**2023 Massachusetts YRBS and YHS Combined Data Tables Description & Methodology Report**

The Department and DPH worked with the Center for Disease Control and Prevention (CDC) and ICF International Inc. (ICF) to conduct three coordinated surveys. The MYRBS and MYHS are conducted among high school students in grades 9 through 12; and the MYHS is conducted among middle school students in grades 6 through 8. These surveys are conducted as a representative sample of public, charter, and vocational schools in Massachusetts. Students in private schools or other educational settings are not represented. Between January and June 2023, a total of 8,745 students at 61 high schools and 91 middle schools participated in the 2023 Massachusetts Youth Risk Behavior Survey and/or Massachusetts Youth Health Survey (see figure 1 for participation by survey).

**SAMPLE & PARTICIPATION**

For the high school surveys (MYRBS and MYHS), the CDC used a two-stage sampling method to produce representative samples of students in grades 9 through 12; all public schools having at least one of grades 9 through 12 were included in the sampling frame. In the first sampling stage, schools were selected with probability proportional to school enrollment size. In the second sampling stage, intact classes of a required subject or intact classes during a required period (e.g., second period) were selected randomly. All students in sampled classes are eligible to participate. Individual classes were assigned randomly to either the MYRBS or the MYHS using a multiple-class sampling approach. Including both surveys, usable data were collected from high school students in 61 schools.

For the middle school survey (MYHS), similar scientific procedures are used by ICF to select a representative random sample of middle schools and classrooms within those schools. Data were collected from middle school students in grades 6 through 8 in 91 schools.

Data are weighted to be representative of all students in grades 9-12 and grades 6-8 and compensate for absenteeism and incomplete surveys, as well as those few schools that chose not to participate. Students who have severe limitations or disabilities, or who are often absent from school may be underrepresented.

**SURVEY QUESTIONNAIRES**

While the MYRBS and MYHS cover many similar topics, they do differ slightly. For the high school surveys differences are seen in the proportion of questions dedicated to certain topic areas. The MYRBS has a larger proportion of questions related to behaviors and experiences occurring on school property and sexual health; while the MYHS has more questions looking at substance (alcohol, tobacco, marijuana, and other drugs) use (including ease of access, and perception of use). In 2023, both surveys included revised questions on gender identity to include a ‘nonbinary’ response option. The middle school YHS survey is designed for a younger audience and does not include questions about sexual behavior and sexual orientation.

**DATA & DATA COLLECTION**

All data collected for the MYRBS and the MYHS are based on self-report from Massachusetts public school students. In 2023, students completed MYRBS and MYHS (high school and middle school) online using a unique, random login code to access the survey. All students were read a standard set of directions and were given one class period to independently complete the questionnaire. Survey procedures were designed to protect the privacy of students by allowing for anonymous and voluntary participation. Local parental permission procedures were followed before survey administration.

In 2023, the surveys returned to spring administration; after having been administered in the fall in 2021 due to the COVID-19 global pandemic.

**UNDERSTANDING AND INTERPRETING THE RESULTS**

The data tables contain data from the 2023 Massachusetts Youth Risk Behavior Survey (MYRBS) and the Massachusetts Youth Health Surveys (MYHS). Results for high school students are from the MYRBS except for a few instances where the data are derived from the MYHS and are indicated with (^). All middle school results are from the MYHS.

All data collected for the MYRBS and the MYHS are based on self-report from Massachusetts public-school students. Students in private schools or other educational settings are not represented. Students who have severe limitations or disabilities[[1]](#footnote-1) , or who are often absent from school may be underrepresented. Self-reported data may be subject to error for several reasons, including inaccurate recall of events. The data presented are univariate, descriptive percentages; no multivariate analysis was performed on these data. In addition, all data presented here are voluntary and cross-sectional, and thus should not be used to assess causality.

Percent estimates are weighted (i.e., adjusted for nonresponse and distribution of students by grade, sex, and race/ethnicity) in order to be representative of Massachusetts high school and middle school students as a whole. Percent estimates and 95% confidence intervals are presented. Since survey estimates are based on a random sample of public-school students, not a complete census, ninety-five percent (95%) confidence intervals provide a range of values that most likely contain the true percent estimates for the population and are noted throughout. The width of the interval indicates the precision of a calculation; the wider the interval the less precision in the estimate. Estimates and their 95% confidence intervals are not presented if the underlying sample size is less than 100 respondents. Estimates are not presented if the underlying sample size is less than 100 respondents. Additionally, data are not presented if a ratio of standard error to the estimate itself exceeds 30% (relative standard error of greater than 30%). The standard error of the estimate is a measure of its variability.

Due to restrictions in CDC’s data processing systems around weighting[[2]](#footnote-2), male and female are currently the only response options for sex on the survey. We acknowledge that male and female are insufficient options for students who do not identify as either and thus may be mis-represented or included in “missing/unknown.”

Students were asked sexual orientation and gender identity in separate questions; comparative risks estimates are not presented here. We recognize that these are important groups that experience several significant health disparities. More comprehensive reporting on disparities in risk for LGBTQ+ youth is pending and is being conducted by the Safe School Program for LGBTQ students.

Race-ethnicity categories in the data tables include White, Black, Hispanic/Latinx, Asian, and Other/Multiracial. When referring to White, Black, Asian, or Other/Multiracial, these categories include only non-Hispanic/non-Latinx respondents. All respondents reporting Hispanic/Latinx ethnicity are included in the Hispanic/Latinx category regardless of race. Due to small sample sizes, data on American Indian/Alaska Natives and Native Hawaiians/Other Pacific Islanders are collapsed into the Other/Multiple Race category.

Statistical significance refers to differences in data that do not occur by chance, but because an actual difference exists. The size of the difference is not indicative of its significance. Although the difference between some numbers may seem large, these differences should not be considered statistically significant unless they are explicitly noted as such or their 95% confidence intervals are nonoverlapping. All estimates were calculated at the 95% confidence interval; meaning the change or difference observed is more likely to represent real change (95% likelihood) than it is to represent chance (5% likelihood).

**Figure 1: Demographic Characteristics of the 2023 MYRBS and MYHSa**

|  |  |  |  |
| --- | --- | --- | --- |
|    | **Middle School -MYHS**  (N=3,304)  | **High School – MYRBS**(N=3,018) | **High School -MYHS** (N= 2,423)  |
|  | **Sex** b |
|      Male   | -- | 1575 (51.8%) | -- |
|      Female  | -- | 1426 (48.2%) | -- |
|      Missing   | -- | 17 | -- |
| **Gender** b |  |  |  |
|  Male | 1727 (51.3%) | -- | 1223 (51.0%) |
|  Female | 1571 (48.6%) | -- | 1096 (45.6%) |
|  Missing  | 16 | -- | 18 |
|  | **Grade** |
|      6th grade   | 1022 (31.8%) | -- | -- |
|      7th grade   | 1084 (33.5%) | -- | -- |
|      8th grade   | 1305 (34.7%) | -- | -- |
|      9th grade   | -- | 954 (26.2%) | 789 (26.3%) |
|      10th grade   | -- | 697 (25.7%) | 603 (25.5%3) |
|      11th grade   | -- | 819 (24.0%) | 700 (24.0%) |
|      12th grade   | -- | 540 (23.9%) | 339 (24.2%) |
|      Ungraded or Other   | 9 | 7 | 8 |
|      Missing   | 6 | 1 | 17 |
|  | **Race/Ethnicity C** |
|      White   | 1360 (51.5% | 1,340 (56.1%) | 1309 (56.5%) |
|      Black   | 395 (9.3% | 415 (9.4%) | 164 (10.0%) |
|      Hispanic or Latino   | 1013 (23.7%) | 848 (23.4%) | 608 (23.8% |
|      Asian   | 186 (5.1% | 228 (6.8%) | 168 (4.9%) |
|      Other or Multiple Race   | 352 (10.4% | 157 (4.3%) | 171 (4.8%) |
|      Missing   | 120 | 30 | 36 |
|  |  (a) N = number of students with a valid response for the question. Percent (%) = weighted percent of all students with a valid response for the question. The weighted percents are used because they account for slight variations between Massachusetts Middle/High School populations and the MYRBS/MYHS samples.(b) Sex and gender were asked as separate questions on MYRBS. Gender identity is not presented here for MYRBS. MYHS did not ask a question on sex. MYHS replaced ‘What is your sex?” with ‘What is your gender?” Not reported here are students indicating their gender as nonbinary.(c) Students were allowed to indicate multiple race categories. If Hispanic/Latino was indicated as an ethnic identification, the student was categorized as Hispanic/Latino regardless of race. The Other or Multiple Race category includes American Indian, Alaska Natives or Pacific Islander and youth who indicated more than one race Hispanic/Latino.   |

1. To protect students and maintain their privacy, students must be able to independently complete the questionnaire in order to participate. [↑](#footnote-ref-1)
2. Since its inception in 1991, YRBS weighting procedures (used to provide representative student data) are based on male/female in the vast majority of locations around the country. MA is among only a minority of sites that have population-level data on non-binary students, and this information is not available at a national level. Consequently, if YRBS were to modify this question, students choosing a non-binary response option would be excluded from the weighting process in places that do not allow this category for student records. For the 2023 survey, MA has added an inclusive question on gender identity. CDC is currently exploring options to update their weighting methodology and whether the gender identity question could be used instead of the sex question for weighting purposes, but as this is a massive efort changes may not be seen until after several cycles of the survey in which these questions have been added. [↑](#footnote-ref-2)