in your household	487	289,636	2.6	(2.3, 2.9)
Ex-partner	19	6,853	4.5	(3.2, 5.9)
Work colleague	106	72,256	1.9	(1.4, 2.4)
Friend	443	265,482	2.4	(2.1, 2.6)
Neighbor	38	24,062	3.7	(2.0, 5.4)

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted

Appendix G: Comparisons with Other Massachusetts Surveys

Prior to the SEIGMA Baseline General Population Survey going into the field, three other surveys collected information about gambling and problem gambling in Massachusetts. These included: a module of questions added to the 2013 BRFSS (Okunna, Rodriguez-Monguio, Smelson, & Volberg, 2016; Okunna, Rodriguez-Monguio, Smelson, Poudel, & Volberg, 2016); an online panel survey funded by the National Center for Responsible Gaming and conducted by the Cambridge Health Alliance Division on Addictions (CHA-DOA) (Nelson et al., 2017); and an online panel survey funded and carried out by the MCCG (Massachusetts Council on Compulsive Gambling, 2013).

Each of these surveys had unique features that make direct comparisons with the SEIGMA Baseline General Population Survey challenging. These include differences in sample source, survey modality, how the survey was described to respondents, the cutoff for asking questions about gambling-related difficulties, and the problem gambling measure used. Each of these features is known to have a substantial impact on identified problem gambling prevalence rates (Williams & Volberg, 2009, 2010, 2014).

The vast majority of population surveys of gambling have used telephone administration, been described to respondents as "gambling" surveys, and used any past-year gambling as the criterion for eligibility for the problem gambling questions. In Massachusetts, the BRFSS used telephone administration; the two panel studies used online self-administration; and the SEIGMA Baseline Population Survey used a multimode approach including online self-administration, SAQs, and telephone administration. The questionnaire was variously described as a "gambling" survey, a "health" survey, and as a "health and recreation" survey to respondents in the different studies. While past-year gambling was used as the criterion for eligibility for the problem gambling questions in all four surveys, the BRFSS questionnaire included questions about lottery participation, casino gambling, and "other" kinds of betting while the other three surveys assessed gambling participation in much more detail. Finally, each of the studies included a different problem gambling instrument.

In this appendix, we provide an overview of the methodological approaches taken in all four surveys. We then focus on comparing gambling and problem gambling in the 2013 BRFSS and the SEIGMA Baseline General Population Survey. We have chosen to focus on comparisons between the Baseline General Population Survey and the 2013 BRFSS because these two surveys included representative samples of the population. The other two surveys used online panels which, although carefully structured to be demographically representative, have greater potential to represent a select subset of the state's population and not the population as a whole (Sparrow, 2006; Spijkerman, Knibbe, Knoops, Van de Mheen, & Van den Eijnden, 2009). Our own experience comparing data from online panels with telephone survey samples is that overall rates of substance use, mental health problems, and addictions are significantly higher in online panels than in population samples.[24]

[24] One of the authors of this report (Williams) has conducted three separate research investigations that have compared data obtained from a random sample of online panelists within the jurisdiction to a comparable random sample of people contacted via random digit dialing. In all three investigations, the overall rates of substance use, mental health problems, and addictions were significantly higher in the online panel, which also produced significantly higher rates of problem gambling (4.6% versus 2.1% in Alberta in 2008; 5.6% versus 3.1% in Alberta in 2009; 11.4% versus 1.0% in South Korea in 2011; 8.3% versus 1.0% in Ontario in 2011).

Comparing Methodological Approaches

MCCG Online Panel

The MCCG survey was conducted in 2013 and was primarily intended to aid in the development of problem gambling services in the Commonwealth. The panel was recruited using an opt-in web-based sample and did not constitute a true probability sample. Pre-set quotas for gender, age, and ethnicity were used to achieve representativeness of these key demographic groups. Post-stratification weighting was used to align the achieved sample more precisely with the known demographics of the Massachusetts adult population.

The MCCG panel included 1,054 respondents; the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987) was used to measure problem gambling. The SOGS is made up of 20 items based on the DSM-III diagnostic criteria for pathological gambling. The items that make up the SOGS are framed as lifetime, rather than past-year, questions. No response rate was reported for the survey because the participants were self-selected. As the authors of the report note, "response rates to survey invitations are … low and also cannot be proven to be non-systematic" (Massachusetts Council on Compulsive Gambling, 2013: 18).

CHA-DOA Online Panel

The CHA-DOA survey was completed in 2012 and was intended to pilot methods for use in a future longitudinal cohort study. The CHA-DOA panel was recruited using Massachusetts members of a GfK Knowledge Panel, an online survey panel that uses an address based sampling (ABS) frame to recruit its members. Use of an ABS frame provides for a more representative panel. While the ABS frame reduces potential sampling bias, recruitment rates (i.e., the percentage of individuals randomly selected to participate who actually join the panel) tend to be low. The researchers reported that the household recruitment rate for the sample for their study was 16.3% (Nelson, Kleschinsky, LaPlante, Gray, & Shaffer, 2013).

In December 2012, an email invitation was sent to 725 members of the Massachusetts Knowledge Panel offering a cash incentive to complete the survey. One reminder email was sent to non-responders before the survey was closed after three weeks. The final sample for the CHA-DOA panel included 511 respondents and the Alcohol Use Disorder and Associated Disabilities Interview Schedule DSM-IV Version (AUDADIS-IV) was used to measure problem gambling. The gambling module of the AUDADIS-IV is made up of 16 items that map onto the ten diagnostic criteria from the DSM-IV (Petry et al., 2005). No weighting was employed in the analysis of the data.

BRFSS 2013 Telephone Survey

The BRFSS is a nationwide health survey regarding emerging public health issues, health conditions, and behavioral risk factors. The BRFSS is conducted annually in collaboration with the Centers for Disease Control and Prevention (CDC). The CDC provides a standard core questionnaire that obtains data that can be compared across states. The CDC also provides states with additional rotating core modules and optional modules—standardized sets of questions on specific topics that states can add to the BRFSS. States are also permitted to add small numbers of state-specific questions to the BRFSS. BRFSS data are collected monthly in all 50 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and Palau. In 2013, Massachusetts added six questions to the BRFSS to assess gambling participation and problem gambling. In addition to three gambling participation questions, the BRFSS included a three-item problem gambling measure called the Brief Biosocial Gambling Screen (BBGS) made up of items drawn from the AUDADIS-IV (Gebauer, LaBrie, & Shaffer, 2010).

The 2013 BRFSS survey included landline and cell phone interviews for the standard core questions. This represents a change in administration from previous versions of the survey, which were conducted only with landlines. The BRFSS piloted cell phone interviews beginning in 2008 to reach segments of the population that

were previously inaccessible and to produce a more representative sample and higher quality data. Cell phone interviews were included in the BRFSS beginning in 2011. However, state-added questions, including those in Massachusetts assessing gambling behavior, were only administered to landline users. Recent research by the National Center for Health Statistics shows that cell phone users are more likely than landline users to be under the age of 45, living only with other unrelated adults, renting their home, living in or near poverty, and Hispanic (Blumberg & Luke, 2014). While some of these groups have high rates of gambling participation and problem gambling, they would not have been included in the 2013 BRFSS.

The 2013 BRFSS allowed for interviews to be completed in English, Spanish and Portuguese. The response rate (AAPOR RR4) was 39.9% for the combined landline and cell phone sample in Massachusetts (42.6% for landline; 29.5% for cell phone) (Centers for Disease Control and Prevention, 2014). While the overall sample size for the 2013 BRFSS was 15,072, the gambling module was administered to 3,988 respondents (all with landline telephones) and 3,318 of them completed the module.

The BRFSS weighting included adjustments for differences in probability of selection due to the telephone number, the number of telephones in the household, and the number of adults in the household. Weights were also used to reduce bias from non-response, non-coverage of households without landline phones or cell phones, and differential participation by sex, age, race/ethnicity, marital status, education, and owner/renter status. The BRFSS post-stratification categories used to adjust the data were gender, age, race/ethnicity, and regions within the state. The BRFSS employed raking (or iterative proportional fitting) in weighting the sample. In raking, telephone source (landline or cell phone), education level, marital status, and renter/owner status were added to race and ethnicity, Massachusetts regions, age group by gender, gender by race and ethnicity, and age group by race and ethnicity.

SEIGMA Baseline Population Survey

We have provided details of the SEIGMA Baseline General Population Survey methodology elsewhere in this report. To summarize, this was a state-wide survey designed to assess gambling participation and problem gambling prevalence prior to the introduction of casino gambling in Massachusetts. A second population survey, using identical methods, is planned for 2020 when all of the new gaming facilities will have been open for at least a year. The SEIGMA survey was a multimode survey conducted in 2013-2014 using online, SAQ, and telephone interview formats.

The SEIGMA Baseline General Population Survey drew from the adult (18+) population and used an ABS frame that sampled from all addresses in the Commonwealth. There was provision for Spanish language responses in all three interview modalities. The SEIGMA survey included two problem gambling measures: the PPGM and the CPGI which include items similar to the SOGS and the DSM-IV but without precisely replicating the wording of items in the other screens. The final sample size for the SEIGMA Baseline General Population Survey was 9,578 and the RR4 response rate was 37.6%.

The SEIGMA weighting procedure included adjustments for the stratified survey design, the known eligibility of addresses in the ABS sampling frame (using address type and likely household language), interview non-response (using address type, likely household language, and region of the state) and the number of household members aged 18 and over. An iterative raking process including 10 variables was used to adjust the survey sample to the 2012 Census estimates of the MA 18+ population and, in a final step, the weights were trimmed to improve the accuracy of estimates of key variables.

A table at the end of this appendix provides a comparison of key methodological features of the four surveys conducted in Massachusetts.

Gambling Participation

All four surveys included questions regarding past-year gambling behavior, frequency, and gambling type. The CHA-DOA and MCCG surveys included multiple questions about lottery participation and casino gambling as well as other gambling activities. However, without access to the actual survey data, it proved difficult to map these activities onto the items included in the SEIGMA survey. Mapping across the 2013 BRFSS and the SEIGMA survey was easier given similarities in the wording of questions about specific gambling activities.

The following table presents information about the wording of the items assessing gambling participation in SEIGMA and BRFSS as well as the endorsement rates for past-year participation. The table shows that past-year lottery participation was quite similar across the two surveys. Endorsement rates for casino and "other" gambling in SEIGMA were somewhat divergent with the BRFSS results, which were well below the rates identified in SEIGMA survey. The higher rate of lottery participation in SEIGMA (61.7%) compared with BRFSS (53.3%) is likely due to the greater specificity with which the SEIGMA survey asked about different lottery products; the BRFSS lottery participation rate is quite close to the SEIGMA rate for traditional lottery games.

The difference between SEIGMA and BRFSS in past-year casino gambling participation rates (21.5% and 14.1% respectively) is most likely due to differences in administration of the surveys. With administration limited to individuals with landline telephones in BRFSS, this survey would not have captured past-year casino gambling by younger and less affluent adults in the population. The same explanation likely applies to "other" gambling activities (19.2% and 10.4% respectively) with the added caveat that BRFSS respondents may have had difficulty accurately recalling their participation in several different types of gambling that are included in the BRFSS question.

Table 87 Comparing gambling participation in the SEIGMA baseline survey and 2013 BRFSS

Gambling Behavior	SEIGMA	MA BRFSS, 2013
All Lottery	**Questions:** • In the past 12 months, how often have you purchased lottery tickets such as Megabucks, Powerball, Lucky for Life, or Mass Cash? • In the past 12 months, how often have you purchased instant tickets or pull tabs? • In the past 12 months, how often have you purchased daily lottery games such as Keno or Jackpot Poker? **Response:** 4 or more times a week, 2-3 times a week, once a week, 2-3 times a month, once a month, less than once a month, and not at all. **Endorsement rate:** 61.7% (95% CI 60.2%-63.1%)	**Question:** • In the past 12 months, how often have you purchased lottery tickets, including scratch tickets, instant tickets or keno? **Response:** 4 or more times a week, 2-3 times a week, 1-4 times a month, less than 10 times in total, and not at all. **Endorsement rate:** 53.3% (95% CI 50.0%-56.6%)

Casino	**Question:** • In the past 12 months, how many times have you gambled at a casino, racino, or slots parlor outside of Massachusetts? **Response:** Number of times **Endorsement rate:** 21.5% (95% CI 20.3%-22.7%)	**Question:** • In the past 12 months, how often have you bet money at a casino playing table games such as blackjack, roulette, craps, or baccarat or at slot machines or other electronic gambling machines? **Response:** 4 or more times a week, 2-3 times a week, 1-4 times a month, less than 10 times in total, and not at all. **Endorsement rate:** 14.1% (95% CI 11.8%-16.6%)
Other forms	**Questions:** • In the past 12 months, how often have you bet money on sporting events (this includes sports pools)? • In the past 12 months, how often have you bet on a horse race at either a horse race track or an off-track site? • In the past 12 months, how often have you gone to a bingo hall to gamble? • In the past 12 months, how often did you purchase high risk stocks, options or futures or day trade on the stock market? • In the past 12 months, have you gambled online? **Response:** 4 or more times a week, 2-3 times a week, once a week, 2-3 times a month, once a month, less than once a month, and not at all. **Endorsement rate:** 19.2% (95% CI 18.0%-20.5%)	**Question:** • In the past 12 months, how often have you bet money in any other way such as: on sports, at race tracks, playing card games or bingo, purchasing high risk stocks, day trading on the stock market, or internet gambling? **Response:** 4 or more times a week, 2-3 times a week, 1-4 times a month, less than 10 times in total, and not at all. **Endorsement rate:** 10.4% (95% CI 8.4%-12.7%)

Problem Gambling

The following table presents information about the wording of comparable items assessing problem gambling in SEIGMA and BRFSS as well as the overall percentage of respondents who endorsed each item. Endorsement of the item assessing "withdrawal" (i.e., becoming restless or irritable when trying to cut down or stop gambling)

was similar across the two studies with overlapping confidence intervals. In contrast, the item assessing "lying" in BRFSS was not well matched by the SEIGMA item assessing whether gambling caused relationship problems. This is reflected in the lower endorsement in SEIGMA compared with BRFSS. The greatest difference was in endorsement rates for the item assessing financial problems. The item in the BRFSS was much more specific, and asked respondents if they received a financial bailout from family, friends, or welfare rather than about financial problems more generally.

Table 88 Comparing problem gambling items in the SEIGMA baseline survey and 2013 BRFSS

Problems	SEIGMA	MA BRFSS, 2013
Restless	**Question:** • In the past 12 months, when you did try cutting down or stopping did you find you were very restless or irritable or that you had strong cravings for it? **Response:** Yes, No **Endorsement rate:** 1.0% (95% CI 0.7%-1.4%)	**Question:** • Have you become restless, irritable or anxious when trying to stop or cut down on gambling? **Response:** Yes, No **Endorsement rate:** 1.2% (95 % CI 0.6%-2.3%)
Lying	**Question:** • Has your involvement in gambling caused significant problems in your relationship with your spouse/partner or important friends or family in the past 12 months? **Response:** Yes, No **Endorsement rate:** 0.5% (95% CI 0.3%-0.9%)	**Question:** • Have you tried to keep your family or friends from knowing how much you gambled? **Response:** Yes, No **Endorsement rate:** 1.1% (95% CI 0.05%-1.9%)
Financial	**Question:** • In the past 12 months, has your gambling caused any financial problems for you or your household? **Response:** Never, Sometimes, Most of the time, Almost always **Endorsement rate:** 1.7% (95% CI 1.3%-2.3%)	**Question:** • Did you have such financial trouble as a result of your gambling that you had to get help with living expenses from family, friends or welfare? **Response:** Yes, No **Endorsement rate:** 0.1% (95% CI 0.03%-0.51%)

Conclusion

Carefully comparing other gambling surveys in Massachusetts to the SEIGMA Baseline General Population Survey is important for several reasons. First, a comparison of these different surveys helps us understand the best methods to use in measuring gambling and problem gambling to obtain the most robust estimates. The extent to which the Massachusetts surveys align or differ and/or allow for meaningful comparisons of survey results can inform decision makers about future survey design.

Second, a thorough analysis of the prevalence of recreational and problem gambling in Massachusetts before the introduction of casinos provides information needed to assess potential changes in gambling prevalence rates. A review of the methodological strengths and weaknesses of the two large population surveys conducted in the Commonwealth prior to the introduction of casino gambling is important to understand the differences in resulting estimates and trend analyses across different surveys. Third, since the SEIGMA team will not conduct another population survey until 2020, it is helpful to consider whether there is a need to collect information on a more regular basis to keep gambling participation and problem gambling prevalence under surveillance in the interval between the two SEIGMA surveys.

As noted above, the two surveys using online panels, while cost-efficient, can at best address gambling in a subset of the Massachusetts population. Additional work is needed to determine how to use data from such surveys to estimate gambling and problem gambling rates for the entire Massachusetts adult population. In contrast, data on gambling and problem gambling in the BRFSS are based on a representative sample of the population and, in the case of some items, align reasonably well with the SEIGMA survey. One caveat is that, due to budget constraints, the gambling module in the 2013 BRFSS was administered to only one third of the respondents interviewed via landline. As a result, the sample size is too small to allow any meaningful inferences regarding the nature of the relationship between problem gambling and other behavioral risk factors.

Although these four studies have contributed to our understanding of gambling among Massachusetts adults to date, future studies may further enrich our knowledge of gambling in Massachusetts. One promising source is the newly launched Massachusetts Gambling Impact Cohort (MAGIC) study. The aims of MAGIC are to assess the occurrence of new cases of problem gambling in Massachusetts and develop a better understanding of how gambling problems develop and progress.

Table 89 Comparing key features of four Massachusetts surveys

	SEIGMA	BRFSS- MA, 2013	CHA-DOA Panel	MCCG Panel
Year of survey	2013-2014	2013	2012	2013
Sample size	9,578	15,072 (3,318 gambling module)	511	1,054 weighted 1,042 unweighted
Response Rate	36.6%	42.6% Landline 29.5% Cell phone 39.9% Combined	Recruitment rate 16.3% Panel response rate 70.5%	N/A
Sample source	Address based sampling	Random digit dial	Online survey panel	Online survey panel
Sample representativeness	Demographically and geographically representative sample of the Commonwealth of Massachusetts	Demographically and geographically representative sample of the Commonwealth of Massachusetts	Sample drawn from GfK Knowledge Panel. Recruited using ABS sampling frame. Potential for selection bias is high.	Quota-based representative sample of the Commonwealth of Massachusetts. Not true probability sample due to opt-in web based sample.
Geographic level	Municipality, county, state	County, MA regions, state	Region (Western, Southeastern and greater Boston), state	County, state
Survey mode	Web, mail, telephones matched to addresses	Landline and cell phone (core questions only)	Web	Web
How survey was described to respondents	Health & recreation survey	Information on the health of MA residents	N/A	Gambling survey
Language availability	English, Spanish	English, Spanish, Portuguese	English	English
Racial/ethnic groups included in survey	Hispanic or Latino (8.6%); White or Caucasian (76.2%); Black or African American (5.9%); Asian(5.5%); Some other race (1.0%); 2+ races (2.9%)	White (79.1%); Black (6.2%); Hispanic (9.3%); Asian (5.5%)	White, non-Hispanic (86.9%); Black, non-Hispanic (4.3%); Other, non-Hispanic (2.2%); 2+ races, non-Hispanic (2.3%); Hispanic (4.3%)	White, non-Hispanic (81%); African American or Black(9%); Asian (3%); Latino, Hispanic (2%); Other (2%)
Age groups included in survey	Non-institutionalized MA adults 18 or older	Non-institutionalized MA adults 18 or older residing in households with telephones or who own a cell phone	Adults 18 years or older	Adults 18 years or older with internet access

Demographic groups excluded in survey	Adults living in group quarters, incarcerated Individuals, homeless	Cell phone users only	MA residents who were not part of the GFK Knowledge Panel	MA residents who do not have access to the internet
Criterion for asking problem gambling items	Past-year gambling	Past-year gambling	Past-year gambling	Past-year gambling
Weighting Method	Raking	Raking	N/A	Slight weighting
Weighting Factors	Adjusted for non-resolution of addresses, screener non-response, within-household selection probability, and interview non-response Four counties in Western Massachusetts were oversampled to ensure 25% of the sample rather than the 12% of the population that they constitute	Adjusted for differences in probability of selection due to the telephone #, the # of telephones in the household, and the # of adults in the household; also to reduce bias from non-response, non-coverage of households without landline phones, or cell phones, and differential participation by sex, age, race/ethnicity, marital status, education, and owner/renter status	N/A	N/A
Gambling types assessed	Lottery (3 types), raffles, casinos, sports betting, bingo, horse racing, private wagering, high risk stocks, online	Lottery, casinos, "other" (sports, racetracks, card games, bingo, high risk stocks, internet)	Lottery, slot machines, other gambling machines, sports betting, casino table games, charitable, games of skill, day trading, horse or dog racing, poker at a casino, sports at a casino, internet, dog or cock fights, sports with a bookie	Lottery, slots, casinos, card games, bingo, raffle tickets, online, high risk stocks, sports, racetrack, office pool, illegal gambling

Problem gambling measure	PPGM (14 items) CPGI (9 items)	BBGS (3 items)	AUDADIS-IV (16 items) - past 12-month adaptation	SOGS (20 items)

Appendix H: Problem Gambling Services in Massachusetts – Awareness and Access

Table 90 In the past 12 months have you seen or heard any media campaigns to prevent problem gambling in Massachusetts?

		Unweighted N[1]	Weighted N[2]	Not in past year		Yes in past year		p-value[4]
				%[3]	95% CI[3]	%[3]	95% CI[3]	
Overall		9,410	5,152,799	59.0	(57.5, 60.4)	41.0	(39.6, 42.5)	
Gender								<0.0001
	Male	3,744	2,406,670	54.6	(52.2, 56.9)	45.4	(43.1, 47.8)	
	Female	5,569	2,688,471	62.8	(61.1, 64.6)	37.2	(35.4, 38.9)	
Age								<0.0001
	18-20	99	208,730	74.3	(62.7, 83.2)	25.7	(16.8, 37.3)	
	21-24	241	320,862	67.9	(60.2, 74.7)	32.1	(25.3, 39.8)	
	25-34	993	904,036	59.1	(55.1, 63.0)	40.9	(37.0, 44.9)	
	35-54	2,864	1,691,219	57.3	(54.7, 59.9)	42.7	(40.1, 45.3)	
	55-64	1,952	854,349	53.4	(50.4, 56.4)	46.6	(43.6, 49.6)	
	65-79	2,058	645,448	54.7	(51.9, 57.4)	45.3	(42.6, 48.1)	
	80+	750	260,258	65.4	(61.0, 69.6)	34.6	(30.4, 39.0)	
Ethnicity								<0.0001
	Hispanic	473	425,037	71.0	(65.4, 76.1)	29.0	(23.9, 34.6)	
	Black	363	347,810	69.5	(62.7, 75.6)	30.5	(24.4, 37.3)	
	White	7,838	3,883,647	55.6	(54.0, 57.2)	44.4	(42.8, 46.0)	
	Asian	360	277,158	70.1	(62.9, 76.5)	29.9	(23.5, 37.1)	
	Other	83	49,119	61.5	(45.7, 75.2)	38.5	(24.8, 54.3)	
Education								<0.0001
	less than high school	390	448,043	69.3	(62.8, 75.1)	30.7	(24.9, 37.2)	
	HS or GED	1,294	1,330,376	58.8	(55.1, 62.3)	41.2	(37.7, 44.9)	
	some college	2,503	1,165,378	59.2	(56.6, 61.8)	40.8	(38.2, 43.4)	
	BA	2,428	1,317,106	54.3	(51.7, 56.8)	45.7	(43.2, 48.3)	
	MS or professional degree	2,094	635,319	58.2	(55.7, 60.7)	41.8	(39.3, 44.3)	
	PHD	552	172,096	66.6	(61.7, 71.1)	33.4	(28.9, 38.3)	
Employment								<0.0001
	employed	5,429	3,071,266	56.0	(54.1, 57.9)	44.0	(42.1, 45.9)	
	unemployed	349	267,970	60.8	(53.3, 67.9)	39.2	(32.1, 46.7)	
	homemaker	350	209,892	67.0	(60.2, 73.1)	33.0	(26.9, 39.8)	

		Unweighted N[1]	Weighted N[2]	Not in past year		Yes in past year		p-value[4]
				%[3]	95% CI[3]	%[3]	95% CI[3]	
	student	326	381,205	72.7	(65.8, 78.7)	27.3	(21.3, 34.2)	
	retired	2,433	842,705	58.3	(55.7, 60.9)	41.7	(39.1, 44.3)	
	disabled	363	288,182	63.3	(56.1, 69.8)	36.7	(30.2, 43.9)	
Income								<0.0001
	Less than $15,000	830	654,660	69.2	(64.8, 73.2)	30.8	(26.8, 35.2)	
	$15,000-<$30,000	1,020	637,532	64.0	(59.5, 68.3)	36.0	(31.7, 40.5)	
	$30,000-<$50,000	1,303	674,976	61.6	(57.6, 65.4)	38.4	(34.6, 42.4)	
	$50,000-<$100,000	2,448	1,233,074	53.1	(50.1, 56.0)	46.9	(44.0, 49.9)	
	$100,000-<$150,000	1,356	712,580	50.9	(47.0, 54.7)	49.1	(45.3, 53.0)	
	$150,000 or more	1,124	521,834	53.4	(49.6, 57.3)	46.6	(42.7, 50.4)	
Marital status								<0.0001
	Never married	1,568	1,284,157	65.6	(62.1, 68.9)	34.4	(31.1, 37.9)	
	Living with partner	626	434,475	53.5	(48.2, 58.6)	46.5	(41.4, 51.8)	
	Married	4,991	2,481,865	56.1	(54.2, 58.0)	43.9	(42.0, 45.8)	
	Divorced or Separated	1,168	522,007	59.4	(55.3, 63.4)	40.6	(36.6, 44.7)	
	Widowed	856	319,297	58.1	(53.5, 62.6)	41.9	(37.4, 46.5)	
Military status								<0.0001
	No military	8,415	4,741,121	59.6	(58.0, 61.1)	40.4	(38.9, 42.0)	
	Yes, served prior to Sept 2001	837	314,131	48.4	(43.8, 53.0)	51.6	(47.0, 56.2)	
	Yes, served Sept 2001 or later	67	46,411	55.4	(39.2, 70.5)	44.6	(29.5, 60.8)	
Drug and alcohol use problems								0.0268
	No	9,173	4,982,655	59.3	(57.8, 60.7)	40.7	(39.3, 42.2)	
	Yes	156	128,457	46.5	(35.7, 57.6)	53.5	(42.4, 64.3)	
Tobacco Use								0.0066
	no	8,020	4,173,637	60.1	(58.5, 61.6)	39.9	(38.4, 41.5)	
	yes	1,220	899,058	54.1	(50.0, 58.1)	45.9	(41.9, 50.0)	
Self-reported								0.4191
	Excellent	2,012	1,036,130	59.1	(56.0, 62.2)	40.9	(37.8, 44.0)	
	Very Good	3,604	1,887,552	58.2	(55.8, 60.5)	41.8	(39.5, 44.2)	

		Unweighted N[1]	Weighted N[2]	Not in past year		Yes in past year		p-value[4]
				%[3]	95% CI[3]	%[3]	95% CI[3]	
Health status	Good	2,618	1,506,586	58.1	(55.2, 60.8)	41.9	(39.2, 44.8)	
	Fair	933	567,321	61.9	(57.4, 66.3)	38.1	(33.7, 42.6)	
	Poor	229	148,533	64.3	(55.2, 72.4)	35.7	(27.6, 44.8)	
Region								0.0002
	Western	2,723	653,761	54.3	(51.7, 56.9)	45.7	(43.1, 48.3)	
	Greater Boston	5,211	3,507,726	58.7	(56.8, 60.5)	41.3	(39.5, 43.2)	
	South Eastern Massachusetts	1,476	991,311	63.0	(59.6, 66.2)	37.0	(33.8, 40.4)	
County								<0.0001
	Barnstable/Dukes/ Nantucket	375	201,387	62.4	(55.4, 68.9)	37.6	(31.1, 44.6)	
	BERKSHIRE	489	111,735	71.8	(66.5, 76.5)	28.2	(23.5, 33.5)	
	BRISTOL	568	449,370	68.0	(63.0, 72.7)	32.0	(27.3, 37.0)	
	ESSEX	852	568,920	60.3	(55.6, 64.8)	39.7	(35.2, 44.4)	
	FRANKLIN	305	58,036	50.9	(43.7, 58.1)	49.1	(41.9, 56.3)	
	HAMPDEN	1,309	356,350	48.0	(44.3, 51.8)	52.0	(48.2, 55.7)	
	HAMPSHIRE	620	127,640	58.2	(52.8, 63.3)	41.8	(36.7, 47.2)	
	MIDDLESEX	1,926	1,143,026	60.4	(57.5, 63.3)	39.6	(36.7, 42.5)	
	NORFOLK	804	495,825	57.1	(52.5, 61.7)	42.9	(38.3, 47.5)	
	PLYMOUTH	533	340,555	56.7	(50.9, 62.3)	43.3	(37.7, 49.1)	
	SUFFOLK	645	582,235	57.0	(51.9, 62.1)	43.0	(37.9, 48.1)	
	WORCESTER	984	717,720	57.0	(52.7, 61.2)	43.0	(38.8, 47.3)	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

[4] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 91 Awareness of media campaigns to prevent problem gambling by PPGM

		Unweighted N[1]	Weighted N[2]	Not in past year		Yes in past year		
				%[3]	95% CI[3]	%[3]	95% CI[3]	p-value[4]
Overall		9,410	5,152,799	59.0	(57.5, 60.4)	41.0	(39.6, 42.5)	
PPGM								<0.0001
	Non gambler	2,479	1,362,122	72.8	(70.2, 75.3)	27.2	(24.7, 29.8)	
	Recreational gambler	6,170	3,222,966	54.4	(52.6, 56.2)	45.6	(43.8, 47.4)	
	At-risk gambler	588	435,629	51.4	(45.5, 57.4)	48.6	(42.6, 54.5)	
	Problem gambler	129	105,738	50.0	(38.4, 61.6)	50.0	(38.4, 61.6)	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups

Table 92 In the past 12 months have you been aware of any programs to prevent problem gambling [other than media campaigns] offered at your school, your place of work, in your community or elsewhere?

				Not in past year			Yes in past year		
		Unweighted N[1]	Weighted N[2]	%[3]	95% CI[3]		%[3]	95% CI[3]	p-value[4]
Overall		9,437	5,160,493	86.9	(85.9, 87.9)		13.1	(12.1, 14.1)	
Gender									<0.0001
	Male	3,766	2,411,482	84.6	(82.8, 86.2)		15.4	(13.8, 17.2)	
	Female	5,575	2,691,939	89.2	(88.0, 90.3)		10.8	(9.7, 12.0)	
Age									0.0348
	18-20	99	210,531	88.8	(78.5, 94.5)	*	11.2	(5.5, 21.5)	
	21-24	243	324,445	85.5	(79.6, 89.9)		14.5	(10.1, 20.4)	
	25-34	989	897,217	86.3	(83.3, 88.8)		13.7	(11.2, 16.7)	
	35-54	2,873	1,695,651	87.1	(85.2, 88.7)		12.9	(11.3, 14.8)	
	55-64	1,961	857,269	85.5	(83.2, 87.4)		14.5	(12.6, 16.8)	
	65-79	2,063	645,165	86.9	(84.9, 88.7)		13.1	(11.3, 15.1)	
	80+	759	263,695	91.0	(88.4, 93.1)		9.0	(6.9, 11.6)	
Ethnicity									0.2144
	Hispanic	474	429,263	87.6	(83.2, 91.0)		12.4	(9.0, 16.8)	
	Black	363	347,704	89.4	(84.7, 92.7)		10.6	(7.3, 15.3)	
	White	7,869	3,895,529	86.3	(85.1, 87.4)		13.7	(12.6, 14.9)	
	Asian	357	269,756	90.8	(85.4, 94.3)		9.2	(5.7, 14.6)	
	Other	83	49,119	87.8	(76.0, 94.2)	*	12.2	(5.8, 24.0)	
Education									0.0089
	Less than high school	387	445,440	88.3	(83.2, 92.0)		11.7	(8.0, 16.8)	
	HS or GED	1,306	1,337,991	86.6	(84.0, 88.9)		13.4	(11.1, 16.0)	
	Some college	2,507	1,166,287	85.2	(83.2, 87.0)		14.8	(13.0, 16.8)	
	BA	2,438	1,319,840	87.2	(85.3, 88.8)		12.8	(11.2, 14.7)	
	MS or professional degree	2,101	636,994	88.0	(86.2, 89.7)		12.0	(10.3, 13.8)	
	PHD	555	172,787	91.5	(88.5, 93.9)		8.5	(6.1, 11.5)	
Employment									0.0109
	Employed	5,445	3,075,592	85.9	(84.5, 87.2)		14.1	(12.8, 15.5)	
	Unemployed	352	267,866	89.7	(85.1, 92.9)		10.3	(7.1, 14.9)	
	Homemaker	352	209,891	92.8	(87.5, 95.9)		7.2	(4.1, 12.5)	

		Unweighted N[1]	Weighted N[2]	Not in past year %[3]	Not in past year 95% CI[3]	Yes in past year %[3]	Yes in past year 95% CI[3]	p-value[4]
	Student	327	384,759	87.0	(81.9, 90.9)	13.0	(9.1, 18.1)	
	Retired	2,445	843,823	88.5	(86.7, 90.0)	11.5	(10.0, 13.3)	
	Disabled	363	289,889	85.9	(80.9, 89.8)	14.1	(10.2, 19.1)	
Income								0.6683
	Less than $15,000	833	656,801	87.4	(84.2, 90.0)	12.6	(10.0, 15.8)	
	$15,000 - <$30,000	1,016	634,214	88.1	(84.8, 90.7)	11.9	(9.3, 15.2)	
	$30,000 - <$50,000	1,312	678,559	86.0	(83.2, 88.4)	14.0	(11.6, 16.8)	
	$50,000 - <$100,000	2,458	1,235,805	85.7	(83.3, 87.7)	14.3	(12.3, 16.7)	
	$100,000 -<$150,000	1,364	716,150	85.6	(82.7, 88.1)	14.4	(11.9, 17.3)	
	$150,000 or more	1,127	523,043	87.6	(84.8, 89.9)	12.4	(10.1, 15.2)	
Marital status								0.6140
	Never married	1,571	1,287,502	87.2	(84.7, 89.4)	12.8	(10.6, 15.3)	
	Living with partner	626	433,984	84.4	(79.8, 88.1)	15.6	(11.9, 20.2)	
	Married	5,009	2,486,797	87.3	(85.9, 88.5)	12.7	(11.5, 14.1)	
	Divorced or Separated	1,180	528,643	85.9	(82.7, 88.5)	14.1	(11.5, 17.3)	
	Widowed	856	318,333	87.9	(84.8, 90.5)	12.1	(9.5, 15.2)	
Military status								0.1200
	No military	8,430	4,745,759	87.1	(86.1, 88.2)	12.9	(11.8, 13.9)	
	Yes, served prior to Sept 2001	849	317,968	84.3	(80.8, 87.3)	15.7	(12.7, 19.2)	
	Yes, served Sept 2001 or later	68	46,512	79.8	(65.9, 88.9)	20.2	(11.1, 34.1)	
Drug and alcohol use problems								0.0407
	No	9,202	4,988,023	87.2	(86.2, 88.1)	12.8	(11.9, 13.8)	
	Yes	158	132,525	78.1	(68.3, 85.5)	21.9	(14.5, 31.7)	
Tobacco Use								0.0200
	No	8,049	4,183,361	87.6	(86.5, 88.6)	12.4	(11.4, 13.5)	
	Yes	1,218	895,422	84.1	(81.1, 86.7)	15.9	(13.3, 18.9)	
Self-reported Health status								0.8357
	Excellent	2,021	1,043,562	87.7	(85.4, 89.6)	12.3	(10.4, 14.6)	
	Very Good	3,618	1,888,641	87.1	(85.4, 88.6)	12.9	(11.4, 14.6)	
	Good	2,624	1,507,730	86.2	(84.1, 88.0)	13.8	(12.0, 15.9)	
	Fair	933	565,979	87.6	(84.2, 90.3)	12.4	(9.7, 15.8)	
	Poor	226	147,316	85.6	(78.7, 90.6)	14.4	(9.4, 21.3)	

		Unweighted N[1]	Weighted N[2]	Not in past year		Yes in past year		p-value[4]
				%[3]	95% CI[3]	%[3]	95% CI[3]	
Region								0.0002
	Western Massachusetts	2,733	656,125	83.2	(81.1, 85.1)	16.8	(14.9, 18.9)	
	Greater Boston	5,222	3,506,386	88.0	(86.8, 89.2)	12.0	(10.8, 13.2)	
	South Eastern Massachusetts	1,482	997,981	85.6	(82.8, 87.9)	14.4	(12.1, 17.2)	
County								0.0104
	Barnstable/Dukes/Nantucket	379	204,758	90.3	(84.9, 94.0)	9.7	(6.0, 15.1)	
	BERKSHIRE	492	112,622	85.4	(79.8, 89.6)	14.6	(10.4, 20.2)	
	BRISTOL	567	450,549	85.4	(81.2, 88.7)	14.6	(11.3, 18.8)	
	ESSEX	854	565,499	87.6	(84.3, 90.3)	12.4	(9.7, 15.7)	
	FRANKLIN	306	58,351	83.5	(77.2, 88.3)	16.5	(11.7, 22.8)	
	HAMPDEN	1,318	359,686	82.3	(79.4, 84.9)	17.7	(15.1, 20.6)	
	HAMPSHIRE	617	125,466	83.8	(78.6, 87.9)	16.2	(12.1, 21.4)	
	MIDDLESEX	1,930	1,146,992	88.6	(86.5, 90.4)	11.4	(9.6, 13.5)	
	NORFOLK	813	497,660	87.7	(84.6, 90.3)	12.3	(9.7, 15.4)	
	PLYMOUTH	536	342,674	82.9	(77.5, 87.3)	17.1	(12.7, 22.5)	
	SUFFOLK	638	577,066	87.0	(82.9, 90.2)	13.0	(9.8, 17.1)	
	WORCESTER	987	719,169	88.6	(85.9, 90.9)	11.4	(9.1, 14.1)	

[1] Unweighted N refers to the total number of respondents who answered this question

[2] Weighted N is the total number of respondents who answered the question weighted to the MA population

[3] Percentages and 95% CI are calculated using the weighted N

[4] P-value from chi-square test for differences across groups

Note: An asterisk * indicates estimates are unreliable, relative standard error > 30%

Table 93 Awareness of other programs to prevent problem gambling by PPGM

		Unweighted N[1]	Weighted N[2]	Not in past year		Yes in past year		
				%[3]	95% CI[3]			%[3]
Overall		9,437	5,163,386	87.5	(86.7,	12.5	(11.8,	
PPGM								<0.0001
	Non gambler	2,489	1,388,923	90.7	(89.3,	9.3	(8.1,	
	Recreational gambler	6,185	3,335,927	87.3	(86.3, 88.2)	12.7	(11.8, 13.7)	
	At-risk gambler	593	340,789	79.5	(75.7,	20.5	(17.2,	
	Problem	126	71,683	71.9	(62.8,	28.1	(20.5,	

[1] Unweighted N refers to the total number of respondents who answered this question
[2] Weighted N is the total number of respondents who answered the question weighted to the MA population
[3] Percentages and 95% CI are calculated using the weighted N
[4] P-value from chi-square test for differences across groups