MAGIC

MASSACHUSETTS GAMBLING IMPACT COHORT STUDY

UNIVERSITY OF MASSACHUSETTS SCHOOL OF PUBLIC HEALTH AND HEALTH SCIENCES

EXECUTIVE SUMMARY

ANALYSIS OF MAGIC WAVE 2: INCIDENCE AND TRANSITIONS

Abstract

In 2015, the first adult longitudinal cohort study of gambling and problem gambling was launched in Massachusetts. This report presents results from the first wave of the study with a focus on the establishment of the cohort and on the incidence of new cases of problem gambling since 2013/2014.

Rachel A. Volberg
Robert J. Williams
Edward J. Stanek III
Martha Zorn
Alissa Mazar

December 22, 2017

Authorship

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

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

Edward J. Stanek, Professor Emeritus, University of Massachusetts Amherst School of Public Health and Health Sciences, provided technical oversight and review of the study design and analysis. Dr. Stanek contributed sections of the report related to weighting and imputation.

Martha Zorn, Data Manager, University of Massachusetts Amherst School of Public Health and Health Sciences, was responsible for data management, data cleaning, and data analysis and contributed to all sections of the report.

Alissa Mazar, Project Manager, University of Massachusetts Amherst School of Public Health and Health Sciences, contributed to revisions of the report and sections related to key findings, weighting, and limitations of this report.

Acknowledgements

Executive Summary

This report presents results from a new cohort study of gambling and problem gambling underway in Massachusetts. While recent large-scale cohort studies have been carried out in Australia, Canada, New Zealand, and Sweden, there have been no major adult cohort studies of gambling in the United States. This report focuses on (1) establishment of the Massachusetts cohort, (2) changes in gambling participation within the cohort between 2013/2014 and 2015, (3) the "natural" incidence of problem gambling in Massachusetts (i.e., prior to the availability of casino gambling), and (4) transitions within the cohort between Wave 1 and Wave 2 of the study.

The cohort was established from a stratified sample of 3,139 respondents who completed the SEIGMA Baseline General Population Survey (BGPS), an address-based multi-mode probability sample survey conducted between September 2013 and May 2014 with adult (18+) Massachusetts residents. The main purpose of the stratified sample was to ensure that the cohort included the largest possible number of individuals who might be expected to change their gambling status over the course of the study, including Problem Gamblers, At-Risk Gamblers, and individuals who gambled regularly or spent substantial amounts on gambling. Wave 2 was conducted from March 2015 – September 2015 (an average of 16.5 months after Wave 1).

Changes in Gambling Participation

Changes in gambling participation within the cohort were examined by comparing the self-reported past-year behaviors of the members of the cohort at Wave 1 and Wave 2. Within the cohort, there was a statistically significant increase in overall gambling participation as well as in participation in casino gambling and horse race betting. There was also a statistically significant increase within the cohort in the average number of gambling formats engaged in over the previous 12 months. However, in all cases, the magnitude of the increase was quite small (2.0% – 3.2%).

Incidence of Problem Gambling

The "natural" problem gambling incidence rate within the cohort from 2013/2014 to 2015 in Massachusetts (prior to the opening of any casinos) was 2.4% (95% CI [1.5%, 3.7%]). This estimate is based on new problem gamblers in the past 12 months in the cohort who were not problem gamblers in the BGPS, weighted to the Massachusetts population. Calculating incidence via a longitudinal cohort study has limitations. For instance, despite the research team's efforts to account for biases influencing the estimates between Wave 1 and 2, there may still be unknown factors affecting the rates. The incidence rate in Massachusetts is high relative to other jurisdictions where longitudinal cohort studies have obtained rates ranging from 0.12% to 1.4%. However, it is important to recognize that these other

jurisdictions have different gambling landscapes, most of the studies in these jurisdictions utilized different measures of problem gambling to establish incidence, and the inter-assessment interval in MAGIC (16.5 months) is longer than the intervals in most of these other studies (with 12 months being typical).

If the unanticipated high incidence is accurate, the basis for this is somewhat unclear given that there was no significant change in the actual availability of legal gambling opportunities in Massachusetts during this time period. In addition to possible unaccounted biasing factors related to respondents, possible factors that may be related to high incidence include: high public awareness of casino gambling in the wake of publicity about developments in the Commonwealth and nearby states; political advertising associated with a ballot initiative to repeal casinos in Massachusetts; heavy advertising by casinos in Connecticut and Rhode Island seeking to maintain their competitive advantage; and concurrent advertising and news stories surrounding daily fantasy sports (DFS) as these games became widely available in 2015 and 2016.

Transitions, Stability, and Change

Another goal of the present analysis was to determine the rate of transitions, or the degree of stability and change among the members of the cohort between Wave 1 and Wave 2. This analysis found that Recreational Gamblers had the most stable pattern of gambling behavior with 80.3% being Recreational Gamblers in both waves. Non-Gamblers were the next most stable group, with 64.4% being Non-Gamblers in both waves, but with a sizeable portion transitioning into Recreational Gambling in Wave 2. Only 49.4% of individuals who were Problem or Pathological Gamblers in Wave 1 were in this same category in Wave 2, with a sizeable portion transitioning into At-Risk Gambling and Recreational Gambling. Finally, At-Risk Gamblers were the most unstable, with only 37.5% being in the same category in both waves. Most of these individuals transitioned to Recreational Gambling, but a significant minority transitioned to become Problem or Pathological Gamblers. In general, these results are very similar to findings in cohort studies from other jurisdictions.

Limitations

There are several factors that deserve attention when interpreting results from the MAGIC cohort study. One important limitation concerns whether all sampling biases have been accounted for. The response rate to the BGPS/Wave 1 was 36.6% and the response rate to Wave 2 was 65.1%. This produces a cumulative response rate of 23.3%, which provides ample opportunity for differential rates of response for subgroups of the population. Various adjustments and weighting partially accounted for some differential response rates within the cohort, but the methods by necessity were limited to a few factors and available information. Other factors could be related to response rates and affect estimates and interpretation. In particular, the first wave of the study (BGPS/Wave 1) was introduced as a survey of "health and recreation" in an effort to prevent participation bias related to respondents' attitudes toward gambling. In Wave 2, however, respondents were aware that the survey was predominantly about gambling, which may have influenced their decision to stay in the cohort or drop out.

There are several other limitations of all cohort studies. For one, repeated surveying is known to have some influence on self-report of behavior (e.g., social desirability to convey "improvement"), as well as perhaps some influence on actual behavior (i.e., intensive scrutiny of one's behavior may serve as a sort of intervention). For another, observed changes over time are sensitive to the reliability of the measurement instruments. For less reliable measures, repeated assessments typically lead to regression to the mean, resulting in some artefactual accentuation of transitions from more to less severe states.

Implications and Future Directions

Results from the Massachusetts cohort study suggest that the incidence of problem gambling may be relatively high, despite the fact that casinos are not yet operating in the Commonwealth. If true, it would indicate that additional prevention and treatment resources for the state are required. The results also suggest that remission from problem gambling is quite high. If true, then additional treatment resources may be especially beneficial in accelerating such transitions.

The first priority going forward is triangulating the present results with other data sources to either confirm or disconfirm the high incidence found in the present study. More specifically, we intend to examine whether there was a significant change in (a) the prevalence of problem gambling in the Baseline Targeted Population Survey in the Plainville region in 2014 compared to the Follow-Up Targeted Population Survey in 2017; (b) the prevalence rate of problem gambling in the Springfield region subsample of the Baseline General Population Survey in 2013/2014 compared to the Baseline Targeted Population Survey in the Springfield region in 2015; (c) the incidence of problem gambling in Wave 3 of MAGIC in 2016 relative to Wave 2 in 2015; and (d) any secondary data sources pertaining to problem gambling rates over this time period (i.e., Department of Public Health admissions data, Massachusetts Council on Compulsive Gambling helpline calls, Gamblers Anonymous chapters).

Future analyses will focus on predictors of problem gambling onset and whether there are gender differences in these predictors as well as predictors of problem gambling remission and the extent to which accessing treatment is one of these factors.