Background and Methodology
2014 MetroWest Adolescent Health Survey

MetroWest Region Middle Schools

Background

Since 2006, the MetroWest Adolescent Health Survey (MWAHS) has monitored trends in health and risk behaviors among youth in the communities served by the MetroWest Health Foundation (MHF). The MWAHS supports communities in their efforts to improve health education, inform prevention efforts, and set priorities for improving adolescent health and wellbeing.

The 2014 survey marks the 5th administration of the MWAHS and nearly a decade of local data collection in the region. For the second time, 100% of the eligible school districts in communities served by the MHF have participated. This represents a total of 56 middle and high schools surveyed across 26 school districts in the region. Within each district, we surveyed a census of students. This large amount of student data enables each school district to examine differences in behavioral reports by gender and grade, providing important information for local planning. In total, 16,171 middle school students (93% participation rate) and 24,355 high school students (89% participation rate) took the 2014 MWAHS. These high levels of student participation mean that the data are highly representative of the student populations in each district as well as youth across the region.

Survey Instrument

Content and Development

The MWAHS is largely based on the *Youth Risk Behavior Surveillance System* (YRBSS) of the Centers for Disease Control and Prevention (CDC)[1] and the Massachusetts version of the YRBS[2], administered collaboratively by the Massachusetts Department of Elementary and Secondary Education and the Department of Public Health. Additional questions on the survey have been added to address emerging behaviors as well as issues of particular salience to the MetroWest community based on input from school and community stakeholders.

Each school district's survey includes a ***core*** set of questions used by all participating districts. Most questions on the core survey have remained the same from 2006 to 2014 to allow comparisons over time. The core survey covers the following topics:

» **Substance use** (tobacco, alcohol, marijuana, other substance use, and prescription drug misuse)
» **Violence** (weapon-carrying, physical fighting, bullying, and cyberbullying)
» **Behaviors related to unintentional injuries** (seatbelt use, helmet use, impaired driving, and distracted driving)

- **Sexual behaviors** related to unintended pregnancy and sexually transmitted infections (these questions are optional at the middle school level)
- **Mental health** (stress, depressive symptoms, and suicidality)
- **Dietary behaviors** and **physical activity**
- **Protective** factors (school attachment and adult support)

In response to community requests, additional questions were added to the 2014 core survey to gather more comprehensive data on emerging youth behaviors and health issues. New questions added to both the middle and high school core surveys include: electronic cigarette use, school climate, concerns about peer violence and peer mental health issues, reasons for school absences, hours spent on activities outside of school (studying, extracurricular activities), and hours of sleep on an average school night. In addition, questions on dating violence were added to the middle school core survey for the first time; questions on dating violence have been on the high school survey since 2006. Even with the addition of these new questions, almost all students were able to complete surveys within the designated class periods.

In addition to the core survey, districts can customize their surveys by selecting up to 20 questions from a set of optional items that includes a multitude of adolescent health topics. In 2014, 23 of 26 high schools and 13 out of 24 middle school districts chose to customize their surveys. In this way, communities are able to collect data on issues of local concern or on populations of special interest.

Format

The MWAHS is a self-administered (paper-and-pencil) survey booklet. The core high school survey consists of 148 multiple-choice items and the core middle school survey consists of 110 questions. The survey is designed to be administered during a 40-minute class period.

Validity and Reliability

Given the sensitive nature of the survey, a question often asked is: *Do students respond truthfully?* Research on the validity and reliability of self-report surveys among school-based populations suggest that surveys are reliable methods of collecting data from young people. In fact, research on the national YRBSS indicates that adolescents are just as credible as adults when answering this kind of survey. These studies show that young people respond truthfully when: Participation is voluntary; students perceive the survey as important; and students feel that measures have been taken to preserve their privacy and ensure anonymity.[3]

The MWAHS meets these conditions by following procedures to assure students that participation is voluntary and anonymous. The anonymous nature of the MWAHS is highlighted in the instructions, which ask students *not* to write their name on the survey and explain that their answers will be kept private. The MWAHS instructions also call attention to why it is important to hear directly from students, stating that findings will be used to improve health education and services for young people.

Two other steps are taken to improve validity. First, all surveys are reviewed for implausible or frivolous responses. If it appears that a survey was answered frivolously, it is omitted from all analyses. Second, analyses are conducted to test for the reasonableness of responses and for the consistency of responses across related items. As with the prior survey administrations, these two procedures revealed very few problems.

The validity of the survey is further bolstered by using a questionnaire based largely upon the CDC *Youth Risk Behavior Surveillance System*. The YRBSS is a standardized instrument developed by the CDC in collaboration with other national and local health education agencies. A number of published articles address the validity and test-retest reliability of the instrument.[4,5]

Translations

Copies of the district-specific surveys (including core and optional items) are made available to schools in Spanish and Portuguese, as requested. Similar to prior surveys, very few students chose to complete surveys in these languages. For the MetroWest region as a whole in 2014, out of a total 40,526 middle and high school surveys, 196 surveys were completed in Spanish (0.5%) and 96 surveys (0.2%) were completed in Portuguese.

Survey Procedures

Survey Administration

The 2014 MWAHS survey administration took place from October 22 to November 25. Students in grades 7-8 in 24 school districts in the MetroWest region participated. In addition, 17 school districts chose to include 6th grade in their surveys. All schools followed local procedures for informing parents, which included sending information to parents/guardians in advance to inform them of the survey and provide them with the option of opting out their child(ren) if desired.

A designated MWAHS coordinator in each district was trained on the survey administration methods. All teachers read a standardized set of instructions to students which included informing them of the voluntary and anonymous nature of the survey. In addition to being opted out by parents/guardians, students were given the opportunity to decide on their own whether or not to participate. Teachers and other school staff were instructed to follow specific procedures to assure that students' answers remained private and that no students felt pressured to participate.

Visual Review of Surveys

Upon return to EDC, surveys were visually inspected for patterns of responses that would indicate that a student didn't answer truthfully. Individual surveys were removed from the dataset if student responses were implausible (e.g., a student reported engaging in many or most behaviors the maximum number of times) or if students wrote in comments indicating that they did not take the survey seriously. The number of surveys removed for any of these reasons was very small (less than 1%).

Data Entry

All survey data was manually keypunched and verified (double-punched) to ensure accuracy.

Respondents and Participation Rate

The number of participating middle school students in the MetroWest region, along with information on the number of students *not* participating and reasons for nonparticipation are provided in Table 1 below. For the MetroWest region, the overall participation rate for the middle school survey was 93%, representing 16,171 completed surveys in 24 middle school districts among students in grades 6-8.

Table 1. Number of Participating Students and Response Rate
MetroWest Region Middle Schools (Grades 6-8)
MetroWest Adolescent Health Survey, 2014

Enrollment at time of survey administration	17,478
Students not receiving parent permission to participate	233
Students choosing not to participate	98
Students absent on the day of the survey administration	747
Surveys excluded/missing*	229
Total number of surveys	16,171
Participation rate	**92.5%**

**Incomplete/missing information on classroom participation forms or excluded due to implausible response patterns*

Table 2 below shows the demographic breakdown of student participants in the MetroWest region by gender and grade, restricted to grades 7-8, which is the focus of this report. Reflecting the high participation rate, the demographic characteristics of the survey participants closely match those of the student body in the region at the time of the survey administration.

Table 2. Participants by Gender and Grade
MetroWest Region Middle Schools (Grades 7-8)
MetroWest Adolescent Health Survey, 2014

Grade	Female		Male		Unknown		TOTAL	
	n	%	n	%	n	%	n	%
7th grade	2,974	24.4%	3,110	25.5%	53	0.4%	6,137	50.3%
8th grade	2,977	24.4%	3,033	24.9%	44	0.4%	6,054	49.7%
TOTAL	**5,951**	**48.8%**	**6,143**	**50.4%**	**97**	**0.8%**	**12,191**	**100.0%**

Generalizability

The MWHAS is a census of the student bodies at each participating school. Due to the high participation rate, the student data is considered highly representative of the student population as a whole. It is unknown whether students absent from school on the day of the survey and youth who do not attend school may differ from the survey participants in terms of their health and risk behaviors.

Analysis

Missing Data and Data Cleaning

Analyses were performed to identify patterns of responses that were inconsistent or indicative of inappropriate ("joking") responses. These indicated that the vast majority of students paid attention, answered most or all questions, and completed the survey. For example, only a small fraction (1.0%) of high school students in the regional dataset checked boxes indicating they had engaged in all forms of substance use. There were also very few logical inconsistencies (e.g., students reporting that they had never smoked, but subsequently saying they had smoked in the past 30 days).

Patterns of missing data were also examined for each of the topic areas. Item-specific missing data was very low, with less than 2-3% missing data for the vast majority of items. As expected, there was a slight increase in missing data on items at the end of the survey, indicating that a small proportion of students were not able to complete the survey in the a time allotted. In general, however, district guidance about the appropriate length of the survey has assured the vast majority of students complete all questions. Overall, these validity and missing data checks provided evidence that students took the survey seriously and that the length was appropriate.

Trends

Comparisons over time are presented for MetroWest regional data and for districts that participated in multiple survey waves. Middle school trend analyses do not include 6th grade because the 2006 survey was given only to 7^{th} and 8^{th} grade students. For the regional comparisons, we include all districts that participated in the survey at each time point, even though the number of participating districts has increased somewhat over time. Preliminary analyses show that restricting analyses to the districts that participated in all five surveys administrations made little difference, and does not influence the direction or magnitude of the overall findings.

References

1. Centers for Disease Control and Prevention. 2013 Youth Risk Behavior Survey. Available at: http://www.cdc.gov/healthyyouth/yrbs/factsheets/index.htm. Accessed March 10, 2015.

2. Massachusetts Department of Elementary and Secondary Education and Massachusetts Department of Public Health (2014). Health and Risk Behaviors of Massachusetts Youth 2013. Available at: http://www.doe.mass.edu/cnp/hprograms/yrbs/2013report.pdf. Accessed March 10, 2015.

3. Centers for Disease Control and Prevention. YRBSS frequently asked questions. Available at: http://cdc.gov/HealthyYouth/yrbs/faq.htm. Accessed March 10, 2015.

4. Brener ND, Billy JOG, Grady WR. Assessment of factors affecting the validity of self-reported health-risk behavior among adolescents: evidence from the scientific literature. *Journal of Adolescent Health* 2003; 33:436-457.

5. Brener ND, Kann L, McManus TL, Kinchen S, Sundberg EC, Ross JG. Reliability of the 1999 Youth Risk Behavior Survey Questionnaire. *Journal of Adolescent Health* 2002; 31:336–342.