

bridging the gap

Research Informing Policies & Practices
for Healthy Youth

USER'S GUIDE for Bridging the Gap: Complete Descriptive Statistics on Secondary Schools

SCHOOL YEARS 2006-2007 through 2013-2014

2006 - 2007
2007 - 2008
2008 - 2009
2009 - 2010
2010 - 2011
2011 - 2012
2012 - 2013
2013 - 2014

SCHOOL YEARS

October 2015

Introduction

This User's Guide provides guidelines for reading and interpreting the tables in the *Complete Descriptive Statistics on Secondary Schools* document for school years 2006-2007 through 2013-2014. The Complete Descriptive Statistics document contains the distributions of answers to all questions asked of secondary school administrators (mostly principals and heads of food service in the same school) in nationally representative samples of middle schools and high schools. The report *School Policies and Practices to Improve Health and Prevent Obesity: National Secondary School Survey Results, Vol. 6* presents and interprets selected findings from these tables and is published in tandem with this User's Guide. Users who wish to see all of the results from the surveys—overall and for several demographic subgroups (described below)—can refer to the Complete Descriptive Statistics document, which has been designed to be as accessible as possible to both the lay and scientific reader.

We briefly outline below the nature of the research design, including the samples, which gave rise to the data in the Complete Descriptive Statistics document (a more complete description of the study methodology may be found elsewhere^{1,2}). Specific instructions about how to use the Complete Descriptive Statistics document come toward the end of this User's Guide.

DESIGN AND SAMPLES

The Bridging the Gap initiative began in 1997. Schools for the Bridging the Gap study were drawn each year from the schools that had participated in the Monitoring the Future study and were cycling out of that study after two years of having their students in a chosen grade surveyed in their classrooms. The annual Monitoring the Future samples consisted of three

nationally representative subsamples— one each of schools containing 8th, 10th and 12th grade students. However, only about 200 schools participated each year in total (including both public and private schools)—not enough to make reliable estimates of changes occurring in the conditions in U.S. schools. Therefore, as the focus of the Bridging the Gap shifted toward childhood obesity, a supplementary nationally representative sample of 600 public secondary schools was added, and their administrators were invited to complete a questionnaire each year beginning in 2007. These samples were defined in a way consistent with the Monitoring the Future design, in that three separate sub-samples of schools were surveyed each year—one each of schools selected because they contained students in 8th, 10th or 12th grade.

For the years 2007 and 2008, the data presented here are taken from the supplementary nationally representative sample of public schools described above. Beginning in 2009, the annual Monitoring the Future samples were asked the full complement of questionnaire items related to childhood obesity. Thus, for 2009 onwards, this monograph combines data from both the annual Monitoring the Future samples (public schools only) and the supplementary samples. Schools selected in the 8th grade samples are defined as middle schools, while those selected in the 10th or 12th grade samples are defined as high schools. Tenth and 12th grade results have been combined in the Complete Descriptive Statistics document.

In each school, administrators were asked to complete a self-administered questionnaire (with a completion time of approximately one to two hours). In most cases (87 percent from 2007-2014), the school principal or assistant principal was the primary respondent for Part 1 of the questionnaire. It was recommended to administrators that they ask the head or manager

of the school's food service to complete Part 2 which contained detailed questions about the foods and beverages offered to students in various school venues. From 2007-2014, a food service manager/worker was the primary Part 2 respondent in 43 percent of schools, and the secondary respondent in an additional 15 percent of schools. From 2007-2014, the principal or assistant principal acted as primary respondent for Part 2 in 49 percent of schools, and was reported as secondary in an additional 5 percent of schools. No data were collected from, or about, individual students or administrators.

Weighting of the data. All data presented in the Complete Descriptive Statistics document have been adjusted with weights to allow users to make inferences about student populations. The weights correct for any unequal probabilities of students being represented in the selection process. They also correct for any unequal probabilities of selection across grades. Thus, even though schools were randomly selected for participation within each grade, the weights adjust for the relative proportions of students in 8th, 10th and 12th grades nationally. For example, for variable number H117, we can reliably report that in 2007, 83 percent of middle school students and 37 percent of high school students in the United States were required to take physical education.

SUBGROUP DEFINITIONS

Responses to each of the questions have been presented by school year (SY) under the following cross-tabulations:

Middle school/high school. This cross-tabulation is based on the target grade in the surveyed school. If the school was selected because it contained an 8th grade, the school is defined as a middle school. If selected because it contained a 10th grade or a 12th grade, it is defined as a high school.

SES (socio-economic status) tertiles. The socio-economic status of the school's student body was determined by the percentage of students in the school eligible for USDA free and reduced price lunch (FRPL) as reported by the administrator. For each year, schools were first divided into middle or high school groups, and then were

arrayed from high to low by percentage of students eligible for FRPL; and, finally, divided into three, roughly equal-sized groups or tertiles (tertile division occurred separately for middle and high school). High-SES schools had the lowest percentage of students in the target grade(s) that year eligible for FRPL meals. Low-SES schools had the greatest percentages of students in the target grade(s) in a particular year who were eligible for FRPL meals.

Racial re-weighting. This procedure is one of two comparisons made of the school conditions experienced by students of different races and ethnicities. In these analyses, the weighted data from each school was further weighted separately by (a) the percent of White students in the target grade, (b) the percent of Black students in the target grade, (c) the percent of Latino students in the target grade. Estimates for smaller racial or ethnic subgroups were not attempted because of their smaller proportions in the population. That is, the overall weight described above for a middle or high school in any particular year was multiplied by the proportion of attending students in the racial/ethnic group of interest (White, Black, or Latino) as reported by the administrator. The statistics generated by using this weight characterize the average environmental characteristics experienced by students of each of the three specified racial or ethnic groups (White, Black, or Latino). For example, the results for variable H122 in 2008 indicate that Latino middle school students attended schools in which only 19 percent of female students participated in varsity sports. In comparison, White students attended schools where 32 percent of female students participated in varsity sports. These racial re-weighting comparisons are presented separately for middle school and high school students.

Racial composition. This cross-tabulation classifies schools into four groups based on the percentages of each racial or ethnic group in the school: greater than 66 percent White (predominantly white), greater than 50 percent Black (majority Black), greater than 50 percent Latino (majority Latino), and mixed race (all other racial/ethnic distributions). Differences based on this coding of racial composition allow comparisons of schools primarily composed of a

minority group (either Black or Latino) with schools composed largely of White students. Using the same example variable—H122 in 2008—in majority Latino middle schools, 17 percent of female students participated in varsity sports, compared to 34 percent in predominantly White middle schools. Racial composition comparisons are presented separately for middle schools and high schools.

TESTS OF STATISTICAL SIGNIFICANCE

The Complete Descriptive Statistics document contains the results of three types of statistical testing: (1) testing to assess change over time; (2) testing to assess differences between middle and high schools; and (3) testing to assess differences between population subgroups taken pairwise (e.g., Whites compared to Latinos; or the lowest SES tertile compared to the highest one).

Change over time. Two types of testing were utilized to assess the significance of change over time (that is, how likely it is that a change could have occurred due to chance): testing comparing SY 12-13 with SY 13-14 is labeled “Significance test: next to last vs. last year”; testing between SY 06-07 and SY 13-14 is labeled “Significance test: first vs. last year.” These results are located in the last two rows of data presented for each variable.

Differences between middle and high school. For each school year, testing was conducted to compare obtained percentages or means for middle school students with those obtained for high school students. The results of these tests are presented under the sub-heading “Totals by Middle School (MS) and High School (HS).”

Differences between population subgroups. For each school year, testing was also run to assess the statistical significance of differences among population subgroups (SES tertiles; racial re-weighting; racial composition). Testing was conducted separately for middle and high school population subgroups; results are presented under each population subgroup heading.

Interpreting testing results. Chi-square tests were utilized for all categorical variables. For continuous variables, tests that produced contrasts between means were utilized. The

Complete Descriptive Statistics document reports significance levels based upon these tests in the conventional fashion: ns for “not statistically significant”, * for $p < .05$, ** for $p < .01$, and *** for $p < .001$. (In layman’s language, the one, two, or three asterisks represent the probability the observed result could have happened by chance less than five percent of the time, less than one percent, and less than one-tenth of one percent, respectively.) An empty cell in a significance testing column indicates that testing could not be conducted due to zero values in one or more of the categorical variables under scrutiny.³ Where appropriate, tests were conducted in a way that accounted for the complex sampling design.

USING THE COMPLETE DESCRIPTIVE STATISTICS DOCUMENT

The Complete Descriptive Statistics document is a Microsoft Excel document that presents the data in the order in which items occurred in the questionnaires. Question text (shown in red font) is provided for each variable in the far left column, with data presented in bordered tables across the columns to the right in the following order: (a) totals by middle school and high school; (b) SES tertiles for middle and high school; (c) racial re-weighting for middle and high school; and (d) racial composition by middle and high school. Users may wish to go to a particular variable when using the spreadsheet; the following section provides a brief overview of methods to locate specific variables.

Searching for a subject or variable number. There are three methods to access the Excel search function: (1) click the “**Find and Select**” button in the default tool bar at the top right of the file (marked by a pair of black binoculars) and then select “**Find**”; (2) simultaneously press the “**Control**” and “**F**” keys; or (3) simultaneously press the “**Alt**” and “**E**” keys, and then press the “**F**” key. Any of the above methods will bring up the search box. Users may then either:

- Enter the variable number of interest into the search (the variable number may be found in the annotated copy of the questionnaire available on the BTG Web site, located with the monograph and this Complete Descriptive Statistics document), or
- Enter a word or phrase that reflects what you are seeking (such as “physical education”, or “sports” or “soft drinks”), and then search for that word or phrase in the document.

Manipulating the spreadsheet. As noted above, the Complete Descriptive Statistics document is a Microsoft Excel file that consists of one very large spreadsheet showing multiple tables. By manipulating the **scroll bars** on the right side and at the bottom of the screen, or by using the **arrow** keys or **page up/down** keys, users can shift the portion of the spreadsheet to change the area of focus.

Entries in the tables. Data are presented separately for each school year. For categorical variables (such as school type, the first variable presented), percentage distributions are provided for each answer category. For continuous variables (such as number of students in the school, the second variable presented), means and standard deviations are provided. For yes/no variables or those that require a check mark if a condition exists, only the percentage who said “yes” or checked the box are reported in order to reduce the number of lines in the table without the loss of key information.

Numbers of schools. The numbers of schools participating in the study each year may be found on the Complete Descriptive Statistics document worksheet entitled “Numbers of Schools.” The worksheet provides the overall number of schools as well as the numbers of schools contained in the various subgroups. Identical information is presented below in Table 1 for users’ reference.

TABLE 1 Numbers of Schools

Year	Totals:		SES Tertiles:					
	Middle School	High School	Middle School			High School		
			Low	Middle	High	Low	Middle	High
SY 06-07	222	224	76	74	72	84	71	69
SY 07-08	265	262	85	93	87	91	88	83
SY 08-09	330	377	114	106	110	128	122	126
SY 09-10	339	366	113	113	113	122	121	122
SY 10-11	321	346	106	107	108	115	117	114
SY 11-12	315	352	104	104	106	120	116	116
SY 12-13	311	341	102	104	105	112	116	113
SY 13-14	300	312	100	99	99	105	104	103
	Racial Composition:							
	Middle School				High School			
	>66% White	>50% Black	>50% Latino	Other	>66% White	>50% Black	>50% Latino	Other
SY 06-07	102	28	42	50	115	24	26	59
SY 07-08	120	34	42	69	134	26	33	69
SY 08-09	148	41	49	92	201	39	33	104
SY 09-10	152	31	58	98	216	26	37	87
SY 10-11	142	25	58	96	188	30	37	91
SY 11-12	147	23	56	89	181	32	45	94
SY 12-13	128	29	56	98	176	21	44	100
SY 13-14	123	32	50	95	179	22	30	81

Referencing the document. The title of the Complete Descriptive Statistics document along with a suggested citation is provided on the worksheet labeled “Title Page.”

CROSS-REFERENCING THE ELEMENTARY SCHOOL RESULTS

Some users may wish to compare the results from middle and high schools with those from the elementary school survey conducted by the University of Illinois at Chicago through the Bridging the Gap Initiative. The elementary school results are available at www.bridgingthegapresearch.org in PDF format. The elementary school questionnaire is not identical to the instrument used for middle and high schools, but many questions are shared between the two instruments.

References

¹ Johnston LD, O'Malley PM, Terry-McElrath YM, et al. *School Policies and Practices to Improve Health and Prevent Obesity: National Secondary School Survey Results, School Years 2006–07 and 2007–08. Volume 1.* Ann Arbor, MI: Bridging the Gap Program, Survey Research Center, Institute for Social Research; 2011.

² Miech RA, Johnston LD, O'Malley PM, et al. *Monitoring the Future National Survey Results on Drug Use, 1975-2014. Volume 1: Secondary School Students.* Ann Arbor, MI: Institute for Social Research, The University of Michigan; 2015.

³ Significance testing for change over time and between racial re-weighting groups required adjustments for design effects. Therefore, if any of the levels in the categorical variables were zero for the years under scrutiny, the chi-square test could not be performed and the test entry was left blank. For the remaining types of significance testing (middle vs. high school; SES tertiles; racial composition), if the levels in categorical variables were zero for *both* pairs of sub-groups under scrutiny the chi-square test could not be performed and the test was left blank.

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