

## Chapter 10

# Data From the 2002-2005 National Norms Study

This chapter describes the results of the National Norms Study for the MAYSI-2, which was funded by the William T. Grant Foundation from July 2002 to August 2005. The results of the study are described in Tables 17 through 26 (pp. 98-108). The study had two purposes.

First, the study developed new national norms that allow MAYSI-2 users to compare youths to national norms rather than the Massachusetts norms on which current cut-off scores have been based. The results of the study indicated that adjustments to cut-off scores were required on only one scale (*Warning, for Alcohol/Drug Use*). The adjustment was made in the Scoring Summary form in this manual, and in development of the new MAYSIWARE software.

Second, the study examined the degree of consistency across U.S. juvenile justice facilities in age-related, gender-related, and ethnicity/race-related differences in the proportions of youths with elevations on MAYSI-2 scales. Meta-analytic techniques were used to determine which differences among youths, related to these demographic variables, could be reliably expected across sites, and which of these differences varied too much across sites to be considered generally true for youths in juvenile justice programs.

There were several reasons for developing national norms and examining the consistency of differences according to demographic variables. Since the MAYSI-2 was released in 2000, MAYSI-2 users have been identifying youths with potential mental health needs by comparing their scores on the MAYSI-2 scales to norms developed in the original Massachusetts study, supplemented by the original California data. For example, the “Warning” cut-off score on any given scale of the MAYSI-2 was developed by finding the score that identified the highest-scoring 10% of youths in the Massachusetts sample on that scale.

In the years following the release of the MAYSI-2, we had many opportunities to examine facilities’ databases that had been accumulated in the normal course of administration to all youths admitted to facilities in various parts of the U.S. Inspection of these data seemed to indicate that in some cases the proportions of youths with elevated scale scores were similar to those in the Massachusetts study, but in other cases they varied substantially. This variability, albeit expected, raised the question of the appropriateness of applying Massachusetts-based norms nationwide.

Of equal importance is the issue of variability in the prevalence of childhood disorders as a function of demographic characteristics such as gender and race (Mash & Dozois, 2003). The Massachusetts study identified some differences in the proportions of youths of different genders, ages, or race/ethnicity who were elevated on MAYSI-2 scales. With respect to gender, for example, girls have been more likely than boys to meet Caution cut-offs on all MAYSI-2 scales except *Alcohol/Drug Use*. In the Massachusetts sample, this was true for girls and boys within each of the main ethnic groups (African-American/Black, Hispanic, and non-Hispanic White youths). The only age differences discovered to date have been a tendency for lower proportions of younger (12-14) than of older (15-17) youths to be elevated on the *Alcohol/Drug Use* scale.

A few ethnic differences were identified in the Massachusetts sample, such as lower *Angry-Irritable* mean scores for African-American/Black boys than for non-Hispanic White boys, and higher *Depressed-Anxious* mean scores for Hispanic boys than for African-American/Black boys. Some research suggests that youths of different ethnic backgrounds who enter the juvenile justice system may indeed differ in prevalence of mental and emotional disorders in a manner consistent with our findings (e.g., Dembo et al., 1998).

The problem is that we have not known if the Massachusetts differences apply to ethnic (or age, or gender) subpopulations of juvenile justice youths generally across the U.S., or whether they might be peculiar to Massachusetts. For example, we have not known if the direction and magnitude of gender differences hold within ethnic groups across sites. Likewise, we have not known if the relative absence of age differences on most MAYSI-2 scales holds true nationally. The National Norms Study offered an opportunity to examine these questions, because it drew data from hundreds of facilities distributed throughout the U.S.

## The Method, Case/Site Variables, and Sample

The national database was constructed from archival intake records from various juvenile justice facilities. Given the widespread use of the MAYSI-2, we were able to obtain cumulative databases that had developed in the course of routine use of the MAYSI-2 in juvenile justice programs and facilities nationwide.

Using the MAYSI-2 registration database, we mailed a request for participation to each statewide and individual facility user contained in the Registry. A telephone interview was conducted with each respondent to this request, to obtain information about the composition of their MAYSI-2 data sets, characteristics of their facility (or facilities), and their test administration procedures. Each independent facility was defined as a “site” in this study. The interview was used to determine eligibility and to gather site and case (individual youths) description variables.

### Criteria for Eligible Data Sets

Sites had to meet a number of criteria to be considered eligible data donors:

- The MAYSI-2 had to have been administered on a consecutive case basis (rather than according to some referral process).
- The data set had to be stored either electronically or as paper answer forms stored in a manner that made them retrievable and transmittable.
- Each site’s controlling authority (e.g., state agency) had to grant approval to release the data set for research purposes (under conditions of confidentiality and anonymity of the cases).
- Each site had to provide us information concerning how the data were collected (described below).
- Each site had to have case-based recording of MAYSI-2 scale scores or item responses (from which we can calculate scale scores) for the six clinical scales (the one non-clinical scale, the *Traumatic Experiences* scale, was not examined), along with the minimum case-linked demographic information (i.e., race, age at administration, and gender).

### Site Description Variables

We identified each site according to a number of variables that had potential for explaining differences in MAYSI-2 scores across sites. Respondents provided the following information:

- *Gate*. The MAYSI-2 is used at admission in three types of settings in the juvenile justice system – what we call “gates” that define points of entry at different levels of the system. First, in some states it is used at intake probation, when youth are referred to the juvenile court for pretrial intake by probation offic-

- ers. Second, it is used in pretrial detention centers where preadjudicated youths in need of secure custody are brought soon after their arrests. Third, it is used for adjudicated youths committed to the state's youth corrections agency, a secure residential facility or assessment center for youths entering juvenile corrections.
- *Credentials of persons administering the instrument.* This refers to the types of persons who administered the MAYSI-2 to youths upon admission (e.g., line staff, technical assistants, master's degree counselors, etc.).
  - *Time of administration,* defined as the number of hours or days between a youth's admission to the facility and administration of the MAYSI-2.
  - *Mode of administration,* identifying whether the instrument was typically administered in paper-and-pencil form, was read to youths by a staff member, or was administered by computer.
  - *Group/individual administration,* indicating whether youths typically took the MAYSI-2 individually or in a group testing setting.
  - *Population density.* This variable categorized sites as urban or rural based on the geographic location. This was coded using census data. Sites were "urban" if they were located in an area defined by the U.S. census definition as having one city with 50,000 or more inhabitants and a population density generally exceeding 1,000 people per square mile, or an urbanized area with at least 50,000 inhabitants and a total Metropolitan Statistical Area population of at least 100,000 (75,000 in New England). Sites were "rural" if they did not meet the preceding criteria or were in areas with less than 50,000 inhabitants.

### Case Description Variables

Each data set included the following variables for each case (youth):

- *Unique identifier.* Youths typically are administered the MAYSI-2 at each admission. Therefore, databases might include many MAYSI-2's for the same youth given the prevalence of repeat offenders. Since the national norm database intended to include only MAYSI-2 scores from the first administration, identification of duplicate cases was crucial.
- *MAYSI-2 scales.* Data could be in item response form (allowing us to enter and calculate scores on each scale) or scale score form (without availability of item responses).
- *Age at administration.* A year age at administration.
- *Gender.* Male or female identification was essential. Data sets did not need to include both genders.
- *Ethnicity/race.* Each case had to be identified by race or ethnicity that was classifiable into one of the four major categories; Black, Hispanic, non-Hispanic White, and Asian.
- *Legal status.* When it could be identified, cases were identified as being pre- or postadjudication.

### Sample

Data sets were obtained from 19 states, resulting in a combined 155,835 possible cases for inclusion in the study. Many of these cases were excluded from the final sample. First, 28,028 cases were excluded because the cases were repeated admissions from the same youths (only the first admission was retained for each youth). Second, 6,032 cases were excluded because the ages of the youths fell outside of the 12 to 17 age range for valid MAYSI-2 scores. Finally, 51,352 cases came from gates that were inappropriate (e.g., residential after-care facility) or unidentifiable. The final data set totaled 70,423 cases from 283 different facilities. These included 141 intake probation offices from 7 states, 91 pretrial detention sites from 16 states, and 51 corrections sites from 12 states.

**The Sites.** Tables 17 and 18 (pp. 98-99) describe the geographic demographics of the sample, including the proportion of cases from each state, U.S. region, urban versus rural location, and gate of the juvenile justice system. As the tables illustrate, the majority of cases came from the Midwest Region (44%) (mainly due to the

significant number of cases donated by Texas), and from facilities located in urban areas (78%). Cases were fairly evenly distributed across gates with 36% of the sample coming from probation, 42% from pretrial detention, and 22% from postadjudication correctional settings.

Test administration procedures for the sample as a whole were as follows (percentages reflect percentage of cases from the total sample):

• Individual administration	86.9%
• Group administration	13.1%
• Within first 6 hours after admission	46.1%
• Between 6 and 24 hours after admission	22.6%
• Between 24 and 72 hours after admission	19.5%
• Later than 72 hours after admission	11.8%
• Voice MAYSI (computer)	28.2%
• Pencil-and-paper self	64.3% (staff routinely read, 15.8%)
• Pencil-and-paper staff read, youth answers aloud	7.5%
• Front-line staff examiner	67.6%
• Specialized technician examiner	4.3%
• Professional staff examiner	25.4%
• Mixed types of examiners	2.8%

Sites' descriptions of how the MAYSI-2 was typically administered varied across and, in some cases, within sites, both within and between gates. The following describes those differences by providing the proportions of cases within each gate that received each administration procedure.

For *intake probation sites*, all youths were administered the MAYSI-2 individually by front-line staff. The most common method of administration was pencil and paper involving self-administration (80% of youths), with staff reading the items to youths only when the youths had reading difficulties. In 13% of cases, youths were read the items by staff (with 8% of youths answering aloud while staff recorded the answers). A final 7% received the Voice MAYSI. Most youths received the MAYSI-2 within the first 6 hours of intake (80%), while the remainder took the MAYSI-2 later but within 24 hours (14%). Only 6% of youths took the MAYSI-2 later than 24 hours following intake.

In pretrial detention sites, most MAYSI-2's were administered individually (99%) by front-line staff (66%). The most common method of administration was the Voice MAYSI (57%), followed by pencil-and-paper self-administration and reading items to youths when necessary (42%). Only 1% of youths were administered the MAYSI-2 by staff reading the questions and recording the youths' answers. The most common administration times were within the first 6 hours (38%) and between 24 and 72 hours (36%) of intake. The remaining 25% took the MAYSI-2 between 6 and 24 hours following intake, and a few took it later than 3 days following intake.

In *correctional settings*, most MAYSI-2's were administered in groups (59%), with less than half of the youths (41%) taking the MAYSI-2 individually. The test generally was administered by professional staff (in 69% of cases), the remainder being administered by front-line staff. As expected from the high rate of group administration, the most common method was pencil and paper, with self-administration in 10% of cases and staff reading the questions to youths in 64% of cases. Staff routinely read the questions and circled the answers in 18% of cases. Only 6% of the cases received the Voice MAYSI. In these corrections sites, only 5% of youths received the MAYSI-2 within the first 6 hours of intake, 33% took the MAYSI-2 within 24 hours, 15% took the MAYSI-2 between 24 and 72 hours, and 47% took the MAYSI-2 sometime later than 3 days following intake.

**The Cases.** Table 19 (pp. 100-101) shows the numbers and percentages of boys and girls in the sample, of each of the major race/ethnic groups (i.e., non-Hispanic Whites, African-American/Blacks, Hispanics, and Asian), age, legal status, and urban versus rural location, as well as groups formed by combinations of these variables.

Girls made up almost one-quarter of the database (22%) and younger youths (12-14 years) made up over one-quarter (29%).

With respect to race/ethnicity, 39% were non-Hispanic White, closely followed by Blacks comprising one-third of the database (33%), then Hispanics making up about one-quarter of the database (24%). Approximately 1% of the cases self-identified as Asian, and 3% of the sample could not be classified according to any of these groups. This “other” category is further broken down according to Alaskan Native, Native American, and an Unclassified group in Table 20 (p. 102). Although each of these groups made up less than 1% of the total norm database, the number of cases within each group was sizable relative to the normative samples of other psychological instruments.

The majority of cases came from urban sites regardless of race or gender, with the exception of Native Americans who were more commonly located in rural areas. Legal status also was fairly consistent across gender and race groups, with the majority of cases having preadjudication status. The only exceptions were the Asian and Native American groups, which predominately had postadjudication status.

Table 21 (p. 103) provides the case demographic information (e.g., gender, age, race/ethnicity) for each gate. Each gate had adequate numbers of cases across gender, age, population density, and the primary race/ethnic groups. The Asian, Alaskan Native, Native American, and Unclassified groups were too small for some gates. As such, only Whites, Blacks, and Hispanics were included in the meta-analyses described later.

## Norms

Data analyses to develop national norms focused on the proportions of youths – having various demographic characteristics – that fell above both Caution and Warning cut-off scores on the six MAYSI-2 clinical scales. We chose methods of analysis that would be most applicable for the practice of juvenile facilities that use the MAYSI-2. Therefore, we compared groups in the proportions falling above scale cut-off scores, rather than using group mean differences. Note that when reading the accompanying tables, the proportion “over Caution” includes youths who were between the Caution and Warning cut-offs *as well* as the youths above the Warning cut-offs.

### Massachusetts Versus National Samples

Our first question was whether the MAYSI-2 cut-off scores targeted similar percentages of youths as having clinically significant scale elevations in both the original Massachusetts sample and the national sample. Following are the percentages of youths scoring above Caution and Warning cut-offs in the original MAYSI-2 norm sample (from Massachusetts) versus the national sample (with Massachusetts cases removed).

PERCENT ABOVE EACH CUT-OFF SCORE				
<u>MAYSI-2 Scale</u>	<u>Caution</u>		<u>Warning</u>	
	<u>MA</u>	<u>National</u>	<u>MA</u>	<u>National</u>
<i>Alcohol/Drug Use</i>	32.9	26.4	9.6	6.7
<i>Angry-Irritable</i>	42.4	35.3	11.8	9.3
<i>Depressed-Anxious</i>	36.7	33.3	9.7	7.9
<i>Somatic Complaints</i>	39.2	40.2	7.5	5.4
<i>Suicide Ideation</i>	19.9	18.1	12.9	12.5
<i>Thought Disturbance</i>	32.8	35.2	5.2	5.5

The only scales that seemed to have substantial differences in the proportion of youths scoring above Caution were the *Alcohol/Drug Use* and *Angry-Irritable* scales. For both scales, higher proportions of youths were elevated in Massachusetts than in the national sample. We decided not to adjust these Caution cut-offs for use in MAYSI-2 administration, however, because Caution cut-off scores originally were determined according to clinical elevations on parallel scales from well-validated clinical instruments (see Chapter 7 for descriptions of that procedure).

Warning cut-offs on the other hand, were established to identify youths within the top 10% of scorers on each scale. As such, the Massachusetts-based cut-offs reasonably could be adjusted to be representative of the upper 10% of youths nationally. The original Massachusetts-based cut-offs identified roughly 10% to 13% of scorers in both the Massachusetts and national norm samples, with the exception of the *Alcohol/Drug Use* and *Somatic Complaints* scales. Decreasing the Warning cut-off on the *Alcohol/Drug Use* scale by one point (from 7 to 6) resulted in more similar prevalence rates. The Warning cut-off for the *Somatic Complaints* scale could not be adjusted legitimately.

Based on these findings, we officially decreased the Warning cut-off on the *Alcohol/Drug Use* scale from 7 to 6. This increased to 12.7% the youths in the national sample who were over the (new) Warning cut-off on that scale.

### Group Comparisons: Youth Characteristics

The next set of analyses focused on various demographic group differences in the proportions of youths with clinically significant elevations on each MAYSI-2 scale using the sample as a whole. Later we describe the consistency of these findings across sites in the U.S. Here we focus only on analyses that treat samples (or demographic subsamples) as a whole. No tests of the significance of differences between groups were conducted because the large sample sizes would cause virtually any differences to be statistically significant.

As shown in Table 22 (p. 104), substantially greater percentages of girls than boys (more than 10 percentage point differences) scored above Caution and Warning cut-offs on every scale except *Alcohol/Drug Use* (above Caution: boys 28%, girls 21%). Table 23 (p. 105) describes differences by age. Here, too, the only substantial differences were seen on *Alcohol/Drug Use*, with a lower percentage of 12 to 14 year olds (15%) scoring at or above Caution than for youths aged 15 to 17 (31%). Table 24 (p. 106) shows the proportions elevated within each age group for each gender. For the most part, age group differences were similar for both boys and girls. The only appreciable “interaction effect” was on the *Alcohol/Drug Use* scale, where girls were less likely than boys to score above Caution among youths in the older age group, but were no less likely than boys to score above the Caution cut-off in the younger age group.

Table 25 (p. 107) reports the proportions of cases elevated on each scale by race/ethnic group. Non-Hispanic White youths had the highest proportion of cases meeting Caution and Warning elevations, relative to youths from other race/ethnic groups (not counting the Unclassified group), on the *Angry-Irritable*, *Somatic Complaints*, and *Suicide Ideation* scales. On the *Thought Disturbance* scale, Asians had the largest proportion of youths elevated, with a striking 42% meeting Caution. On the *Alcohol/Drug Use* scale, Alaska Natives and Native Americans scored the highest with a striking 46% or 50% of these samples reaching the Caution cut-off. The *Depressed-Anxious* scale did not have any appreciable high scoring group but the relatively low proportion of Native Americans meeting Caution is of note.

Focusing our attention only on the three main racial/ethnic groups (non-Hispanic Whites, Blacks, and Hispanics), it is of note that Whites tend to be the most likely to meet Caution cut-offs. The only exceptions are the *Depressed-Anxious* scale, where all groups scored similarly, and the *Thought Disturbance* scale, where Whites scored the lowest. There were no trends in the differences across scales between Hispanics and Blacks, except that Blacks were far less likely to be elevated on the *Alcohol/Drug Use* scale. Table 26 (p. 108) indicates that the trends of these race effects seem to hold for both girls and boys, such that Whites were the highest scorers and Blacks were the lowest scorers on the same scales. Further, higher proportions of girls were elevated than boys within each race/ethnic group on all but the *Alcohol/Drug Use* scale. Thus, there were no appreciable race by gender “interaction effects.”

We also examined scale differences by youths' legal status (pre- vs. postadjudication). Legal status group differences were present on three scales, with preadjudication (includes both nondetained and detained pretrial youths) youths being less likely to reach Caution cut-offs than postadjudication youths in each case. For preadjudicated and postadjudicated youths respectively, these included *Alcohol/Drug Use* (21% vs. 45%), *Depressed-Anxious* (32% vs. 38%), and *Thought Disturbance* (33% vs. 42%). These differences were found for both genders.

### Cross-Site Consistency of Demographic Differences

For the most part, the results from the demographic comparisons of proportions above Caution or Warning cut-offs in the national norm sample paralleled the original Massachusetts study. Does this necessarily mean that individual sites can safely presume that those comparisons can be applied validly when considering the mental health needs of youths in their own facilities?

There are several reasons why simple comparisons between demographic groups for the total national sample do not tell us whether the various gender, age, and ethnic differences found on MAYSI-2 scales are consistent across juvenile justice facilities. The proportions described above in "Norms" reflect an "averaging" of results across all cases (from all sites). It is reasonable to presume that if those proportions were calculated for each individual site, one might find considerable differences. This could happen because of differences between sites (even within particular gates, like pretrial detention centers) in legal and procedural variables that influence the types of youths they encounter, or that may reflect regional differences among youths within a particular gender, age, or ethnic/racial group. For example, jurisdictions may differ in their arrest patterns by gender, so that the girls in some detention facilities represent a wide variety of young offenders, while in others, girls might be detained only if they are especially psychologically disturbed or unmanageable. Thus, it is difficult to draw conclusions about the consistency and magnitude of these relationships for future application and interpretation of the instrument across the wide range of facilities and agencies nationally.

Another reason that simple comparisons between demographic groups may not be adequate is that mental health differences between subgroups according to one demographic characteristic, such as gender (girls vs. boys), may be dependent on other demographic factors, such as ethnicity and age. In other words, an overall finding that girls are more likely to be depressed than boys, on average, does not mean this difference is consistent across various subgroups of girls and boys. For example, among adjudicated, 12- to 14-year-old Hispanics, boys may be more likely to be depressed than girls.

We addressed this by engaging in additional analyses that considered each site (facility) as a separate sample or study and then examined the similarity in results across samples (sites). Our procedure for doing this was *meta-analysis*. This is a statistical method that is often used to summarize results across several empirical research studies of a phenomenon. The question asked is the average strength of a relationship or an effect across multiple studies. Another question that meta-analytic researchers are only beginning to ask is whether the findings across studies are strong enough to "reach a consensus" about the phenomenon, or whether their results are too varied or inconsistent with one another to reach a conclusion.

In the present case, we analyzed group differences (e.g., gender, race) in MAYSI-2 scale elevations within each site (much as though each site's data were a separate study of such differences), then used meta-analysis to average these differences and estimate the extent of their consistency or variability across all possible case characteristic combinations across sites. "All possible case characteristic combinations" refers to an interaction between age, gender, race, legal status, and test administration variables; meaning each youth is categorized based on their standing on all of these variables (e.g., a young boy of Hispanic ethnicity with pretrial status who took the MAYSI-2 24 hours after intake). The size of the relations we examined (e.g., gender differences on the *Suicide Ideation* scale) was represented by odds ratios calculated within each site for each combination of demographic groups. The meta-analysis summarizes these odds ratios across sites to estimate the strength and consistency of each effect independent of the "error" inherent in any single site.

The procedures began with a series of chi-square tests that produced odds ratios within each site. For each MAYSI-2 scale, Cochran-Mantel-Haenszel (CMH) statistics were calculated for each site across all possible interactions between gender, race/ethnicity (White, Black, and Hispanic only),\* age group, legal status (pre- vs. postadjudication), and the timing of MAYSI-2 administration (within 6 hours, 6 to 24 hours, 24 to 72 hours, and more than 72 hours following intake).\*\* Each odds ratio (or technically, “log odds ratio”) was considered to be a single case. Each site could contain from 1 to 48 odds ratios (cases) depending on the analysis and the number of youths available at that site. These cases were weighted for the meta-analyses according to their reliability. Some odds ratios will be less reliable than others. Odds ratios calculated within some sites will be based on small numbers of youths.

Cases were summarized to produce the average odds ratios across all sites for each effect of interest. This included gender, age (12 to 14 versus 15 to 17 year olds), legal status, and three separate ethnicity/race effects (White vs. Black, White vs. Hispanic, and Black vs. Hispanic). In other words, using gender effects as an example, we calculated the average odds of girls versus boys meeting the Caution cut-off of each MAYSI-2 scale across all sites and person combinations using general linear modeling. If odds ratios appeared to be consistent across all subtypes of girls and boys across all sites according to a test of homogeneity, then the average *OR* (odds ratio) was considered to represent a consistent effect. For example, if the gender effect had an average *OR* of 1.5 on the *Alcohol/Drug Use* scale and little heterogeneity, we would simply report that girls were 1.5 times as likely as boys to be elevated on this scale.

In instances where the distribution of *ORs* was heterogeneous, the average *OR* could not be trusted, making it necessary to locate the circumstances where the nature of the effect was inconsistent, or where the effect “interacted” with other variables. Beginning with *person-level variables*, GLM calculated the significance of interactions between the effect in question and gender, ethnicity/race (White, Black, or Hispanic), age group, legal status, and time of test administration. We calculated the amount of variability explained by each significant interaction until the variability between *ORs* was reasonably homogeneous, and then described the nature of the interaction. Using the gender effect on the *Alcohol/Drug Use* scale as an example, if the average *OR* of 1.5 was heterogeneous, we would look for significant interactions with other variables to explain the variability. In this example, suppose there was a significant interaction with age group such that girls were more likely to be elevated than boys among younger youths but not among older youths. If age adequately accounted for the amount of variability across *ORs*, we would conclude that the odds of girls versus boys scoring above Caution differed as a function of age. If we could not account for all of the heterogeneity through interactions with person-level variables, we repeated these same procedures with *site-level variables*, meaning the characteristics of facilities; specifically, gate (probation, pretrial detention, or corrections) and population density (urban vs. rural).

We estimated the size of each odds ratio by converting ratios into continuous effect sizes (Mean LOR/1.81; Chinn, 2000) that could be evaluated based on Cohen’s (1992) criteria. An effect size of .10 is small, .30 is medium, and .50 is large. In the following descriptions of the results, “ES” stands for effect size, and “OR” stands for odds ratio.

For the results presented in the following discussions, we do not provide tables or details of how the results were supported by specific statistical analyses, because they are sufficiently complex that they would require substantial instruction for most readers of this manual to comprehend them. They will be reported in professional journal publications within a year or two following publication of this manual. (Information on those publications, or advance information regarding statistical details of the results, may be obtained by contacting the National Youth Screening Assistance Project at the phone and email provided earlier in the manual.)

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\*It was necessary to remove youths of all other race/ethnic groups, leaving  $N = 67,221$ . Of these, additional cases were not included in the meta-analyses due to missing data on any of the relevant case variables and missing MAYSI-2 scale scores. The final sample size for the meta-analysis ranged from 64,329 (*Suicide Ideation*) to 51,883 (*Thought Disturbance*) depending on the MAYSI-2 scale.

\*\*Originally, we wanted to include other variables such as gate, type of MAYSI-2 administration, urban versus rural location, and so on. Unfortunately, these variables were not independent of site. Put simply, each site had a uniform method of administration and generally one type of gate. Since “site” was the unit of analysis, variables nested entirely within site could not be included.

## Gender Effects

Our findings indicate that the gender similarities and differences found in the Massachusetts and national samples are generalizable. Across U.S. sites, girls were more likely, on average, to score above Caution cut-offs than boys in all areas of psychological disturbance except *Alcohol/Drug Use*.

Certain scales had stable and significant effects – that is, gender did not interact with other variables in a manner that changed the nature of the relation between girls and boys (i.e., girls scoring higher), and the average *ORs* were homogenous, meaning that they were true for the great majority of sites. These included a medium gender effect ( $ES = 0.33$ ) on the *Angry-Irritable* and *Somatic Complaints* scales, such that girls were 1.8 times more likely than boys to score above the Caution cut-off. There was a large gender effect ( $ES = .50$ ) on the *Suicide Ideation* scale, such that girls were 2.4 times more likely than boys to be over the Caution cut-off.

On the *Depressed-Anxious* scale, there was a medium gender effect ( $ES = .40$ ), such that girls were consistently more likely to score above Caution than boys. However, the magnitude of that difference varied according to age, so that the likelihood of girls scoring above the cut-off was 1.95 times greater than for boys among 12 to 14 year olds, but 2.14 times greater than for boys in the 15- to 17-year-old group.

According to findings from the Massachusetts norm study (see Chapter 9), girls and boys did not differ substantially on the *Alcohol/Drug Use* scale. Indeed, there would not appear to be any gender effect on this scale if we were to consider the average *OR* (1.05). However, this finding is not consistent across youths. Specifically, the odds ratios in our meta-analytic analysis were quite heterogeneous due to a significant interaction with age ( $F[1, 476] = 91.09, p < .0001$ ). Among young adolescents, there was a small gender effect ( $ES = .25$ ) such that girls are 1.6 times more likely than boys to be elevated above the Caution cut-off; but girls and boys did not differ among older adolescents. This finding was consistent across sites.

## Age Effects

For the most part, the finding in our norms analyses that younger and older youths in the juvenile justice system did not differ in the likelihood of Caution elevations on MAYSI-2 scales was found to be consistent across sites. Where they did differ, the effects were small, with the exception of the *Alcohol/Drug Use* scale. There was a medium age effect ( $ES = .29$ ) on the *Alcohol/Drug Use* scale such that older youths were 1.7 times more likely to be elevated than younger youths. Although the *ORs* were reasonably consistent across sites, further analyses indicated that generalizability about *Alcohol/Drug Use* and age could be improved by considering it in interaction with other variables. The higher likelihood of older youths to have alcohol and drug problems is less applicable to girls and postadjudication youths, where there is little difference in drug use between age groups.

The absence of age effects on *Depressed-Anxious*, *Somatic Complaints*, and *Suicide Ideation* appeared to be consistent across sites. There was a small and consistent age effect on the *Thought Disturbance* scale ( $ES = .11$ ) such that younger youths were 1.2 times as likely as older youths to be elevated. There also appeared to be a small age effect ( $ES = .13$ ) on the *Angry-Irritable* scale with younger youths being 1.3 times as likely as older kids to be elevated; on average. However, this effect seems to vary according to the time youths took the MAYSI-2, such that the longer youths waited to take the test, the more likely that younger youths would report more angry symptoms than older youths ( $OR = 1.6$ ).

## Legal Status Effects

On each scale, there was no appreciable difference in the likelihood of scoring above Caution cut-offs between youths with pre- or postadjudication legal status. For most scales, the lack of a legal status effect was consistent across sites. The exceptions to this were the *Angry-Irritable* and *Alcohol/Drug Use* scales. For both scales, the small *ORs* were not consistent across sites, due to high heterogeneity that could not be explained adequately by other variables. This leaves open the possibility that these scales may manifest differences between pre- and postadjudicated youths in some sites and not in others.

## Racial/Ethnic Effects

Because dichotomous variables were necessary for testing the effects of interest in this study, race and ethnicity effects were analyzed across three comparisons: Whites versus Blacks, Whites versus Hispanics, and Blacks versus Hispanics.

**Whites Versus Blacks.** While some scales manifested differences between Whites and Blacks, typically these result – or at least the magnitude of the results – were not consistent across sites. Moreover, our meta-analysis was unable in most cases to determine the source of the variability.

*Alcohol/Drug Use* was the only scale where race differences achieved medium to large effect sizes. On average, Whites were significantly more likely than Blacks to report alcohol and drug use problems at an average *OR* of 2.3 (*ES* = .45). Although the direction of the difference seemed to hold across sites, there was moderate variability across the sites in the magnitudes of the *ORs*. Those magnitudes seemed to be related to age, legal status, and time of MAYSI-2 administration. Specifically, the degree to which Whites were more likely than Blacks to be over the cut-off on *Alcohol/Drug Use* increased somewhat among older youths (*OR* = 2.36, *ES* = .50), preadjudicated youths (*OR* = 2.46, *ES* = .50), and youths administered the MAYSI-2 within the first few hours following admission (*OR* = 2.46, *ES* = .50). However, none of these interactions improved the consistency of *ORs* across sites, so that they could not be said to be true across the full range of U.S. facilities.

These inconsistencies in the degree to which White youths were more often elevated on *Alcohol/Drug Use* than Black youths also were not made more consistent by examining site characteristics, such as gate or urban/rural location. It appeared, however, that there was greater variability in the magnitude of differences among sites within certain states. For example, there was high variability within California and Pennsylvania and moderate variability within Louisiana, Virginia, and Texas. But again, even accounting for state-level differences did not produce any conclusion that could be relied on to make a statement about consistency of the White-Black differences across the U.S. The only thing that remained consistent was that a greater proportion of White youths were elevated on the scale than Black youths; the magnitude varied across sites from small to medium to large.

There were small race effects (*ES* = .21) on the *Somatic Complaints* and *Suicide Ideation* scales such that Whites were 1.46 times more likely than Blacks to be elevated on both scales, on average. These results were consistent across sites. On average, there were no appreciable racial differences between Blacks and Whites on the *Angry-Irritable*, *Depressed-Anxious*, and *Thought Disturbance* scales. However, this lack of effect was only consistent across sites for *Thought Disturbance*.

Results on the *Depressed-Anxious* scale suggested little difference between White and Black youths, but this result was not consistent across sites. Inconsistencies were best explained by taking state into account. Specifically, differences in the reporting of depressed-anxious symptoms were highly variable across sites located in California, Michigan, South Carolina, and Washington, while the “no difference” generalization could be applied across the other states. For Michigan and Washington, this variability may be due, in part, to the relatively low proportion of Black youths in our sample from those states.

**Whites Versus Hispanics.** On the *Alcohol/Drug Use* scale, Whites were slightly more likely than Hispanics to report use, on average (average *OR* = 1.2, *ES* = .10), but the strength of this effect was not consistent across sites. For youths in probation intake facilities, Whites and Hispanics did not differ in their reporting of alcohol and drug use; however, in detention facilities, Whites were the most likely to score above Hispanics (*OR* = 1.6).

Some of the variability also seems to be due to the state. Higher proportions of Whites than Hispanics reported problems with alcohol and drugs across every region of the U.S. except in the West (51% Whites vs. 56% Hispanics). The variability seems to be accounted for by moderate to large variability among *ORs* across facilities within several states, including California, Colorado, Missouri, New Jersey, Pennsylvania, and Texas.

There was a small effect on the *Somatic Complaints* scale such that Whites were 1.26 times more likely than Hispanics to be elevated, and this difference was consistent across sites. Also consistent across sites was the lack

of White versus Hispanic differences on the *Angry-Irritable*, *Suicide Ideation*, and *Thought Disturbance* scales. There was also no White versus Hispanic effect on the *Depressed-Anxious* scale, but this was not consistent across cases and sites. Hispanics were slightly more likely than Whites to report depressed or anxious feelings among older youths and preadjudication youths.

**Hispanics Versus Blacks.** There was a medium-sized effect on the *Alcohol/Drug Use* scale, such that Hispanics were 1.7 ( $ES = .30$ ) times more likely than Blacks to report elevated levels of alcohol and drug use, and this difference was consistent across sites.

There were no appreciable differences between Hispanics and Blacks on any of the other scales, but these results were only consistent across sites and all youths for the *Somatic Complaints* scale. At the time this manual was prepared, further analyses were required to identify whether conclusions consistent across sites might be found by examining interactions with other person-level or site variables.

## Conclusion

The proportion of youths above the Caution and Warning cut-offs were not substantially different for the national sample and original Massachusetts sample. Only one difference was sufficiently great to warrant a change in the cut-off scores, and this resulted in a one-point change in the Warning cut-off for *Alcohol/Drug Use*. This change has been incorporated in the Scoring Summary in this manual and in the new MAYSIWARE software program.

Results of the meta-analytic analysis revealed that girls in justice system intake and facilities have a much higher likelihood of scoring over the Caution cut-off than boys on most MAYSI-2 scales, and that this is a sufficiently reliable finding across sites to allow juvenile justice personnel to apply it in their own programs. In contrast, applicable across sites in the U.S., there was a lack of differences on most scales between younger and older youths.

The *Alcohol/Drug Use* scale was the notable exception to the previous generalizations. Boys were more likely to be elevated than girls at older ages, but not at younger ages. (Similarly, consistency across sites was found for higher proportions of elevations for older youths but primarily when they were boys, while older and younger girls differed less.)

In contrast, the study produced only limited insight into differences between ethnic groups in symptom reporting on the MAYSI-2. Two of these results seemed clear and of special importance when working with juvenile justice youths. First, White youths were more likely to report problem levels of alcohol or drug use than were Black youths. But the magnitude of that difference varied from small to substantial across U.S. sites, and the variables in our study could not locate a way to identify or explain differences across sites. Second, White youths were more likely to report suicide ideation than Black youths, consistently across U.S. sites.

The majority of comparisons between ethnic groups, however, revealed nondifferences or small differences, and most of those could not be trusted as consistent across U.S. sites. In these cases, examining ethnicity in interaction with other variables usually did not allow us to reach conclusions about differences between demographic subgroups of White and Black, White and Hispanic, or Black and Hispanic youths that could be trusted as consistent across U.S. sites. It is likely that the inconsistency across sites is related to variables that were not available in our study. For example, jurisdictions might vary in their arrest patterns of troubled youths in ways that interact with ethnicity. Alternatively, communities might actually vary in the degree to which White, Black, and Hispanic youths experience symptoms such as those that the MAYSI-2 attempts to measure.

## SUMMARY OF META-ANALYTIC RESULTS

<u>MAYSI-2 Scale</u>	<u>Gender</u> (girl vs. boy)	<u>Age</u> (young vs. old)	<u>White vs. Black</u>	<u>White vs. Hispanic</u>	<u>Hispanic vs. Black</u>
<i>Alcohol/Drug Use</i>					
Effect size	None	<b>Medium</b>	Medium	Small	<b>Medium</b>
Mean OR	1.04	0.59	2.27	1.20	1.72
Interactions	Age		State	Gate State	
<i>Angry-Irritable</i>					
Effect size	<b>Medium</b>	Small	None	<b>None</b>	None
Mean OR	1.80	1.27	1.13	1.15	0.85
Interactions		Time of MAYSI-2	Legal Status		Legal Status
			Time of MAYSI-2		Time of MAYSI-2
<i>Depressed-Anxious</i>					
Effect size	Medium	<b>None</b>	None	None	None
Mean OR	2.08	1.13	0.98	0.86	1.02
Interactions	Age		State	Age	Unknown
<i>Somatic Complaints</i>					
Effect size	<b>Medium</b>	<b>None</b>	<b>Small</b>	<b>Small</b>	<b>None</b>
Mean OR	1.80	1.05	1.46	1.26	1.04
Interactions					
<i>Suicide Ideation</i>					
Effect size	<b>Large</b>	<b>None</b>	<b>Small</b>	<b>Small</b>	None
Mean OR	2.43	1.12	1.45	1.16	1.12
Interactions					Time of MAYSI-2
<i>Thought Disturbance</i>					
Effect size	Not applicable	<b>Small</b>	<b>None</b>	<b>None</b>	None
Mean OR		1.22	0.87	0.93	0.90
Interactions					Unknown

*Note.* Effects that were found to be relatively consistent across sites are indicated by **bold type** for their effect labels (none, small, medium, large).

## Tables Compiled From National Norms Study

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## Tables Compiled From National Norms Study

**TABLE 17: Geographic Characteristics – Youths by State and Region (*n*, % within region)**

REGION					
% TOTAL (70,423)	# of Sites	WEST 11,966 (17)	MIDWEST 30,719 (44)	SOUTH 12,223 (17)	NORTHEAST 15,515 (22)
<b>State</b>					
Alaska	4	737 (6)			
California	4	7,293 (61)			
Colorado	3	677 (6)			
Georgia	31			5,367 (44)	
Illinois	1		365 (1)		
Iowa	1		685 (2)		
Louisiana	3			2,416 (20)	
Massachusetts	11				1,565 (10)
Michigan	22		2,363 (8)		
Minnesota	2		1,020 (3)		
Missouri	19		1,499 (5)		
Montana	1	297 (3)			
New Jersey	3				247 (2)
Ohio	1		2,995 (10)		
Pennsylvania	26				13,703 (88)
South Carolina	3			2,730 (22)	
Texas	114		21,792 (71)		
Virginia	18			1,710 (14)	
Washington	16	2,962 (25)			

TABLE 18: Youth Characteristics – Population Density and Gate by State (n, column %)

	YOUTHS	POPULATION DENSITY			GATE		
		Urban 54,715 (78)	Rural 15,377 (22)	Total 70,423	Probation 25,171 (36)	Detention 29,886 (42)	Corrections 15,366 (22)
Alaska	737 (1)	636 (1)	101 (1)	-	567 (2)	170 (1)	
California	7,293 (10)	7,293 (13)	-	-	383 (1)	6,910 (45)	
Colorado	677 (1)	677 (1)	-	-	102 (<1)	575 (4)	
Georgia	5,367 (8)	3,415 (6)	1,952 (13)	-	4,756 (16)	611 (4)	
Illinois	365 (1)	365 (1)	-	-	365 (1)	-	
Iowa	685 (1)	-	685 (5)	-	685 (2)	-	
Louisiana	2,416 (3)	2,416 (4)	-	789 (3)	194 (1)	1,433 (9)	
Massachusetts	1,565 (2)	1,565 (3)	-	237 (1)	1,067 (4)	261 (2)	
Michigan	2,363 (3)	1,395 (3)	644 (4)	1,966 (8)	397 (1)	-	
Minnesota	1,020 (1)	1,020 (2)	-	220 (1)	800 (3)	-	
Missouri	1,499 (2)	1,192 (2)	307 (2)	283 (1)	998 (3)	218 (1)	
Montana	297 (1)	-	297 (2)	-	-	297 (2)	
New Jersey	247 (1)	247 (1)	-	247 (1)	-	-	
Ohio	2,995 (4)	2,995 (6)	-	-	2,995 (10)	-	
Pennsylvania	13,703 (20)	11,297 (21)	2,406 (16)	-	13,305 (45)	398 (3)	
South Carolina	2,730 (4)	2,730 (5)	-	-	1,266 (4)	1,464 (10)	
Texas	21,792 (31)	14,931 (27)	6,861 (45)	21,429 (85)	296 (1)	67 (<1)	
Virginia	1,710 (2)	1,616 (3)	89 (1)	-	1,710 (6)	-	
Washington	2,962 (4)	925 (2)	2,035 (13)	-	-	2,962 (19)	

Note. Population density was missing for 331 cases.

Urban = One city with 50,000 or more inhabitants and an urbanized area with at least 50,000 inhabitants and a total Metropolitan Statistical Area population of at least 100,000 (75,000 in New England).

Rural = One city that does not meet the proper criteria, or generally has less than 50,000 inhabitants.

TABLE 19: Youth Demographic Characteristics (n, % within row category)

	TOTAL	MALE	FEMALE	ASIAN	BLACK	HISPANIC	WHITE	OTHER
	70,423	54,607 (78)	15,767 (22)	876 (1)	23,210 (33)	16,744 (24)	27,267 (39)	1,777 (3)
<b>Gender</b>								
Male	54,606			767 (1)	18,580 (27)	13,042 (19)	20,459 (29)	1,357 (2)
Female	15,767			108 (1)	4,612 (7)	3,700 (5)	6,792 (10)	417 (1)
Missing	50			1	18	2	16	3
<b>Age</b>								
12	2,848	2,072	775	20	899	862	989	62
13	6,209	4,390	1,814	38	2,069	1,644	2,289	122
14	11,325	8,183	3,134	103	3,745	2,792	4,330	266
14 or Younger	20,382	14,645 (72)	5,723 (28)	161 (1)	6,713 (33)	5,298 (26)	7,608 (37)	450 (2)
15	16,782	12,525	4,244	180	5,513	3,949	6,549	444
16	20,735	16,457	4,262	242	6,591	4,862	8,405	474
17	12,524	10,980	1,538	293	4,393	2,635	4,705	409
15 or Older	50,041	39,962 (80)	10,044 (21)	715 (1)	16,497 (33)	11,446 (23)	19,659 (39)	1,327 (3)
<b>Race</b>								
Asian	876	767 (88)	108 (12)					
Black	23,210	18,580 (80)	4,612 (20)					
Hispanic	16,744	13,042 (78)	3,700 (22)					
White	27,267	20,459 (75)	6,792 (25)					
Other	1,777	1,357 (76)	417 (23)					
Missing	549	401	138					

**Population Density**

Urban	54,715	42,293 (77)	12,379 (23)	748 (1)	20,452 (37)	13,231 (24)	18,551 (34)	1,299 (2)
Rural	15,377	12,081 (79)	3,293 (21)	128 (1)	2,726 (18)	3,467 (23)	8,517 (55)	470 (3)
Missing	331	233	95	0	32	46	199	8

**Legal Status**

Arrested, Not Detained	25,415	17,676 (70)	7,711 (30)	158 (1)	4,159 (16)	10,235 (40)	10,523 (41)	210 (1)
Arrested Secure, Pretrial	28,294	22,084 (78)	6,191 (22)	162 (1)	13,697 (48)	2,108 (8)	11,142 (39)	981 (4)
Secure, Recent Commitment	16,269	14,566 (90)	1,702 (11)	551 (3)	5,240 (32)	4,373 (27)	5,372 (33)	542 (3)
Missing	445	281	163	5	114	28	230	44

*Note.* Frequencies across Missing Rows do not sum to equal Totals in the first column due to additional missing data for gender and ethnicity/race.

TABLE 20: Characteristics of Other Ethnic Group (*n*, % of ethnic group)

	<b>TOTAL OTHER</b>	<b>ALASKA NATIVE</b>	<b>NATIVE AMERICAN</b>	<b>UNCLASSIFIED</b>
	1,777	399 (22)	293 (17)	1,085 (61)
<b>Gender</b>				
Male	1,357	332 (83)	241 (82)	784 (72)
Female	417	65 (16)	52 (18)	300 (28)
Missing	3	2	-	1
<b>Age</b>				
12	62	14	6	42
13	122	20	23	79
14	266	68	47	151
<i>14 or Younger</i>	<i>450</i>	<i>102 (26)</i>	<i>76 (26)</i>	<i>272 (25)</i>
15	444	90	64	290
16	474	100	89	285
17	409	107	64	238
<i>15 or Older</i>	<i>1,327</i>	<i>297 (74)</i>	<i>217 (74)</i>	<i>813 (75)</i>
<b>Population Density</b>				
Urban	1,299	296 (74)	98 (33)	905 (83)
Rural	470	103 (26)	193 (66)	174 (16)
Missing	8	0	2	6
<b>Legal Status</b>				
Arrested, Not Detained	210	0 (0)	67 (23)	143 (13)
Arrested Secure, Pretrial	981	349 (88)	8 (3)	624 (58)
Secure, Recent Commitment	542	50 (13)	217 (74)	275 (25)
Missing	44	0	1	43

TABLE 21: Youth Demographic Characteristics by Gate (*n*, % within gate)

	PROBATION	DETENTION	CORRECTIONS
<i>% of Total (n = 70,423)</i>	<i>25,171 (36)</i>	<i>29,886 (42)</i>	<i>15,366 (22)</i>
<b>Gender</b>			
Male	17,425 (69)	23,369 (78)	13,813 (90)
Female	7,718 (31)	6,496 (22)	1,553 (10)
Missing	28	21	0
<b>Race/Ethnicity</b>			
Asian	153 (1)	191 (1)	532 (4)
Black	4,129 (16)	14,150 (47)	4,931 (32)
Hispanic	10,218 (41)	2,313 (8)	4,213 (28)
White	10,332 (41)	11,921 (40)	5,014 (33)
Other Unclassified	136 (1)	706 (2)	243 (2)
Alaska Native	0	349 (1)	50 (> 1)
Native American	66 (1)	10 (> 1)	217 (1)
Missing	137	246	166
<b>Age</b>			
12	1,883	838	127
13	3,364	2,357	488
14	5,221	4,636	1,468
<i>14 or Younger</i>	<i>10,468 (42)</i>	<i>7,831 (26)</i>	<i>2,083 (14)</i>
15	6,632	6,968	3,182
16	7,356	8,693	4,686
17	715	6,394	5,415
<i>15 or Older</i>	<i>14,703 (58)</i>	<i>22,055 (74)</i>	<i>13,283 (86)</i>
<b>Population Density</b>			
Urban	17,267 (69)	24,869 (83)	12,579 (82)
Rural	7,580 (30)	5,012 (17)	2,785 (18)
Missing	324	5	2
<b>Legal Status</b>			
Arrested, Not Detained	25,153 (99)	262 (1)	0
Arrested, Secure, Pretrial	0	28,258 (95)	36 (> 1)
Secure, Recent Commitment	0	939 (3)	15,330 (99)
Missing	18	427	0

TABLE 22: Gender Comparisons – At or Above the Caution and Warning Cut-Off Scores

	CAUTION CUT-OFFS		WARNING CUT-OFFS	
	Cut-Off Score	Percent At or Above	Cut-Off Score	Percent At or Above
<b>Alcohol/Drug Use</b>				
Boys	4	28	6	14
Girls	4	21	6	10
<b>Angry-Irritable</b>				
Boys	5	33	8	8
Girls	5	45	8	13
<b>Depressed-Anxious</b>				
Boys	3	30	6	7
Girls	3	43	6	13
<b>Somatic Complaints</b>				
Boys	3	37	6	4
Girls	3	50	6	9
<b>Suicide Ideation</b>				
Boys	2	15	3	10
Girls	2	29	3	21
<b>Thought Disturbance</b>				
Boys	1	35	2	6

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**Percent of Youths Who Score At or Above Cut-Offs**


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		Using Caution Cut-Offs	Using Warning Cut-Offs
<b>At least one of the MAYSI-2 scales</b>	Boys	68	28
	Girls	75	36
<b>At least two of the MAYSI-2 scales</b>	Boys	46	11
	Girls	54	18

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**TABLE 23: Age Comparisons – At or Above the Caution and Warning Cut-Off Scores**

	CAUTION CUT-OFFS		WARNING CUT-OFFS	
	Cut-Off Score	Percent At or Above	Cut-Off Score	Percent At or Above
<b>Alcohol/Drug Use</b>				
12-14	4	15	6	6
15-17	4	31	6	15
<b>Angry-Irritable</b>				
12-14	5	39	8	10
15-17	5	34	8	9
<b>Depressed-Anxious</b>				
12-14	3	33	6	8
15-17	3	33	6	8
<b>Somatic Complaints</b>				
12-14	3	41	6	5
15-17	3	40	6	6
<b>Suicide Ideation</b>				
12-14	2	19	3	14
15-17	2	18	3	12
<b>Thought Disturbance (Boys)</b>				
12-14	1	35	2	5
15-17	1	35	2	6

**Percent of Youths Who Score At or Above Cut-Offs**

		Using Caution Cut-Offs	Using Warning Cut-Offs
<b>At least one of the MAYSI-2 scales</b>	12-14	68	27
	15-17	70	31
<b>At least two of the MAYSI-2 scales</b>	12-14	47	12
	15-17	49	13

TABLE 24: Percent Meeting Caution and Warning Cut-Off Scores by Gender and Age Group

	CAUTION CUT-OFF			
	BOYS ( <i>n</i> = 54,607)		GIRLS ( <i>n</i> = 15,767)	
	12-14 ( <i>n</i> = 14,645)	15-17 ( <i>n</i> = 39,962)	12-14 ( <i>n</i> = 5,723)	15-17 ( <i>n</i> = 10,044)
Alcohol/Drug Use	15	33	16	24
Angry-Irritable	35	32	48	43
Depressed-Anxious	29	31	44	43
Somatic Complaints	37	37	49	51
Suicide Ideation	15	15	30	28
Thought Disturbance (Boys)	35	35		

	WARNING CUT-OFF			
	BOYS ( <i>n</i> = 54,607)		GIRLS ( <i>n</i> = 15,767)	
	12-14 ( <i>n</i> = 14,645)	15-17 ( <i>n</i> = 39,962)	12-14 ( <i>n</i> = 5,723)	15-17 ( <i>n</i> = 10,044)
Alcohol/Drug Use	6	16	7	12
Angry-Irritable	8	8	14	12
Depressed-Anxious	6	7	13	13
Somatic Complaints	4	5	7	10
Suicide Ideation	10	10	21	23
Thought Disturbance (Boys)	5	6		

*Note.* Actual *n* sizes vary across cells as a result of missing scale scores for some cases.

**TABLE 25: Caution and Warning Cut-Off Scores for Race/Ethnicity**

CAUTION CUT-OFFS	Cut-Off Score	Percent of Youths Who Were Above Cut-Off							Unclassified 1,085
		Asian	White	Black	Hispanic	Alaska Native	Native American	293	
<b>TOTAL</b>		<b>876</b>	<b>27,267</b>	<b>23,210</b>	<b>16,744</b>	<b>399</b>			
Alcohol/Drug Use	4	28	32	19	27	46	50	34	
Angry-Irritable	5	24	38	35	31	26	24	41	
Depressed-Anxious	3	35	32	34	34	32	33	37	
Somatic Complaints	3	36	46	35	38	30	36	43	
Suicide Ideation	2	16	22	15	17	20	14	21	
Thought Disturbance (Boys)	1	42	33	37	36	32	25	36	

  

WARNING CUT-OFFS	Cut-Off Score	Percent of Youths Who Were Above Cut-Off							Unclassified 1,085
		Asian	White	Black	Hispanic	Alaska Native	Native American	293	
<b>TOTAL</b>		<b>876</b>	<b>27,267</b>	<b>23,210</b>	<b>16,744</b>	<b>399</b>			
Alcohol/Drug Use	6	15	16	8	13	19	29	17	
Angry-Irritable	8	7	11	9	8	5	6	12	
Depressed-Anxious	6	7	8	8	8	6	5	10	
Somatic Complaints	6	4	7	4	5	3	4	6	
Suicide Ideation	3	8	16	10	11	13	11	14	
Thought Disturbance (Boys)	2	7	5	5	6	6	3	4	

*Note.* Actual *n* sizes vary across cells as a result of missing scale scores for some cases.

TABLE 26: Percent Meeting Caution and Warning Cut-Off Scores by Gender and Race/Ethnicity

	CAUTION CUT-OFF					
	BOYS ( <i>n</i> = 52,081)			GIRLS ( <i>n</i> = 15,104)		
	White ( <i>n</i> = 20,459)	Black ( <i>n</i> = 18,580)	Hispanic ( <i>n</i> = 13,042)	White ( <i>n</i> = 6,792)	Black ( <i>n</i> = 4,612)	Hispanic ( <i>n</i> = 3,700)
Alcohol/Drug Use	33	21	30	27	14	17
Angry-Irritable	35	33	29	48	46	41
Depressed-Anxious	29	31	31	43	45	42
Somatic Complaints	43	33	35	56	44	48
Suicide Ideation	18	12	14	32	24	28
Thought Disturbance (Boys)	33	37	36			

	WARNING CUT-OFF					
	BOYS ( <i>n</i> = 52,081)			GIRLS ( <i>n</i> = 15,104)		
	White ( <i>n</i> = 20,459)	Black ( <i>n</i> = 18,580)	Hispanic ( <i>n</i> = 13,042)	White ( <i>n</i> = 6,792)	Black ( <i>n</i> = 4,612)	Hispanic ( <i>n</i> = 3,700)
Alcohol/Drug Use	17	9	15	14	6	7
Angry-Irritable	10	8	7	14	13	11
Depressed-Anxious	6	7	7	13	13	11
Somatic Complaints	6	3	4	12	6	8
Suicide Ideation	13	8	9	25	18	21
Thought Disturbance (Boys)	5	5	6			

*Note.* Actual *n* sizes vary across cells as a result of missing scale scores for some cases.