# MAYSI~2 Statewide Screening - California

## Description of Alcohol / Drug Use & Mental Health Symptoms Among Youth as Identified by the Massachusetts Youth Screening Instrument~2


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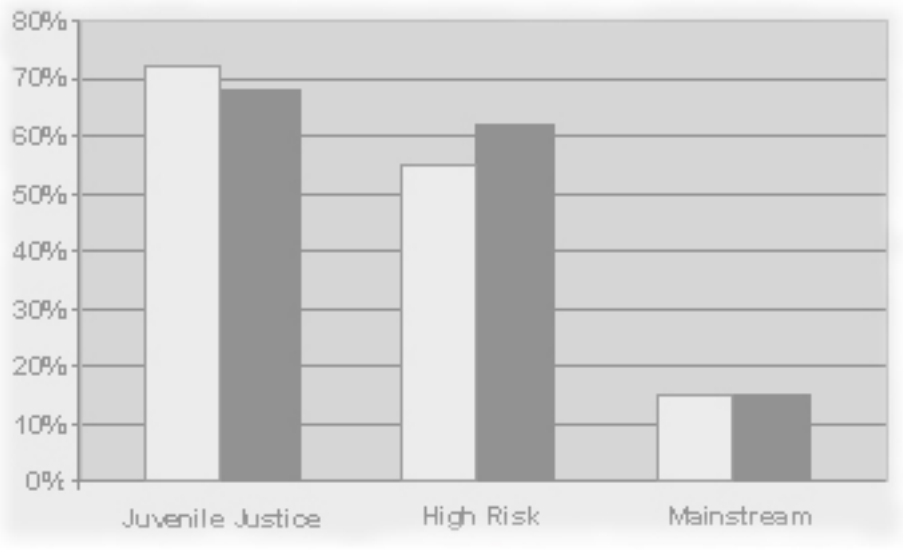

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## Executive Summary

Between January 16 and February 13, 2006, a total of 2,989 youth at 56 sites across nine California counties were screened using the Massachusetts Youth Screening Instrument – Version 2 (MAYSI~2). The MAYSI-2 is a brief screening instrument designed to assist juvenile justice facilities in identifying youths 12-17 years old who may have alcohol/drug problems or other mental health issues (e.g., depression, thought disturbance, etc.) in the past few months. The number of youths who participated in this screen within each location is listed below:

- Juvenile Justice Halls or Ranch Programs ("JJ" youth) – N = 1,151 youth (38.5%)
- High Risk Youth ("HR" youth - e.g., continuation schools, group homes, etc.) – N = 776 (26%)
- Mainstream High Schools in the community ("MS" youth) – N = 1,062 (35.5%)

Results of the statewide screening indicate that youths involved with the juvenile justice system – or at risk for involvement with it – reported high rates of alcohol/drug use as well as other mental health symptoms compared to youths in mainstream schools. The detained youth in this screening reported much higher rates of substance use and psychological disturbance than did comparable youth in previous research (see Cauffman, 2004 and Grisso et. al. 2001). Part of the reason for the higher scores may be that the youth in this sample took the screen anonymously whereas, in previous studies with the MAYSI~2, youth's responses were identifiable. Another possible reason for the elevated scores is that youth in this sample do in fact use substances more frequently than other sampled populations.

Within the three major setting types, alcohol/drug use was found to vary by ethnicity. In the juvenile justice and high risk settings, Asian/Pacific Islanders report higher levels of alcohol and drug use than do African Americans (58% and 63% higher means). However, in the mainstream setting, Asian/ Pacific Islanders report the least amount of substance use—significantly less than Hispanics and Whites.

In addition, girls displayed more mental health problems than boys. However, there were no gender differences with regard to alcohol and drug use. Specifically, the breakdown is:

**Percent of Youth in the Caution Range for All Scales by Setting**

| | Juvenile J. | | High Risk | | Mainstream | |
|---|---|---|---|---|---|---|
| **Subscale** | M | F | M | F | M | F |
| Alcohol/Drug Use | 68% | 72% | 62% | 55% | 15% | 15% |
| Angry-Irritable | 64% | 69% | 58% | 66% | 28% | 52% |
| Depression-Anxiety | 56% | 69% | 46% | 69% | 28% | 58% |
| Somatic Complaints | 59% | 74% | 56% | 74% | 40% | 67% |
| Suicidal Ideation | 28% | 43% | 21% | 46% | 15% | 35% |
| Thought Disturbance | 62% | 67% | 59% | 62% | 42% | 59% |
| Thought Disturbance - no 26 | 44% | 48% | 42% | 48% | 30% | 40% |
| Traumatic Experiences (Boys) | 43% | | 35% | | 13% | |
| Traumatic Experiences (Girls) | | 62% | | 50% | | 23% |

While there were no significant gender differences with regard to which Alcohol/Drug Use questions youth in juvenile justice and mainstream settings endorsed, there were differences between males' and females' answers in high risk settings. Among the youth in high risk settings, boys were more likely than girls to report getting into trouble and fighting while using substances. Boys also reported more polysubstance use and were more likely than girls to say that they had been drunk or high at school. Girls in these high risk settings were more likely than boys to report that they had used substances to help them feel better. This pattern is consistent with the hypothesis that girls' substance use accompanies internalizing tendencies while boys' use accompanies externalizing behaviors.

Results also indicate that there was a high degree of overlap between the MAYSI~2 scales, which is consistent with the notion that there is a great deal of co-morbidity between alcohol/drug problems and other mental health issues. For example, youths who score high on the alcohol/drug use scale are also likely to score high on the angry/irritable scale, depressed-anxious scale, and suicidal ideation scale. A youth in this screening that scored in the caution-range on *any* MAYSI~2 subscale was 3.7 times more likely to have another caution-range score than to have just the one.

Interestingly, over 70% of the youths in the juvenile justice system admitted to using alcohol and drugs at the same time, over 65% admitted to being drunk or high at school, and nearly 55% admitted to being so drunk or high that they couldn't remember what happened. These rates were significantly higher than those observed among the mainstream youth (approximately 15%, 15%, and 20%).

Overall, the results suggest that, among juvenile justice and high risk youth, there is a great need for substance use and mental health interventions. Also, a significant percent of mainstream youth would likely benefit from further assessment and treatment.

# MAYSI~2 Statewide Screening - California

## Introduction

*Overview of MAYSI~2 Statewide Screening - California*

Nationwide, adolescents' use of alcohol and illicit drugs is widespread. Over half of 12th graders have used an illegal substance in their lifetime and 58% report having been drunk. Even among 8th graders, about 1 in 5 have used drugs or been drunk. But with adolescence known to be a time of experimentation, it is important to distinguish between youth that have tried these substances occasionally and those that use drugs and alcohol on a regular basis and in a way that causes harm, impairment or danger to the child and others. In a nationally representative sample of youth, only 3.1% of 12th graders and 0.5% of eighth graders reported daily (e.g. at least 20 out of the past 30 days) use of alcohol. But about 10% of eighth graders and just under 30% of 12th graders reported binge drinking (e.g. five or more alcoholic drinks in a row) in a two-week time-frame. 5% of 12th graders and 1% of eighth graders reported daily marijuana use. (Johnston et. al., 2006)

Numerous studies have found rates of alcohol and drug use as well as emotional and behavioral disorders among youth in the juvenile justice system to be far higher than in the general population. For example, using a clinical assessment interview, Teplin et. al. (2002) found that *half* of incarcerated youth (in the Chicago, IL area) had a diagnosable substance abuse disorder—males' and females' rates did not differ statistically. In comparison, the National Survey on Drug Use and Health estimates the rate of substance abuse or dependence among 12-17 year olds nationwide to be 8.85%. (In Illinois, where Teplin et. al.'s (2002) study was conducted, the rate of substance abuse or dependence is estimated at 8.61% for 12-17 year olds. In California, the estimated rate is 9.22%.) Similarly, Kazdin (2000) estimates the prevalence of mental disorders among juvenile offenders to be 50%, substantially higher than the approximate prevalence rate of 20% among community adolescents. Prevalence rate estimates for substance and mental health disorders tend to vary between studies due to heterogeneity in sampling techniques, differences in geographic locales, and inconsistencies in the assessment techniques used. But, on the whole, studies concur that the rates of substance abuse and mental illness among youths in the juvenile justice system are exceptionally high (Otto et. al, 1992; Cauffman, 2004).

In spite of the demonstrated need for services in this population, provision of services has been insufficient and inequitable with White youth receiving a disproportionate share of available resources, even controlling for need. One of the barriers to providing appropriate services has been the lack of a reliable, relatively unbiased method for identifying substance use and mental health disorders among youth in the juvenile justice system (Cauffman, 2004). The Massachusetts Youth Screening Instrument – Version 2 (MAYSI~2) was designed to meet this need; its purpose is to assist juvenile justice facilities in identifying youths 12-17 years old who may have substance abuse problems and mental health needs (Grisso, et. al, 2001). It is intended for use at any entry or transitional placement points in the juvenile justice system (e.g., intake probation, pretrial detention, state youth authority reception centers). The MAYSI~2 does not provide diagnoses and its content was not selected to correspond to specific DSM-IV diagnostic criteria. Rather, the MAYSI~2 is intended to work primarily as an "alerting function" to identify youths possibly in need of substance abuse or mental health services who might otherwise go unnoticed and untreated. This method of identifying "red flags" that signify possible substance use or mental health problems may aid institutions to effectively allocate treatment resources, allowing

treatment based on level of individual need rather than on the extent to which an adolescent's behavior calls attention to itself. The MAYSI~2 can also serve as a tool for policy-makers, providing information to help guide decision-making regarding funding for assessment and treatment of youth with substance use problems and mental health needs.

In the California Statewide Screening, the MAYSI~2 was used to screen youths in juvenile justice facilities and in the community. Between January 16 and February 13, 2006, a total of 2,989[*] youth were screened at 56 sites across nine California counties. Identifying information was not collected with the screens and youth were informed that their responses would be anonymous as well as confidential. The number of youths who participated in this screen within each location are listed below:

- Juvenile Justice Halls or Ranch Programs ("JJ" youth) – N = 1,151 youth (38.5%)
- High Risk Youth ("HR" youth - e.g., continuation schools, group homes, etc.) – N = 776 (26%)
- Mainstream High Schools in the community ("MS" youth) – N = 1,062 (35.5%)

*Study Methods: Administration of the MAYSI~2 in California Counties*

The MAYSI~2 was administered to youth in the following California Counties (with the figure in parentheses indicating the number of youth screened):

- Fresno (406)
- Los Angeles (267)
- Marin (163)
- Mariposa (141)
- Riverside (245)
- Santa Barbara (267)
- Santa Clara (1170)
- Sonoma (119)
- Tulare (211)

Representatives from each participating county attended an 8-hour training where they received background information about the MAYSI~2, instructions for how to install the software, and guidance in introducing youth to the screening instrument and aiding youth in self-administering the screen. The attendees were trained such that they could train others in their respective counties to use the MAYSI~2.

Each county recruited sites to participate in the study and designated site-coordinators to oversee the process of screening youth and/or training others to screen youth with the MAYSI~2. At the end of the data collection period, the county representatives sent the data files to the researchers at the University of California, Irvine to be analyzed. No identifying information was attached to the responses.

The MAYSI~2 is administered via a computerized program that reads the question aloud to the youths and allows the youths to respond to the question by selecting "yes" or "no" via either the keyboard or the click of the mouse. The youth can click on the question to hear it again and can go backwards to change a response if needed. The MAYSI~2 automatically scores each participant's results and stores the record in a file on the computer hard drive.

Prior to beginning the MAYSI~2, brief instructions are given and a demographic questionnaire is administered to identify the youth's age, race, and gender. In addition, a practice question is asked to make sure that the youth understands how to respond on the computer (e.g., "Have you ever used a

[*] Originally, there were 2996 respondents, but 7 youth (3 incarcerated and 4 mainstream) were eliminated from data analysis because their responses were not credible (all '1's or a discernable pattern of responses).

computer before?" – 97% reported having used a computer before). This section of the MAYSI~2 was filled out under staff supervision. Given the specific requirements of this administration, the field for youths' identification number was filled in with a meaningless code in order to preserve youths' anonymity. The field usually designated for juvenile admission number was used to record grade (in school) for community youth or the number of days incarcerated for JJ youth.

*Sample Demographics*

Of those cases screened with the MAYSI~2 during the study timeframe, approximately 72% are male. The majority of cases are split between Hispanic (53.4 %), White (24.8 %), African American (8.5 %) and Asian (5.5 %). The average age (mean and median) of the sample was 16 years old. The number of youth who were screened in each county (by setting type) are identified in Table 1.

**TABLE 1**
**Number of Youth Screened in Each County by Setting Type**

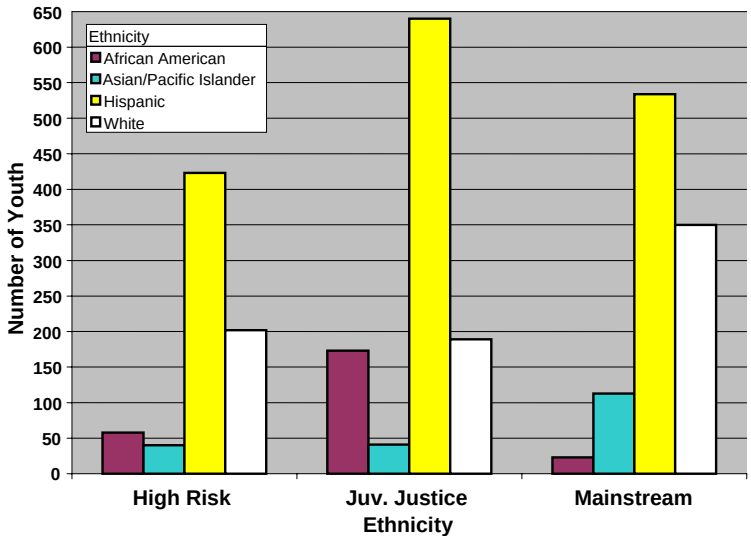
| | | Setting | | | |
|---|---|---|---|---|---|
| | | Juvenile Justice | High Risk | Mainstream | Total |
| County | Fresno | 382 | 24 | 0 | 406 |
| | Los Angeles | 125 | 142 | 0 | 267 |
| | Marin | 37 | 126 | 0 | 163 |
| | Mariposa | 0 | 40 | 101 | 141 |
| | Riverside | 210 | 35 | 0 | 245 |
| | Santa Barbara | 188 | 79 | 0 | 267 |
| | Santa Clara | 0 | 209 | 961 | 1170 |
| | Sonoma | 119 | 0 | 0 | 119 |
| | Tulare | 90 | 121 | 0 | 211 |
| | Total | 1151 | 776 | 1062 | 2989 |

**TABLE 2.**
**Ethnic Composition of the Sample**
**Ethnicity of Youth by Risk Category**

| | Juvenile Justice | High Risk | Main-stream |
|---|---|---|---|
| Asian/Pacific Islander | 41 (1%) | 40 (1%) | 113 (4%) |
| African American | 173 (6%) | 58 (2%) | 23 (1%) |
| White | 189 (6%) | 202 (7%) | 350 (12%) |
| Hispanic | 640 (21%) | 423 (14%) | 534 (18%) |

Numbers in black are counts of youth. Numbers in orange indicate the percentage of the total sample that the youth in each cell represent.
[a] 93% of youth self-identified as one of the above four ethnicity categories.

**FIGURE 1.**
**Number of Youth of Different Ethnicities Screened in Each Setting**



The proportions of youth screened in different "risk" categories are not representative. As shown in Table 1, some counties screened only incarcerated youth while others only youth in the community. One ramification of this is that the ethnicity data is not representative of the general population of youth in each county. For example, Los Angeles County, which has larger percentages of African American youth than many other counties, screened only "high risk" and incarcerated youth. Only Santa Clara and Mariposa Counties screened mainstream youth. As noted in Table 2 and Figure 1, African Americans are underrepresented in the total "mainstream" sample as are White youth while Asian and Hispanic youth are over-sampled with respect to statewide data on the youth population of California (Puzzanchera et. al., 2006). Table 2 and Figure 1 also show that the current study has a disproportionately large sample of Hispanic youth in JJ settings while African Americans and Whites are underrepresented compared to statewide data (from 2003) on youth in custody in California.

With regard to gender, composition of our sample in Juvenile Halls is representative of the gender composition statewide (17.6% female statewide, 16.9% female in our sample). Our sample, however, includes a disproportionately small sample of girls in Juvenile Ranches/Camps; statewide, 10% of the youth in Juvenile Camps are female, but in our sample, only 3% are female (Chi Square = 14.75, $p < .001$). Our mainstream sample has an overrepresentation of boys. There is no data available by which to evaluate the representativeness of our "high risk" sample.

The ages of youth screened ranged from 12 to 23 years of age (mean, 16.00; standard deviation, 1.26). Age varied significantly by setting—youth screened in mainstream schools were younger on average than youth in juvenile justice and high risk settings [Welch (2, 1861) = 24.207, $p < .001$]. Age was not significantly different between the different ethnic groups.

Overall, males in the sample were older than females [$F$ (1, 2977) = 7.980, $p < .01$]. In high risk settings, however, females were older than males ($p < .05$). The reverse was true (boys were older than girls) for juvenile justice ($p < .05$) and mainstream ($p < .001$) settings. Table 3 and Figure 2 below describe the ages of boys and girls in each of the three main setting types (Juvenile Justice, High Risk, and Mainstream).

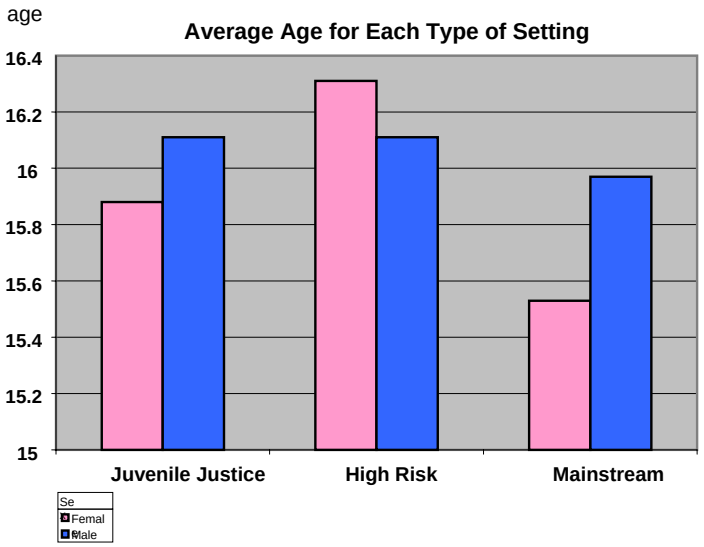
**TABLE 3**

**Age of Youth by Sex and Type of Setting**

| Setting | Sex | Mean | Std. Dev. | N |
|---|---|---|---|---|
| Juvenile Justice | Male | 16.11 | 1.25 | 990 |
| | Female | 15.88 | 1.19 | 160 |
| High Risk | Male | 16.11 | 1.27 | 511 |
| | Female | 16.31 | 1.24 | 264 |
| Main-stream | Male | 15.97 | 1.27 | 635 |
| | Female | 15.53 | 1.20 | 423 |
| Overall | Male | 16.07 | 1.26 | 2136 |
| | Female | 15.84 | 1.26 | 847 |
| | Total | 16.00 | 1.26 | 2983 |

Note: all male/female age differences are statistically significant.

**FIGURE 2**



*Description of the MAYSI~2*

- Consists of 52 items
- Time frame is current – "within the last few months"
- Yes/No response format
- Administered in 10-15 minutes via computer for automatic scoring
- Does not require clinical expertise to administer or score

The MAYSI-2 is a brief screening instrument designed to assist juvenile justice facilities in identifying youths 12-17 years old who may have alcohol/drug problems or other mental health issues (e.g., depression, thought disturbance, etc.). It is intended for use at any entry or transitional placement points in the juvenile justice system (e.g., intake probation, pretrial detention, state youth authority reception centers).

The MAYSI-2 is a self-report inventory of 52 questions that inquire about a youth's behaviors, feelings and experiences, mostly referring to "the past few months." It can be administered by computer or using paper and pencil. The computer self-administered version was used in the California Window Study. In the computer self-administered version, the questions are presented, one at a time, on the computer monitor. Simultaneously, the youth hears a vocal recording of the questions read out loud (through headphones) and can repeat the recording by clicking on the written question. A staff member is needed to introduce the program to the youth initially and to ensure that identification codes are entered properly. Administration requires about 8-10 minutes and is accomplished individually. Youths' answers contribute to 7 scales for boys and 6 scales for girls *(see below)*. Each scale has 5-9 items. Scores are calculated and summarized automatically by the MAYSI-2 software program.

**MAYSI~2 SCALES**

| | |
|---|---|
| ***Alcohol/Drug Use (8)*** | - Frequent use of alcohol/drugs |
| *Cut-off score* = 4 | - Risk of substance abuse or psychological reaction to lack of access to substances |
| ***Angry-Irritable (9)*** | - Experiences frustration, lasting anger, moodiness |
| *Cut-off score* = 5 | - Risk of angry reaction, fighting, aggressive behavior |
| ***Depressed-Anxious (9)*** | - Experiences depressed and anxious feelings |
| *Cut-off score* = 3 | - Risk of impairments in motivation, need for treatment |
| ***Somatic Complaints (6)*** | - Experiences bodily discomforts associated with distress |
| *Cut-off score* = 3 | - Risk of psychological distress not otherwise evident |
| ***Suicide Ideation (5)*** | - Thoughts and intentions to harm oneself |
| *Cut-off score* = 2 | - Risk of suicide attempts or gestures |

| | |
|---|---|
| ***Thought Disturbance (6)*** | - (Boys only) Unusual beliefs and perceptions |
| *Cut-off score* = 1 | - Risk of thought disorder |
| ***Traumatic Experiences (5)*** | - (Gender specific) Lifetime exposure to traumatic events |
| *Cut-off score* = 3 | (e.g., abuse, rape, observed violence). Questions refer youth to "ever in the past," not "past few months." |
| | - Risk of trauma-related instability in emotion/perception |

*Scoring and Interpretation of the MAYSI~2*

Scoring requires a count of the "yes" responses to the items that contribute to a given scale. There is no MAYSI~2 "total score." Scores on each scale are compared to cut-off scores that are suggested in the manual or that have been decided as a matter of policy by an agency or juvenile justice system. Scores above a scale's cut-off suggest that the youth may be in need of closer attention by staff, precautionary monitoring, brief counseling, or referral for mental health services (depending on policies set by one's agency).

The Scoring Summary indicates whether the youth's score is above either of two critical scores, called the "**Caution**" and "Warning" cut-off scores. When a youth scores above the Caution cut-off score on a given scale, *the* youth has scored at a level that can be said to have **"possible clinical significance."**

To set the Caution cut-off scores, the MAYSI~2 was administered to a large number of youths, who also completed additional measures of adolescent mental and emotional disturbances (the Millon Adolescent Clinical Inventory, and the Child Behavior Checklist-Youth Self Report). These comparison measures had certain scales that were intended to identify the same disturbances as the MAYSI~2 scales, but they had been more extensively developed than the MAYSI~2. So, for each MAYSI~2 scale, we found the score that came closest to the "clinical significance" cut-off score on the parallel scale on one of these other more extensive measures. For example, if a youth scores 4 or greater on the MAYSI~2 *Alcohol/Drug Use* scale, it is very likely that youth would have scored in the "clinically significant" range on the Substance Abuse Proneness scale of the Millon Adolescent Clinical Inventory.

The Caution cut-off scores, therefore, simply mean that youths scoring above the MAYSI~2 cut-off would probably score high enough on other tests of similar adolescent disturbances to require special attention of some kind.

In contrast, the "Warning" scores result from an arbitrary cut point. Warning cut-off scores are meant to capture youth with extremely high (90th percentile) scores on subscales. Because, unlike the Caution cut-offs, Warning cut-offs are not based on any other established measure of disturbance, Warning scores were not included in the current report.

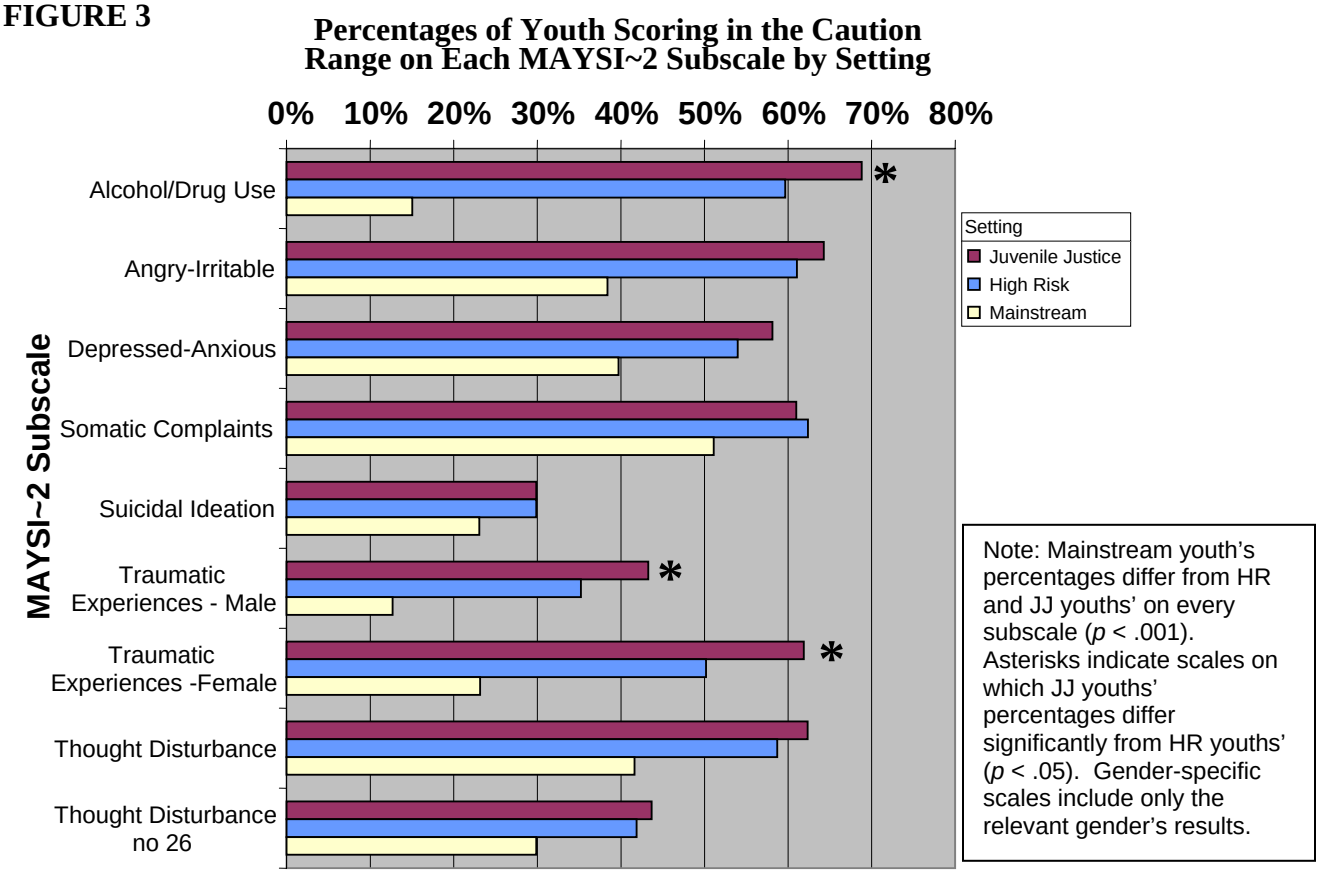
## General Findings

*Overview*

The findings reveal that mean scores on all the subscales differ depend greatly upon setting, especially comparing at-risk youth (those in custody or in high risk settings) with mainstream youth. The mean score is the average number of items that youths answer "yes" to on a given subscale. Thus, on every subscale, at-risk youth answered yes to more items (on average) than did mainstream youth (all *p*-values < .001). Furthermore, mean scores for youth in juvenile justice settings are always higher in this sample than means for youth in high risk settings which are, in turn, always higher than those of mainstream youth. However, sometimes the differences between JJ (juvenile justice) and HR (high risk) youths' means are not statistically significant. For example, even though JJ youth endorse slightly more items on average than do HR youth on the Angry-Irritable, Somatic Complaints and Suicidal Ideation subscales, these differences are not large enough, given that there's always some margin of error, to be certain that they are *really* different. See Table 34 in the appendix for details on the mean comparisons by setting.

With regard to the clinical cut-off scores on the MAYSI~2 subscales, we see a similar, but not identical pattern. As illustrated in Figure 3, youth in juvenile justice and high risk settings are more likely to score in the clinically significant range than are mainstream youth on every subscale. Usually, incarcerated youth are no more likely than high risk youth to score in the caution range. The only subscales where juvenile justice youth are more likely than high risk youth to score above the clinical cut-off are the Alcohol/Drug Use and Traumatic Experiences subscales. (See Table 35 in the Appendix for the exact figures.)

**FIGURE 3**



While the comparisons of different settings are interesting, it is important to break the settings down by gender. For many of the subscales, boys and girls responses differ significantly from one another within the same setting.

*Gender Differences (by Setting)*

Based on the factor structure and psychometric properties of the scales, the thought disturbance scale is calculated for boys only and the traumatic experiences scale is gender specific. For analyses comparing boys and girls, only the scales that are common to both are examined.

In the following Tables and Figures (Tables 4, 5, 6, and Figures 4, 5, 6), girls' mean scores* are higher than boys' mean scores on every subscale of the MAYSI~2 regardless of where they are located. This means that girls, on average, answer "yes" to more questions on each subscale than boys. (This finding is consistent with Cauffman, 2004 and Grisso et. al., 2001.) The only exception is on the Alcohol/Drug Use scales. While the mean scores may appear to be different, they do not differ to a statistically significant degree. Thus, girls in boys across each of the three settings (juvenile justice, high risk, and mainstream) report similar levels of alcohol and drug use. As we will discuss in greater detail later in the report, while there are no gender differences on alcohol/drug use across the three settings, there are differences in alcohol/drug use between the locations.

**TABLE 4**
**Comparing Boys' and Girls' Mean Subscale Scores - Juvenile Justice Setting**

| Subscale | Sex | N | Mean | Std. Dev. | *t*-Value | *p*-Value | Interpretation |
|---|---|---|---|---|---|---|---|
| Alcohol/Drug Use | Male | 991 | 4.62 | 2.72 | -0.69 | 0.487 | Boys and Girls in juvenile justice settings report similar amounts of substance use. |
| | Female | 160 | 4.78 | 2.56 | | | |
| | Total | 1151 | 4.64 | 2.70 | | | |
| Angry-Irritable | Male | 991 | 5.35 | 2.85 | -0.79 | 0.431 | Boys and Girls in juvenile justice settings report similar amounts of anger/irritability. |
| | Female | 160 | 5.54 | 2.75 | | | |
| | Total | 1151 | 5.38 | 2.84 | | | |
| Depressed-Anxious | Male | 991 | 3.29 | 2.37 | -3.87 | 0.000 | Girls in juvenile justice settings report significantly more depression/anxiety than do boys in such settings. |
| | Female | 160 | 4.13 | 2.56 | | | |
| | Total | 1151 | 3.40 | 2.41 | | | |
| Somatic Complaints | Male | 991 | 3.04 | 1.87 | -4.73 | 0.000 | Girls in juvenile justice settings report significantly more somatic complaints than do boys in such settings. |
| | Female | 160 | 3.80 | 1.96 | | | |
| | Total | 1151 | 3.15 | 1.90 | | | |
| Suicidal Ideation | Male | 991 | 1.09 | 1.62 | -3.60 | 0.000 | Girls in juvenile justice settings report significantly more suicidal ideation than do boys in such settings. |
| | Female | 160 | 1.63 | 1.79 | | | |
| | Total | 1151 | 1.16 | 1.65 | | | |

* For those that need a statistics refresher:
Mean = the average of a set of values. It's found by summing all the values and dividing by the number of values in the set.
Standard Deviation = the average (mean) distance of the values in a set from the mean of that set.
*p*-value = The significance level of a finding. The value of *p* equals the likelihood that a finding is the result of chance rather than a meaningful difference between compared groups. A *p*-value less than .05 means that there is a less than 5% possibility that the finding would have occurred by chance.

**FIGURE 4**

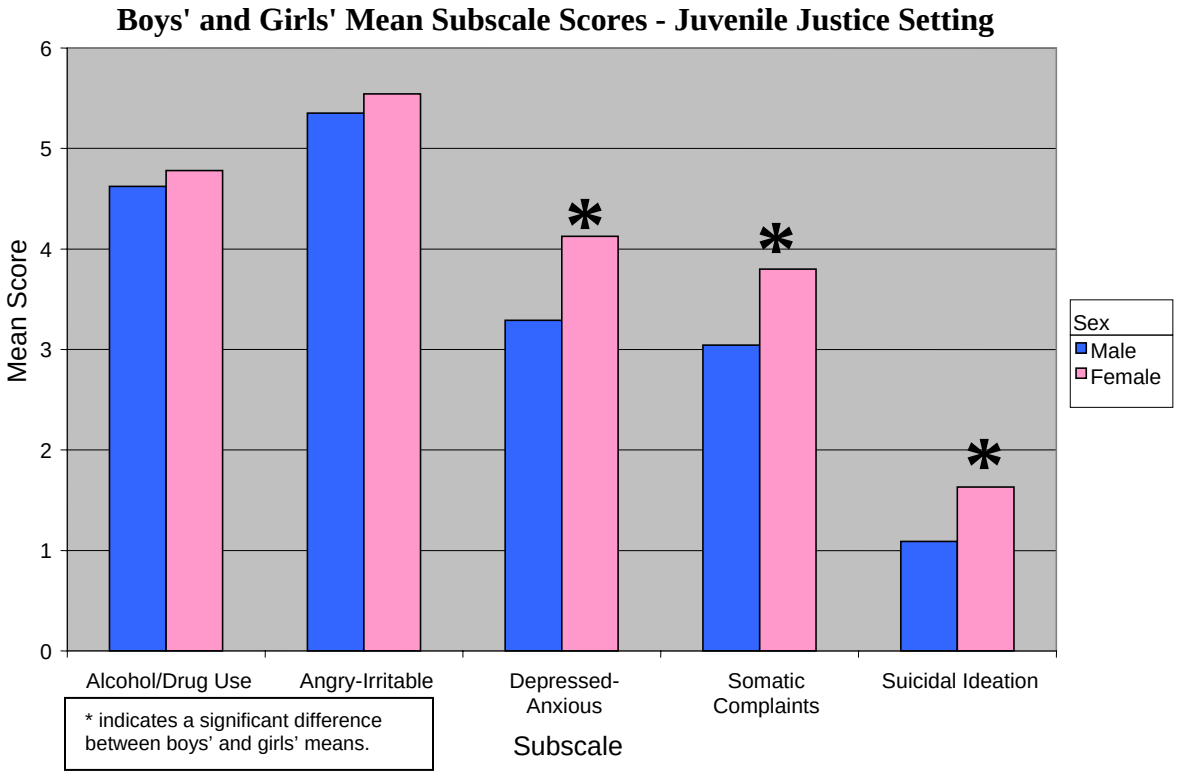



**TABLE 5**
**Comparing Boys' and Girls' Mean Subscale Scores – High Risk Setting**

| Subscale | Sex | N | Mean | Std. Dev. | *t*-Value | *p*-Value | Interpretation |
|---|---|---|---|---|---|---|---|
| Alcohol/Drug Use | Male | 511 | 4.11 | 2.6 | 1.08 | 0.279 | Boys and Girls in high risk settings report similar amounts of substance use. |
| | Female | 265 | 3.9 | 2.61 | | | |
| | Total | 776 | 4.04 | 2.61 | | | |
| Angry-Irritable | Male | 511 | 4.87 | 2.56 | -3.46 | 0.001 | Girls in high risk settings report significantly more anger/irritability than do boys in such settings. |
| | Female | 265 | 5.55 | 2.65 | | | |
| | Total | 776 | 5.10 | 2.61 | | | |
| Depressed-Anxious | Male | 511 | 2.68 | 2.21 | -7.45 | 0.000 | Girls in high risk settings report significantly more depression/anxiety than do boys in such settings. |
| | Female | 265 | 3.98 | 2.44 | | | |
| | Total | 776 | 3.13 | 2.37 | | | |
| Somatic Complaints | Male | 511 | 2.82 | 1.83 | -6.35 | 0.000 | Girls in high risk settings report significantly more somatic complaints than do boys in such settings. |
| | Female | 265 | 3.69 | 1.79 | | | |
| | Total | 776 | 3.11 | 1.86 | | | |
| Suicidal Ideation | Male | 511 | 0.8 | 1.35 | -8.06 | 0 | Girls in high risk settings report significantly more suicidal ideation than do boys in such settings. |
| | Female | 265 | 1.86 | 1.9 | | | |
| | Total | 776 | 1.16 | 1.64 | | | |

**FIGURE 5**

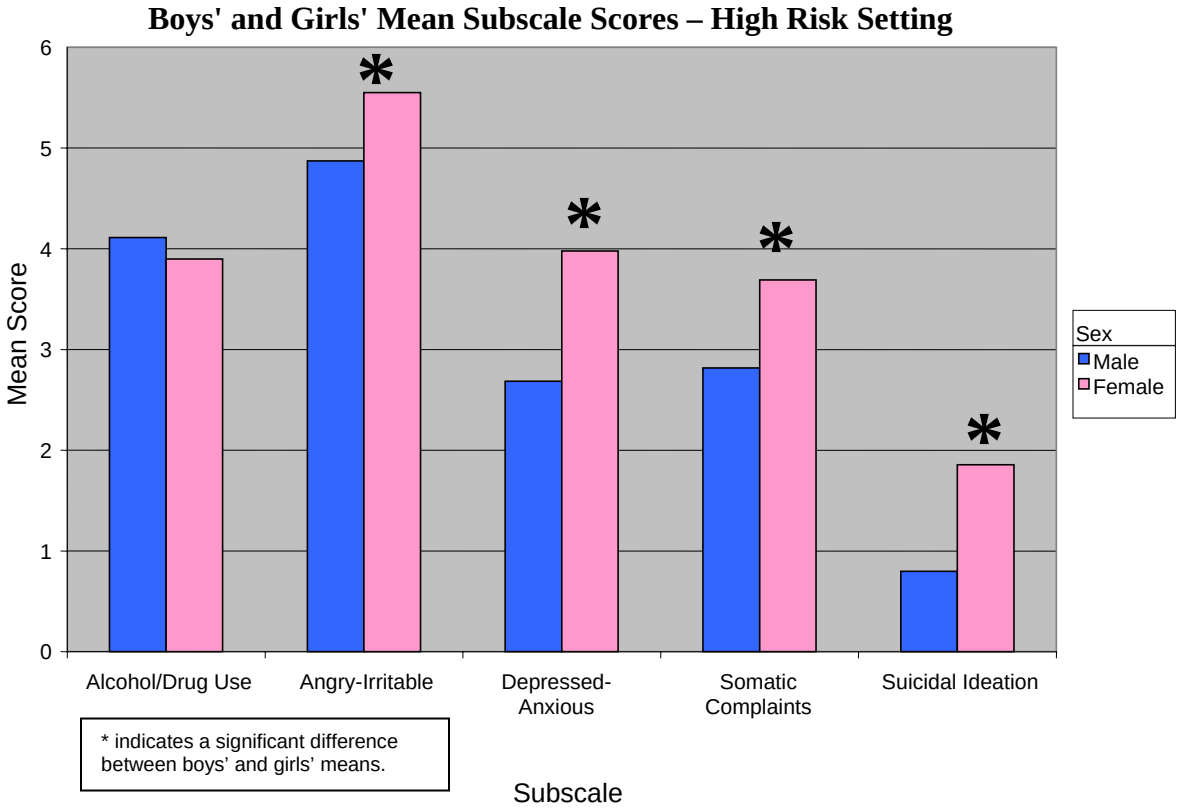
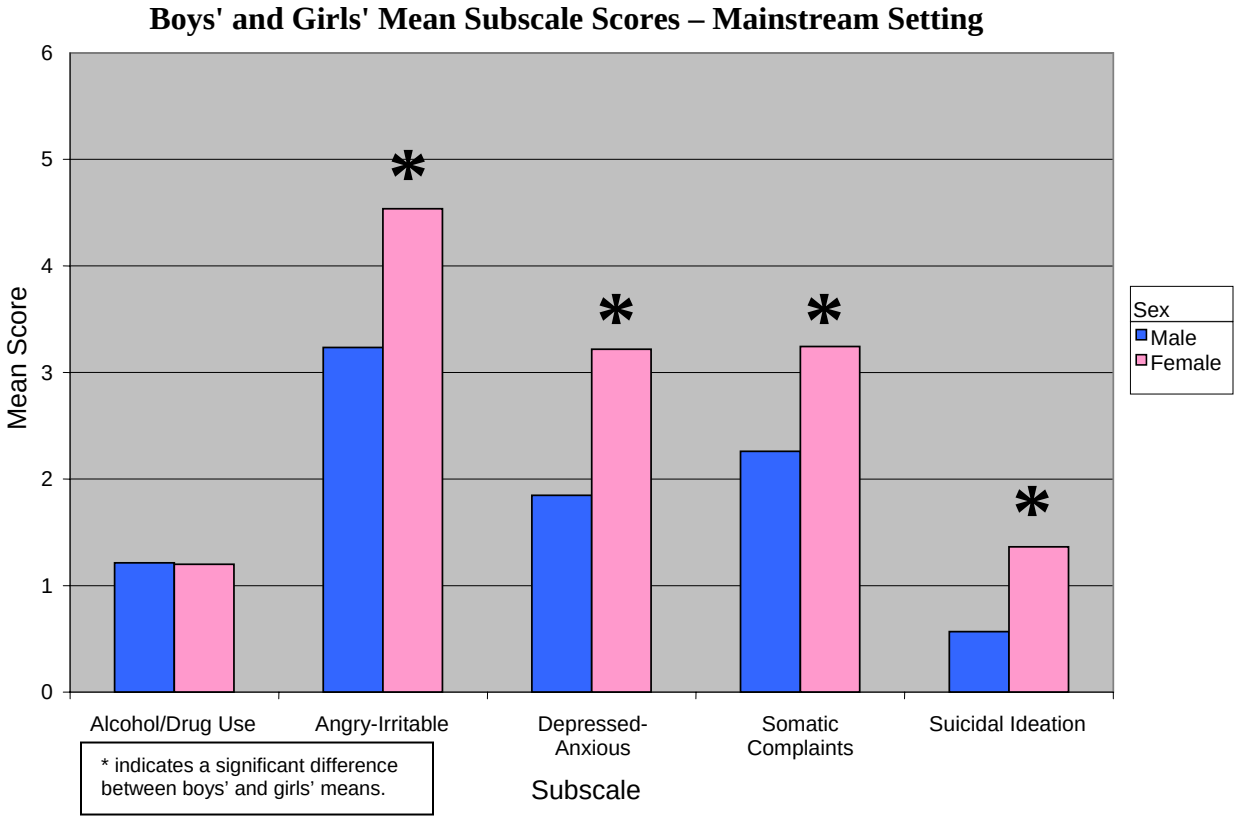



**TABLE 6**
**Comparing Boys' and Girls' Mean Subscale Scores – Mainstream Setting**

| Subscale | Sex | N | Mean | Std. Dev. | *t*-Value | *p*-Value | Interpretation |
|---|---|---|---|---|---|---|---|
| Alcohol/Drug Use | Male | 639 | 1.21 | 1.98 | 0.11 | 0.910 | Boys and Girls in mainstream settings report similar amounts of substance use. |
| | Female | 423 | 1.2 | 2.03 | | | |
| | Total | 1062 | 1.21 | 2.00 | | | |
| Angry-Irritable | Male | 639 | 3.23 | 2.43 | -8.17 | 0.000 | Girls in mainstream settings report significantly more anger/irritability than do boys in such settings. |
| | Female | 423 | 4.54 | 2.61 | | | |
| | Total | 1062 | 3.75 | 2.58 | | | |
| Depressed-Anxious | Male | 639 | 1.85 | 1.81 | -10.42 | 0.000 | Girls in mainstream settings report significantly more depression/anxiety than do boys in such settings. |
| | Female | 423 | 3.22 | 2.27 | | | |
| | Total | 1062 | 2.39 | 2.12 | | | |
| Somatic Complaints | Male | 639 | 2.26 | 1.76 | -8.99 | 0 | Girls in mainstream settings report significantly more somatic complaints than do boys in such settings. |
| | Female | 423 | 3.24 | 1.73 | | | |
| | Total | 1062 | 2.65 | 1.81 | | | |
| Suicidal Ideation | Male | 639 | 0.57 | 1.16 | -8.43 | 0 | Girls in mainstream settings report significantly more suicidal ideation than do boys in such settings. |
| | Female | 423 | 1.36 | 1.7 | | | |
| | Total | 1062 | 0.89 | 1.45 | | | |

**FIGURE 6**




*Setting Differences (by Gender)*

In the above analyses, gender differences were explored within each setting. But we are also interested to determine for each subscale whether scores were different in the three setting types (juvenile justice, high risk and mainstream). Because there were significant differences found between males and females above, the genders are kept separate for this analysis.

Overall, the results (detailed in Table 7 for boys and Table 8 for girls) indicate that youths in juvenile justice settings tend to present with the most alcohol/drug use problems as well as other mental health symptoms. Where there are exceptions to this pattern, the results find that high risk youth have scores similar to juvenile justice youth, but mainstream youths' scores remain significantly lower. For boys, such exceptions are the case on the Somatic Complaints and Thought Disturbance (item 26 omitted) subscales. Among girls, there is much more overlap between juvenile justice and high risk youths' scores. In fact, the only scales for which JJ girls' means *are* significantly higher than HR girls' are the Alcohol/Drug Use and Traumatic Experiences subscales.

The only subscale on which youth in juvenile justice do not have the highest mean score is the Suicidal Ideation scale. Among girls, those in the high risk setting endorsed, on average, more items on this scale than did girls in juvenile justice settings, though the difference between their means is not significant at $p < .05$.

*Setting Differences (By Gender)*

**TABLE 7 MAYSI~2 Mean Comparisons by Setting for Boys**

| | | N | Mean | Std. Dev. | |
|---|---|---|---|---|---|
| Alcohol/Drug Use (8 items) *Cut-off = 4 Items* | **JJ** | **991** | **4.62** | 2.72 | Boys in the juvenile justice system have significantly higher substance abuse problems than boys in high risk settings who, in turn, have significantly higher substance abuse problems than boys in mainstream high schools [Welch (2, 1236) = 482.02, $p < .001$]. |
| | **HR** | **511** | **4.11** | 2.60 | |
| | **MS** | **639** | **1.21** | 1.98 | |
| Angry-Irritable (9 items) *Cut-off = 5 Items* | **JJ** | **991** | **5.35** | 2.85 | Boys in the juvenile justice system have significantly higher levels of anger/irritability than boys in high risk settings who, in turn, have significantly higher levels of anger/irritability than boys in mainstream high schools [Welch (2, 1256) = 136.17, $p < .001$]. |
| | **HR** | **511** | **4.87** | 2.56 | |
| | **MS** | **639** | **3.23** | 2.43 | |
| Depressed-Anxious (9 items) *Cut-off = 3 Items* | **JJ** | **991** | **3.29** | 2.37 | Boys in the juvenile justice system have significantly higher levels of depression/anxiety than boys in high risk settings who, in turn, have significantly higher levels of depression/anxiety than boys in mainstream high schools [Welch (2, 1246) = 97.25, $p < .001$]. |
| | **HR** | **511** | **2.68** | 2.21 | |
| | **MS** | **639** | **1.85** | 1.81 | |
| Somatic Complaints (6 items) *Cut-off = 3 Items* | **JJ** | **991** | **3.04** | 1.87 | Mainstream boys have significantly fewer somatic complaints than do JJ boys and boys in high risk settings. [F (2, 2138) = 36.25, $p < .001$] But boys in juvenile justice setting do not have significantly more somatic complaints than boys in high risk settings (although there is a trend present: $p = .07$). |
| | **HR** | **511** | **2.82** | 1.83 | |
| | **MS** | **639** | **2.26** | 1.76 | |
| Suicidal Ideation (5 items) *Cut-off = 2 Items* | **JJ** | **991** | **1.09** | 1.62 | Boys in the juvenile justice system have significantly higher levels of suicidal ideation than boys in high risk settings who, in turn, have significantly higher levels of suicidal ideation than boys in mainstream high schools [Welch (2, 1276) = 28.61, $p < .001$]. |
| | **HR** | **511** | **0.8** | 1.35 | |
| | **MS** | **639** | **0.57** | 1.16 | |
| Thought Disturbances -Boys (5 items) *Cut-off = 1 Item* | **JJ** | **991** | **1.31** | 1.40 | Boys in the juvenile justice system have significantly higher levels of thought disturbance than boys in high risk settings who, in turn, have significantly higher levels of thought disturbance than boys in mainstream high schools [Welch (2, 1267) = 37.80, $p < .001$]. |
| | **HR** | **511** | **1.09** | 1.22 | |
| | **MS** | **639** | **0.76** | 1.15 | |
| Thought Disturbances (item 26 omitted) -Boys (4items) *Cut-off = 1 Item* | **JJ** | **991** | **0.82** | 1.12 | When thought disturbance is measured with item 26 omitted, juvenile justice boys do not show significantly higher rates of disturbance than boys in high risk settings (although there is a trend present: $p = .07$). Mainstream boys report significantly less disturbance than do the other two groups [Welch (2, 1267) = 22.02, $p < .001$]. |
| | **HR** | **511** | **0.69** | 0.97 | |
| | **MS** | **639** | **0.49** | 0.89 | |
| Traumatic Experiences -Male (5 items) *Cut-off = 3 Items* | **JJ** | **991** | **2.16** | 1.37 | Boys in the juvenile justice system report significantly more traumatic experiences than boys in high risk settings who, in turn, report significantly more traumatic experiences than boys in mainstream high schools [Welch (2, 1249) = 128.96, $p < .001$]. |
| | **HR** | **511** | **1.97** | 1.27 | |
| | **MS** | **639** | **1.17** | 1.18 | |

Note: JJ refers to incarcerated youth, HR refers to "high risk" community youth, MS refers to mainstream youth. For each subscale, groups (settings) that are not significantly different from one another are in the same color ink. Groups in different color ink (within each subscale) are significantly different from one another.

**TABLE 8 MAYSI~2 Mean Comparisons by Setting for Girls**

| | | N | Mean | Std. Deviation | Comparisons |
|---|---|---|---|---|---|
| Alcohol/Drug Use (8 items) *Cut-off = 4 Items* | **JJ** | **160** | **4.78** | 2.56 | Girls in the juvenile justice system report significantly higher levels of substance use than girls in high risk settings who, in turn, report significantly higher levels of substance use than girls in mainstream high schools [Welch (2, 373) = 186.61, $p < .001$]. |
| | **HR** | **265** | **3.9** | 2.61 | |
| | **MS** | **423** | **1.2** | 2.03 | |
| Angry-Irritable (9 items) *Cut-off = 5 Items* | **JJ** | **160** | **5.54** | 2.75 | Juvenile justice girls report amounts of anger/irritability similar to girls in high risk settings. Mainstream girls differ significantly from the other two groups [F (2, 845) = 15.44, $p < .001$]. |
| | **HR** | **265** | **5.55** | 2.65 | |
| | **MS** | **423** | **4.54** | 2.61 | |
| Depressed-Anxious (9 items) *Cut-off = 3 Items* | **JJ** | **160** | **4.13** | 2.56 | Juvenile justice girls report amounts of depression/anxiety similar to girls in high risk settings. Mainstream girls differ significantly from the other two groups [Welch (2, 392) = 12.51, $p < .001$]. |
| | **HR** | **265** | **3.98** | 2.44 | |
| | **MS** | **423** | **3.22** | 2.27 | |
| Somatic Complaints (6 items) *Cut-off = 3 Items* | **JJ** | **160** | **3.8** | 1.96 | Juvenile justice girls report amounts of somatic complaints similar to girls in high risk settings. Mainstream girls differ significantly from the other two groups [F (2, 845) = 25.87, $p < .001$]. |
| | **HR** | **265** | **3.69** | 1.79 | |
| | **MS** | **423** | **3.24** | 1.73 | |
| Suicidal Ideation (5 items) *Cut-off = 2 Items* | **JJ** | **160** | **1.63** | 1.79 | Girls in high risk settings report higher levels of suicidal ideation than do mainstream girls. Juvenile justice girls do not differ significantly from the other two groups [Welch (2, 399) = 6.13, $p = .002$]. |
| | **HR** | **265** | **1.86** | 1.90 | |
| | **MS** | **423** | **1.36** | 1.70 | |
| Traumatic Experiences -Female (5 items) *Cut-off = 3 Items* | **JJ** | **160** | **2.94** | 1.80 | Girls in the juvenile justice system report more traumatic experiences than girls in high risk settings who, in turn, report more traumatic experiences than do girls in mainstream high schools [Welch (2, 376) = 62.84, $p < .001$]. |
| | **HR** | **265** | **2.49** | 1.66 | |
| | **MS** | **423** | **1.47** | 1.41 | |

Note: JJ refers to incarcerated youth, HR refers to "high risk" community youth, MS refers to mainstream youth. For each subscale, groups (settings) that are not significantly different from one another are printed in the same color ink. Groups printed in different color ink (within each subscale) are significantly different from one another.

*Caution Range Scores on the MAYSI~2 Subscales*

Another way to understand the data is to look at the percentage of youth that score above the clinically significant "caution" cutoff on the subscales. As outlined in previous research, cut-offs for clinically significant scores were calculated for the MAYSI~2 scales (Grisso, et al., 2001). (The cutoff score is different for each subscale.) The MAYSI~2 Caution cutoffs were designed to identify youth that would likely receive a diagnosis in the relevant domain if given a full clinical assessment.

*Unusual Results for Thought Disturbance*

The percentage of youth scoring in the caution range on the thought disturbance subscale is unexpectedly high in this sample. The goal of the thought disturbance subscale is to identify youths with unusual beliefs and perceptions. For a youth to score in the caution range on the Thought Disturbance Subscale, he need only endorse *one* of the 5 items of the scale. Previous research has found that 39% of male juvenile offenders do so (Cauffman, 2004). Four of the five scale items behaved similarly in this study to previous studies, but one item (# 26): "Have you had a bad feeling that things don't seem real, like you're in a dream?" was endorsed by an unexpectedly large proportion of youth in this sample: 41% of boys (and 43% of girls). Because of the unusual results for this subscale, we will report results using both the original Thought Disturbance subscale scores and modified scores calculated with the problematic item omitted. Table 9 compares the percent of caution-range scores on the Thought Disturbance Subscale with and without item 26.

*Caution Score Results*

As shown in Table 9 and Figures 7 and 8, results of the statewide screening show clearly that youth involved with the juvenile justice system or at risk for involvement with it report high rates of clinically relevant disturbance in every scale—much higher than rates found in previous research (Cauffman, 2004; Grisso et. al. 2001). Comparing the rates for HR and JJ youth with those for mainstream youth, the JJ and HR youth are more likely to score in the caution range on every subscale. The difference between mainstream and higher risk youth is more pronounced (with regard to rates of clinically significant scores) for boys than for girls. (For county-specific rates of caution-range scores, see Tables 28-31 in the appendix.)

Among incarcerated youth, more girls than boys score in the clinical range on Depressed/Anxious, Somatic Complaints, and Suicidal Ideation. While there are more JJ girls than boys in the caution-range on the Angry/Irritable and Alcohol/Drug Use subscales, the differences are not statistically significant—boys and girls are equivalent in their likelihood of scoring above the clinical cutoff on these subscales. Among non-incarcerated youth, (high-risk and mainstream), girls are more likely to score in the caution range on every comparable scale except Alcohol/Drug Use. In mainstream and high risk settings, boys and girls are equally likely to score in the clinical range on this scale, though there is a trend toward boys being more likely to score in the caution range in HR settings.

One striking finding is the overall high percentages of caution-range scores for mainstream girls. Even if they are not scoring in the caution-range quite as frequently as JJ and HR females, there should be serious concern that 35% score in the clinically relevant range for suicidal ideation and that the majority of mainstream females are in the clinical range for angry/irritable, depressed-anxious, and somatic

complaints. (Thought disturbance is not interpreted for females.) It is possible that mainstream females respond to the questions differently than do high risk and incarcerated youth—they may have a lower threshold for reporting symptoms than youth in higher risk or incarceration settings. This could be a result of overall less severe life experiences and/or social comparison, meaning that girls, more than boys, evaluate their own symptoms relative to their (somewhat sheltered) proximate peer group.

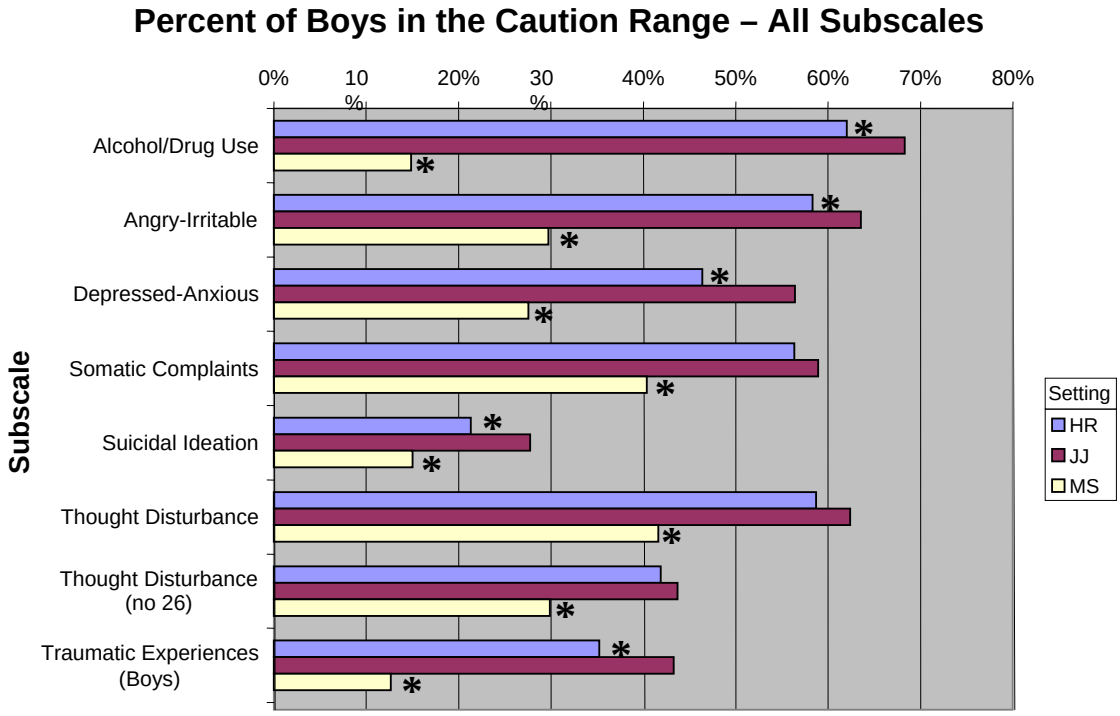
**TABLE 9**

**Percent of Youth in the Caution Range for All Scales by Setting**

| | Juvenile J. | | High Risk | | Mainstream | |
|---|---|---|---|---|---|---|
| **Subscale** | M | F | M | F | M | F |
| Alcohol/Drug Use | 68% | 72% | 62%* | 55% | 15% | 15% |
| Angry-Irritable | 64% | 69% | 58% | 66%** | 28% | 52%*** |
| Depression-Anxiety | 56% | 69%** | 46% | 69%*** | 28% | 58%*** |
| Somatic Complaints | 59% | 74%*** | 56% | 74%*** | 40% | 67%*** |
| Suicidal Ideation | 28% | 43%*** | 21% | 46%*** | 15% | 35%*** |
| Thought Disturbance[a] | 62% | 67% | 59% | 62% | 42% | 59%*** |
| Thought Disturbance - no 26[a] | 44% | 48% | 42% | 48% | 30% | 40%*** |
| Traumatic Experiences (Boys) | 43% | | 35% | | 13% | |
| Traumatic Experiences (Girls) | | 62% | | 50% | | 23% |

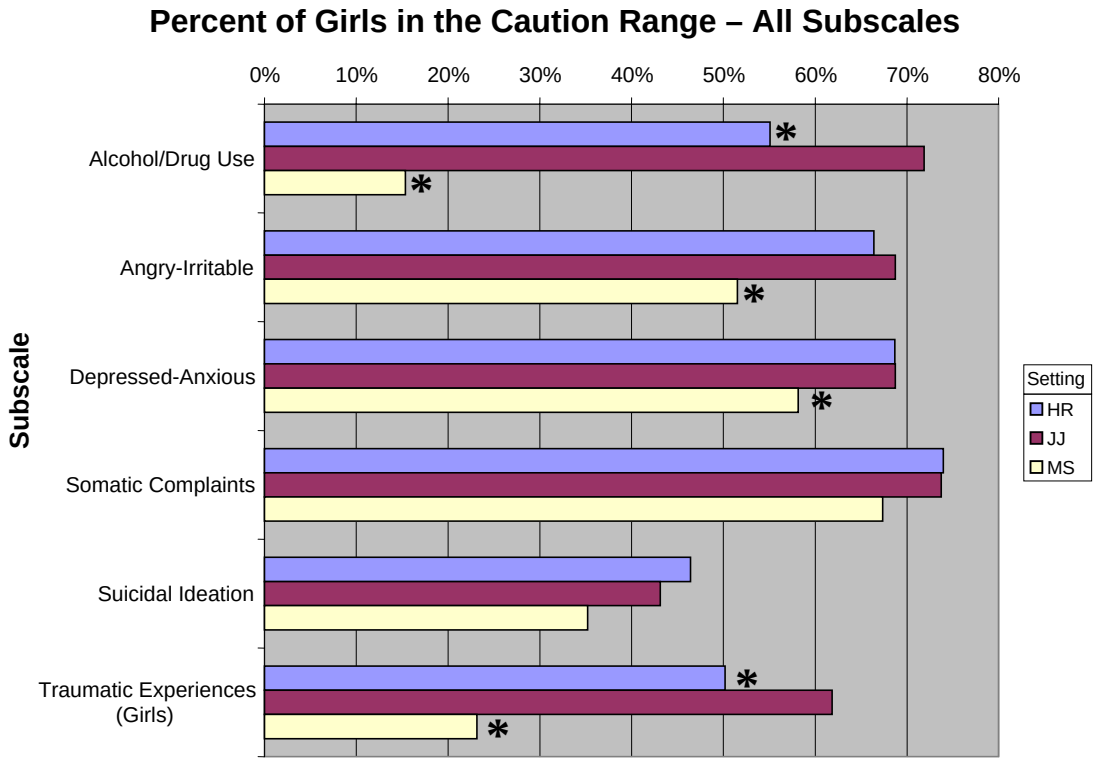
Notes: [a] Girls' percentages in the caution-range on the Thought Disturbance subscale are presented for research purposes only—in practice, this scale is not interpreted for girls. Asterisks mark differences between males and females within each setting. * indicates a nonsignificant trend ($p < .06$), ** indicates $p < .05$, *** indicates $p < .001$. The starred sex is the one with the higher percentage answering "yes."

**FIGURE 7**




Note: * indicates significant difference ($p < .05$) from the Juvenile Justice (JJ) percentage.

**FIGURE 8**




Note: * indicates significant difference ($p < .05$) from the Juvenile Justice (JJ) percentage.

These findings are consistent with what research has revealed about female adolescents in general as well as those that exhibit delinquent behavior. Adolescent female offenders typically exhibit high rates of mental health problems. Girls have higher rates of depression than boys throughout adolescence and are more likely to attempt suicide. Substance abuse, low self-esteem, and negative body image are also common problems for adolescent girls. (NMHA, 2005)

The substance abuse treatment needs of females involved in the juvenile justice system are particularly acute. Arrests for drug abuse violations have increased markedly over the past few years for adolescent females, (Snyder, 1998) and, in a number of cities, nearly 60% to 70% of young women (aged 15-20) test positive for drugs at the time of arrest. (NIJ, 1998) Studies show from 60% to 87% of adolescent female offenders need substance abuse treatment. (Prescott, 1998) Many of these young women may be self-medicating with illegal substances in attempt to cope with stress or mental health difficulties, such as anxiety or depression. Research has shown a strong connection between exposure to trauma and abuse (e.g. sexual abuse and family violence) and substance use among girls. (NMHA, 2005) And, as illustrated in Tables 10-15, pages 18-20, the results of this screening also indicate a strong relation between alcohol/drug use and other mental health problems.

A number of prevalence studies conducted in state juvenile justice systems indicate that females tend to have higher rates of mental health problems than their male counterparts. For example, a study of juvenile offenders in Georgia Youth Detention Centers revealed that nearly 60% of girls met criteria for an anxiety disorder (in contrast to 32% among boys); 59% of girls had a mood disorder (versus 22% of boys). (Marsteller et al., 1997) Suicide attempts and self-mutilation by girls are particular problems in juvenile facilities. Characteristics of the detention environment (e.g. seclusion, staff insensitivity, loss of privacy) can add to the negative feelings and loss of control girls feel, resulting in suicide attempts and self-mutilation.

Adolescent girls who come into contact with the juvenile justice system report extraordinarily high levels of abuse and trauma. Incarcerated girls report significantly more physical and sexual abuse than boys, with more than 70% of girls reporting such experiences. (Evans et al, 1996) More than one third of girls (34%) incarcerated in probation camps and detention centers in Los Angeles County reported sustaining an injury as a result of physical punishment as a child, while more than half (56%) reported witnessing the homicide of a close friend or relative. (NMHA, 2005) As a result of repeated exposure to multiple forms of violence and trauma, Posttraumatic Stress Disorder (PTSD) is prevalent among adolescent girls in the juvenile justice system, with nearly 50% meeting diagnostic criteria for the disorder. (Cauffman et al, 1998) In the present study about half of incarcerated girls report levels of traumatic experiences in the caution range. An even higher percentage of high risk girls in our sample report clinically significant numbers of traumatic experiences.

*Interrelatedness of the MAYSI~2 Subscales*

A strong correlation between subscales indicates that youths that answer "yes" to a lot of items on one scale also tend to endorse a lot of items on the correlated subscale. Conversely, youths that score low on a given scale will also tend to score low on a highly correlated scale. Correlations range from 0 (completely unrelated) to 1 or -1 (total correlation, with negative meaning that the relationship is inverse). For example, looking at the correlations between subscales for JJ boys, we see that the Traumatic Experiences (Male) subscale is strongly correlated[*] ($r$ = .64) with the Depressed/Anxious subscale. Thus, if we knew that a youth had endorsed a lot of items on the Traumatic Experiences subscale, we would expect that he might endorse more items on the Depressed/Anxious subscale than another boy who did not report a lot of traumatic experiences. By squaring the correlation coefficient, we can estimate the percent of association between any two scales. For example, among incarcerated girls, the correlation between scores on the Alcohol/Drug Use and Angry/Irritable subscales is .56. Squaring .56 gives us .3136, which is about 31%. One interpretation of this figure is that, on average, 31% of an incarcerated girl's score on the Angry/Irritable Scale could be predicted by knowing her score on the Alcohol/Drug Use scale. The relationship between scores on the Alcohol/Drug Use and Angry-Irritable subscales is particularly strong for at-risk and incarcerated boys as well as incarcerated girls. Correlation can not tell us whether there is a causal relationship between these subscales, (i.e. Does alcohol/drug use lead to anger/irritability or vice versa? Or does something else cause both?) but we would expect to find a correlation if there were a causal link.

[*] Jacob Cohen's rule of thumb for assessing the strength of a correlation is as follows: a weak $r$ = .10, a moderate $r$ = .30, and a strong $r$ = .50 or more.

Not surprisingly, all the MAYSI~2 subscales are significantly correlated with one another in this sample.[*] This is the case for youths in all three settings (see Tables 10-15). There is a significant amount of overlap between the phenomena being tapped by the MAYSI~2 subscales (anger, depression, substance abuse, etc.). The findings are consistent with the notion that there is a large amount of co-morbidity in behavioral and emotional problems. Anxiety and depression, for example, co-occur so frequently that the MAYSI~2 does not even attempt to tease them apart, using instead the hybrid Depressed/Anxious subscale.

**TABLE 10**
**Correlation Between MAYSI~2 Subscales for Boys in Juvenile Justice Settings**

| | Angry-Irritable | Depressed-Anxious | Somatic Complaints | Suicidal Ideation | Thought Disturbances | Thought Disturbances no 26 | Traumatic Experiences - M |
|---|---|---|---|---|---|---|---|
| Drug/Alcohol Use | 0.49 | 0.36 | 0.34 | 0.29 | 0.34 | 0.29 | 0.37 |
| Angry-Irritable | | 0.62 | 0.48 | 0.42 | 0.49 | 0.44 | 0.50 |
| Depressed-Anxious | | | 0.58 | 0.63 | 0.63 | 0.56 | 0.64 |
| Somatic Complaints | | | | 0.37 | 0.42 | 0.35 | 0.44 |
| Suicidal Ideation | | | | | 0.47 | 0.45 | 0.41 |
| Thought Disturbances | | | | | | 0.94 | 0.46 |
| Thought Disturbances (item 26 omitted) | | | | | | | 0.40 |

Note: all correlations are statistically significant ($p < .001$).

**TABLE 11**
**Correlation Between MAYSI~2 Subscales for Boys in High Risk Settings**

| | Angry-Irritable | Depressed-Anxious | Somatic Complaints | Suicidal Ideation | Thought Disturbances | Thought Disturbances no 26 | Traumatic Experiences - M |
|---|---|---|---|---|---|---|---|
| Drug/Alcohol Use | 0.48 | 0.28 | 0.29 | 0.26 | 0.28 | 0.24 | 0.33 |
| Angry-Irritable | | 0.61 | 0.52 | 0.35 | 0.45 | 0.38 | 0.44 |
| Depressed-Anxious | | | 0.50 | 0.56 | 0.50 | 0.42 | 0.52 |
| Somatic Complaints | | | | 0.34 | 0.43 | 0.35 | 0.40 |
| Suicidal Ideation | | | | | 0.41 | 0.36 | 0.28 |
| Thought Disturbances | | | | | | 0.92 | 0.37 |
| Thought Disturbances (item 26 omitted) | | | | | | | 0.33 |

Note: all correlations are statistically significant ($p < .001$).

[*] It is important to note that a few of the subscales share items, so there is some inflation in the correlation between those subscales.

**TABLE 12**
**Correlation Between MAYSI~2 Subscales for Boys in Mainstream Settings**

| | Angry-Irritable | Depressed-Anxious | Somatic Complaints | Suicidal Ideation | Thought Disturbances | Thought Disturbances no 26 | Traumatic Experiences - M |
|---|---|---|---|---|---|---|---|
| Drug/Alcohol Use | 0.34 | 0.25 | 0.20 | 0.20 | 0.36 | 0.32 | 0.35 |
| Angry-Irritable | | 0.59 | 0.45 | 0.40 | 0.39 | 0.34 | 0.46 |
| Depressed-Anxious | | | 0.44 | 0.53 | 0.44 | 0.39 | 0.51 |
| Somatic Complaints | | | | 0.25 | 0.35 | 0.29 | 0.37 |
| Suicidal Ideation | | | | | 0.35 | 0.31 | 0.30 |
| Thought Disturbances | | | | | | 0.94 | 0.40 |
| Thought Disturbances (item 26 omitted) | | | | | | | 0.35 |

Note: all correlations are statistically significant ($p < .001$).

**TABLE 13**
**Correlation Between MAYSI~2 Subscales for Girls in Juvenile Justice Settings**

| | Angry-Irritable | Depressed-Anxious | Somatic Complaints | Suicidal Ideation | Traumatic Experiences - F |
|---|---|---|---|---|---|
| Drug/Alcohol Use | 0.56 | 0.41 | 0.45 | 0.31 | 0.44 |
| Angry-Irritable | | 0.61 | 0.51 | 0.43 | 0.35 |
| Depressed-Anxious | | | 0.54 | 0.55 | 0.55 |
| Somatic Complaints | | | | 0.37 | 0.31 |
| Suicidal Ideation | | | | | 0.42 |

Note: all correlations are statistically significant ($p < .001$).

**TABLE 14**
**Correlation Between MAYSI~2 Subscales for Girls in High Risk Settings**

| | Angry-Irritable | Depressed-Anxious | Somatic Complaints | Suicidal Ideation | Traumatic Experiences - F |
|---|---|---|---|---|---|
| Drug/Alcohol Use | 0.36 | 0.38 | 0.33 | 0.33 | 0.37 |
| Angry-Irritable | | 0.65 | 0.50 | 0.52 | 0.39 |
| Depressed-Anxious | | | 0.56 | 0.59 | 0.53 |
| Somatic Complaints | | | | 0.34 | 0.39 |
| Suicidal Ideation | | | | | 0.30 |

Note: all correlations are statistically significant ($p < .001$).

**TABLE 15**
**Correlation Between MAYSI~2 Subscales for Girls in Mainstream Settings**

| | Angry-Irritable | Depressed-Anxious | Somatic Complaints | Suicidal Ideation | Traumatic Experiences - F |
|---|---|---|---|---|---|
| Drug/Alcohol Use | 0.43 | 0.28 | 0.24 | 0.33 | 0.33 |
| Angry-Irritable | | 0.61 | 0.50 | 0.48 | 0.41 |
| Depressed-Anxious | | | 0.46 | 0.64 | 0.46 |
| Somatic Complaints | | | | 0.25 | 0.35 |
| Suicidal Ideation | | | | | 0.32 |

Note: all correlations are statistically significant ($p < .001$).

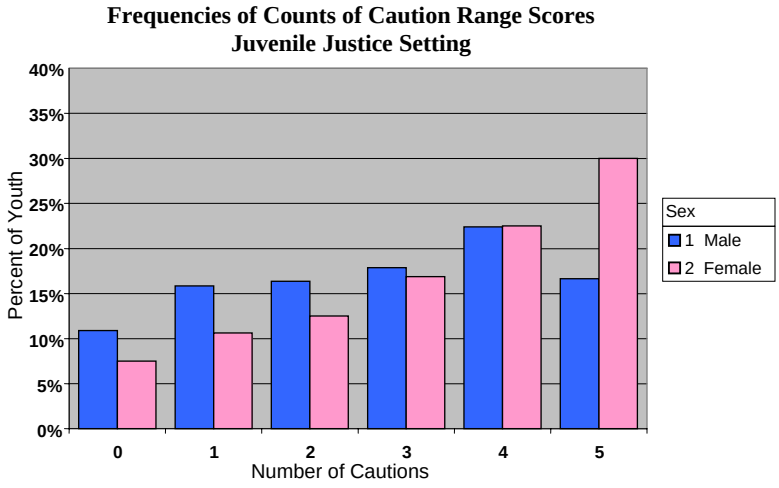
The frequency with which problems in different domains tend to co-occur is illustrated in Table 16 and Figures 9, 10, and 11. It is informative to note the high percentages of youth that have Caution scores on more than one subscale. (Only the 5 subscales that apply to both genders are included here.) More interesting is the finding that, of the youth that have *any* caution-range score on a MAYSI~2 subscale, 82% have multiple caution-range scores; this is the finding across all youth in the sample. Put another way, a youth who has any caution-range score is 3.7 times more likely to have multiple caution-range scores than to have just one.

Looking at Figures 9, 10, and 11, of the percentage of youth in each setting receiving 0,1, 2, 3, 4 or 5 Cautions, there is a trend among juvenile justice and high risk youth toward a larger number of cautions being the more common outcome. Mainstream boys show the opposite trend, with fewer cautions being far more common than many. Other groups fall somewhere between these two trends, with any number cautions being roughly as likely as any other number of cautions. For girls, only at the level of receiving 5 cautions do we see a clear difference between the mainstream and higher risk settings, with 30% and 25% of incarcerated and high risk girls having 5 cautions compared to 7% of mainstream girls.

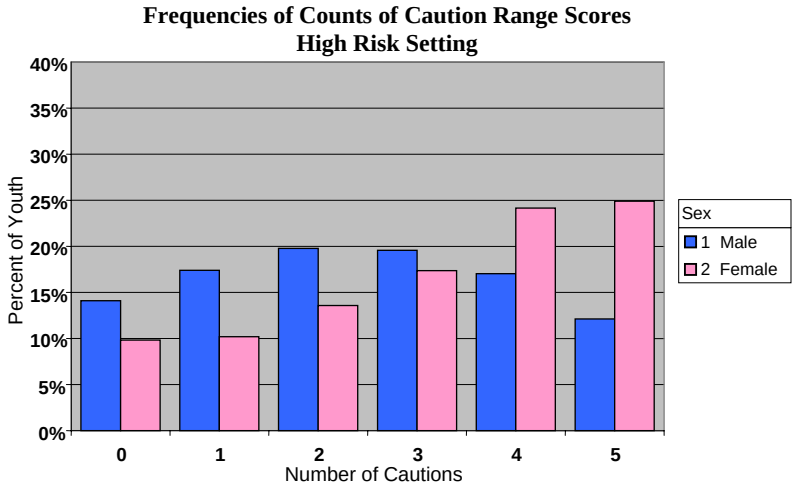
**TABLE 16**
**Percentages of Zero, Single, and Multiple Caution-Range Scores on the MAYSI~2**

| Setting | Sex | % Zero Cautions | % One Caution | % > One Caution | Of those that Have ANY Caution, % that Have Multiple Cautions |
|---|---|---|---|---|---|
| Juvenile Justice | male | 11% | 16% | 73% | 82% |
| | female | 8% | 11% | 82% | 88% |
| High Risk | male | 14% | 17% | 68% | 80% |
| | female | 10% | 10% | 80% | 89% |
| Main-stream | male | 38% | 25% | 37% | 60% |
| | female | 16% | 18% | 65% | 78% |
| Total | both | 18% | 18% | 65% | 82% |

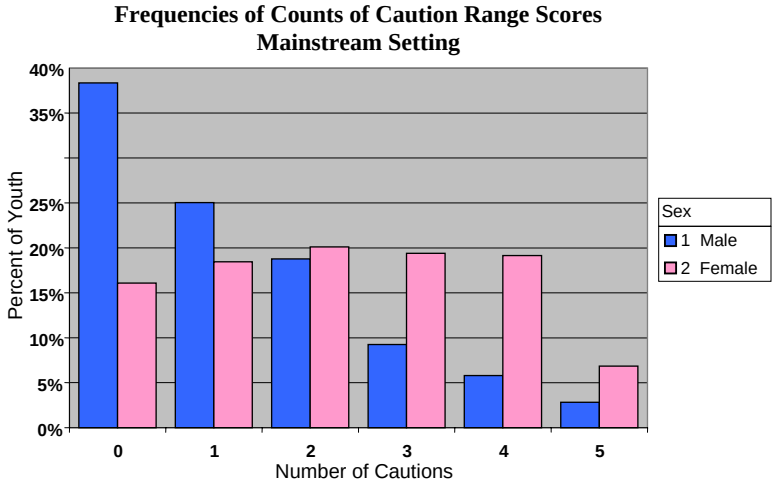
## FIGURE 9




## FIGURE 10




## FIGURE 11



## Substance Abuse: Results for the Alcohol/Drug Use Subscale

*Overview*

Youths' scores on the Alcohol/Drug Use subscale, which asks questions about substance use, are remarkably high in this sample. The percentages of juvenile justice youth scoring in the clinically significant "caution" range are exactly twice as high as in previous studies (Cauffman, 2004). Part of the reason for the higher scores may be that the youth in this sample took the screen anonymously whereas, in previous studies with the MAYSI~2, youth's responses were identifiable. Another possible reason for the elevated scores is that youth in this sample do in fact use substances more frequently than other sampled populations.

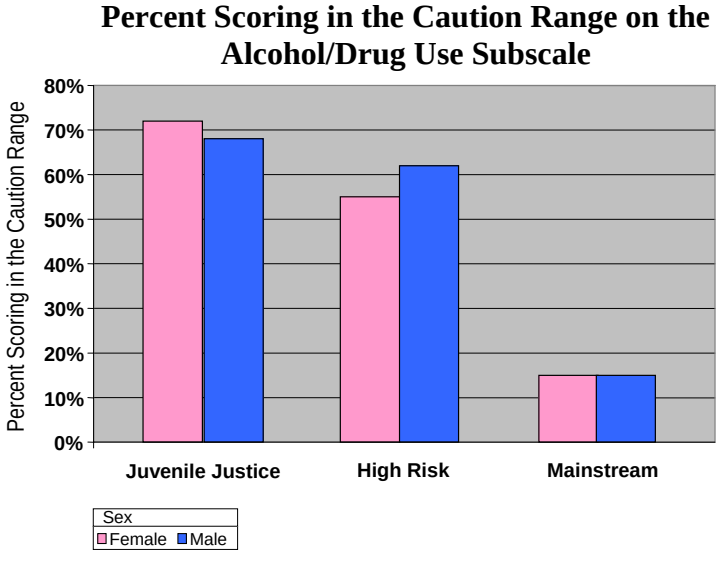
The results show that scores on the Alcohol/Drug Use subscale vary by setting type with juvenile justice youth reporting higher levels of use than high risk youth. In turn, both of these groups (juvenile justice and high risk) report higher levels of substance use than mainstream youth [$F = 464.65$, $p < .001$]. In Table 17 below, results are reported for mean scores as well as the percent of youth scoring in the caution range in each setting. Recall that the caution-range scores are considered "clinically significant" and, for the Alcohol/Drug Use subscale, indicate that youth have endorsed at least 4 items out of 8.

**TABLE 17**
**Alcohol/Drug Use Subscale – Variation by Setting**

| | **Mean (St. Dev) out of 8** | | **% in caution range (4 out of 8 items = "yes")** | |
|---|---|---|---|---|
| | Male | Female | Male | Female |
| Juvenile Justice | 4.62 (2.72) | 4.78 (2.56) | 68% | 72% |
| High Risk | 4.11 (2.60) | 3.90 (2.61) | 62% | 55% |
| Mainstream | 1.21 (1.98) | 1.20 (2.03) | 15% | 15% |

Note: The percentage of males in the caution range does not differ significantly from the percentage of females in the caution range in any setting.

**FIGURE 12**




As depicted in Figure 12, a majority of youth in high risk and juvenile justice settings scored in the clinically relevant range for the Alcohol/Drug Use subscale. Surprisingly, a considerable proportion (15%) of youth in mainstream settings scored in the caution range (that is, they endorsed at least 4 out of the 8 items on the alcohol/drug use subscale).

The study found no significant gender differences (neither with means nor percentage of caution-range scores) for reported alcohol and drug use in any of the three settings.

*Item Analysis*

Analysis of the ways in which boys and girls respond (within each setting) to the individual items on the Alcohol/Drug Use scale reveals some interesting differences (and non-differences). Mainstream youth and juvenile justice youth are alike in that they show relatively little gender difference in their responses to the alcohol/drug use subscale questions. In high risk settings, the picture is different; boys are more likely to report getting into trouble and fighting while using substances compared to girls. Boys also report more polysubstance use and are more likely than girls to say that they have been drunk or high at school. The only item which high risk girls endorse more than high risk boys is the one that asks whether they have used substances to help them feel better. This pattern is consistent with the hypothesis that girls' substance use accompanies internalizing tendencies while boys' use accompanies externalizing behaviors. The nonsignificant trends among mainstream use also echo this pattern. It is noteworthy that no such gender pattern (not even considering trends) is apparent in the juvenile justice population, not even on the questions about getting into trouble and fighting. These findings suggest that incarcerated girls use alcohol and drugs similarly to their male counterparts in custody.

**TABLE 18**
**Alcohol/Drug Use Item Statistics: Percent Answering "Yes"**

| | Juvenile Justice | | High Risk | | Mainstream | |
|---|---|---|---|---|---|---|
| | Male | Female | Male | Female | Male | Female |
| 10. Have you done anything you wish you hadn't, when you were drunk or high? | 62% | 63% | 51% | 57% | 20% | 21% |
| 19. Have your parents or friends thought you drink too much? | 35% | 42%* | 33% | 28% | 8% | 9% |
| 23. Have you gotten in trouble when you've been high or have been drinking? | 69% | 73% | 62%** | 54% | 15% | 15% |
| 24. If yes [to #23], has the trouble been fighting? | 38% | 33% | 26%** | 19% | 4%* | 2% |
| 33. Have you used alcohol or drugs to help you feel better? | 66% | 72% | 57% | 65%** | 19% | 24%* |
| 37. Have you been drunk or high at school? | 68% | 66% | 62%*** | 51% | 15% | 15% |
| 40. Have you used alcohol and drugs at the same time? | 71% | 74% | 68%** | 61% | 19% | 15% |
| 45. Have you been so drunk or high that you couldn't remember what happened? | 54% | 57% | 52% | 55% | 21% | 19% |

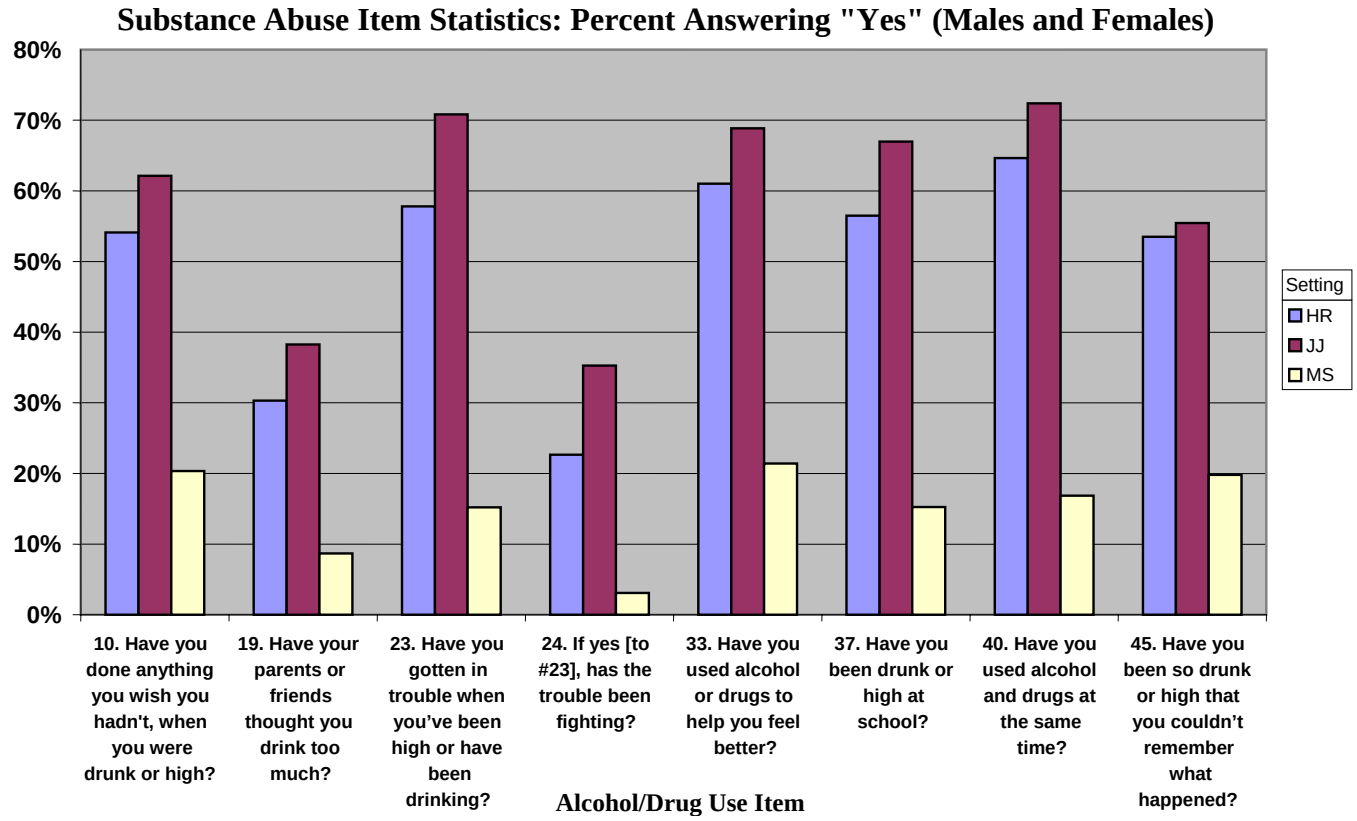
Asterisks mark differences between males and females within each setting. * indicates a trend ($p < .08$), ** indicates $p < .05$, *** indicates $p < .01$. The starred sex is the one with the higher percentage answering "yes."

As noted in Figure 13 below, some of the 8 items on the Alcohol/Drug Use subscale are endorsed more frequently than others. For example, a majority of youth in high risk and juvenile justice settings answer "yes" to the following 6 items (referring to the past few months):

Item 10: Have you done anything you wish you hadn't, when you were drunk or high?
Item 23: Have you gotten in trouble when you've been high or have been drinking?

Item 33: Have you used alcohol or drugs to help you feel better?
Item 37: Have you been drunk or high at school?
Item 40: Have you used alcohol and drugs at the same time?
Item 45: Have you been so drunk or high that you couldn't remember what happened?

**FIGURE 13**



Youth may endorse anywhere from 0 to 8 items on the Alcohol/Drug Use scale. Table 19 shows the number and percent of youth answering yes to each possible number of items on the subscale. For example, in juvenile justice settings, 161 youth (14%) answered yes to 0 items. Interestingly, 161 juvenile justice youth (14%) answered yes to all 8 items whereas only 10 youth (1%) in mainstream settings endorsed all 8 items. Youth that are in custody or are at-risk are much more likely than mainstream youth to report multiple symptoms of substance abuse; 60% of youth in juvenile justice settings answered "yes" to 5 or more items.

**TABLE 19**

**Frequencies and Percents of Youth Endorsing Different Numbers of Items on the Alcohol/Drug Use Scale**

| | Juvenile Justice Youth | | High Risk Youth | | Mainstream Youth | |
|---|---|---|---|---|---|---|
| # Items Endorsed | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| 0 | 161 | 14% | 128 | 16% | 667 | 63% |
| 1 | 67 | 6% | 49 | 6% | 108 | 10% |
| 2 | 61 | 5% | 57 | 7% | 68 | 6% |
| 3 | 70 | 6% | 79 | 10% | 59 | 6% |
| 4 | 102 | 9% | 91 | 12% | 52 | 5% |
| 5 | 135 | 12% | 85 | 11% | 39 | 4% |
| 6 | 183 | 16% | 123 | 16% | 35 | 3% |
| 7 | 211 | 18% | 105 | 14% | 24 | 2% |
| 8 | 161 | 14% | 59 | 8% | 10 | 1% |
| Total | 1151 | 100% | 776 | 100% | 1062 | 100% |

The Alcohol/Drug Use subscale had good reliability in this sample of youth (Cronbach's alpha = .89). This means that the questions that constitute this scale tend to be endorsed in clusters—a youth that answers "yes" to one item on the scale is likely to answer "yes" to other items on the scale. One way to see this is to show the degree to which each item on the scale is correlated with the other items on the scale. As shown in Table 20, all the items are moderately to strongly intercorrelated. (The presentation of item 24 is contingent on the answer to item 23, so item 24's correlations with the other items are expected to be lower.). Given the high degree of association between all the items, no one item stands out as the "most" predictive—it is the combination of these items that provide a more descriptive picture of a youth's drug/alcohol problem.

**TABLE 20**
**Correlations Between Alcohol/Drug Use Subscale Items**

| ITEM | 10. Have you done anything you wish you hadn't, when you were drunk or high? | 19. Have your parents or friends thought you drink too much? | 23. Have you gotten in trouble when you've been high or have been drinking? | 24. If yes [to #23], has the trouble been fighting? | 33. Have you used alcohol or drugs to help you feel better? | 37. Have you been drunk or high at school? | 40. Have you used alcohol and drugs at the same time? | 45. Have you been so drunk or high that you couldn't remember what happened? |
|---|---|---|---|---|---|---|---|---|
| # 10 | | 0.36 | 0.54 | 0.32 | 0.46 | 0.43 | 0.43 | 0.44 |
| # 19 | | | 0.36 | 0.32 | 0.34 | 0.32 | 0.33 | 0.36 |
| # 23 | | | | 0.51 | 0.56 | 0.55 | 0.58 | 0.48 |
| # 24 | | | | | 0.36 | 0.37 | 0.34 | 0.29 |
| # 33 | | | | | | 0.51 | 0.55 | 0.46 |
| # 37 | | | | | | | 0.62 | 0.47 |
| # 40 | | | | | | | | 0.47 |

*Differences in Alcohol/Drug Use by Age*

Scores on the Alcohol/Drug Use subscale were analyzed as a function of age. Only 14-18 year olds were included in the analysis as there were only small samples of youth outside this age range. The findings (detailed in Tables 21-23) show that older boys report more substance use than do younger boys. This pattern holds true for each setting (JJ, HR, & MS). For girls, however, we do not find this pattern—at least not to a statistically significant degree—in any of the settings. No matter the setting, a girl's age does not significantly predict her score on the Alcohol/Drug Use Subscale. While the incarcerated girls' mean scores on the Alcohol/Drug Use subscale appear (in Figure 15) to increase generally with age, this pattern is not strong enough to be statistically significant (but note that there were only 5 eighteen-year-old females in Juvenile Justice settings in this sample). There is a trend ($p$ = .055) among girls in

high risk settings toward *younger* girls reporting more substance use than older girls. The effects of age on reported drug and alcohol use (by setting) are depicted separately for males and females in Figures 14 and 15 below and the statistics are reported in Table 20.

**FIGURE 14**

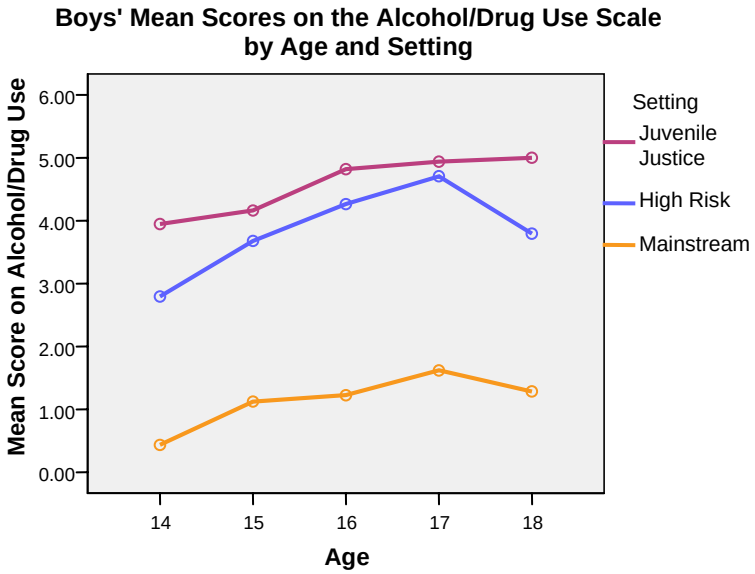



**FIGURE 15**

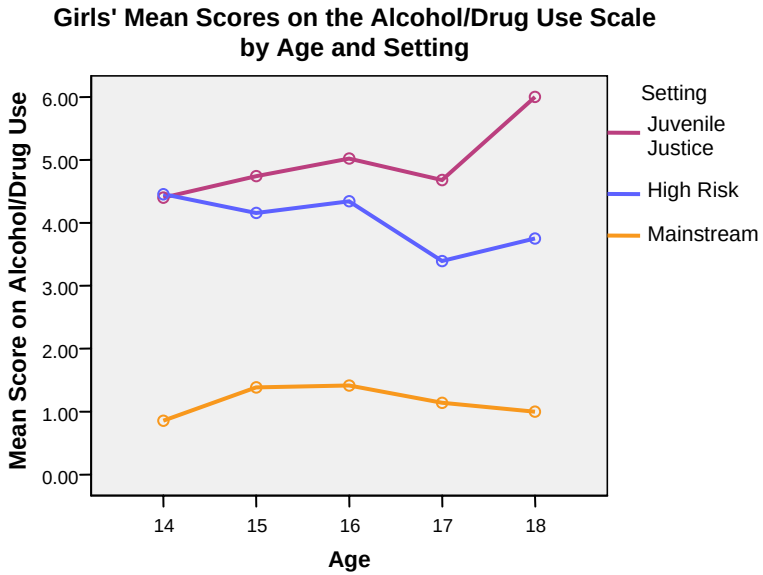



**TABLE 21**

**Relationship Between Age and Score on Alcohol/Drug Use Subscale**

| Sex | Setting | N | Pearson *r* | Sig. | Interpretation |
|---|---|---|---|---|---|
| Male | Juvenile Justice | 954 | 0.125 | $p < .001$ | There is a significant but weak relationship between the variables such that older JJ boys report more substance use. |
| | High Risk | 490 | 0.157 | $p < .001$ | There is a significant but weak relationship between the variables such that older HR boys report more substance use. |
| | Mainstream | 627 | 0.138 | $p = .001$ | There is a significant but weak relationship between the variables such that older MS boys report more substance use. |
| Female | Juvenile Justice | 153 | 0.048 | ns | Reported substance use is not related to age for JJ girls |
| | High Risk | 252 | -0.121 | trend: $p = .055$ | There is a weak, nonsignificant trend toward younger HR girls reporting more substance use. |
| | Mainstream | 420 | 0.032 | ns | Reported substance use is not related to age for MS girls |

Note: "ns" means non-significant at p < .05. JJ refers to Juvenile Justice, HR refers to High Risk and MS refers to Mainstream settings.

## TABLE 22
**Boys' Mean Scores on the Alcohol/Drug Use Subscale**

Alcohol/Drug Use (out of 8)

| Setting | Age | N | Mean | Std. Dev. |
|---|---|---|---|---|
| Juvenile Justice | 13 | 27 | 3.44 | 2.95 |
| | 14 | 75 | 3.95 | 2.86 |
| | 15 | 178 | 4.16 | 2.83 |
| | 16 | 253 | 4.82 | 2.68 |
| | 17 | 360 | 4.94 | 2.53 |
| | 18 | 88 | 5.00 | 2.63 |
| | Total | 981 | 4.66 | 2.70 |
| High Risk | 13 | 9 | 3.11 | 1.76 |
| | 14 | 34 | 2.79 | 2.56 |
| | 15 | 87 | 3.68 | 2.74 |
| | 16 | 155 | 4.26 | 2.48 |
| | 17 | 180 | 4.71 | 2.42 |
| | 18 | 34 | 3.79 | 2.99 |
| | Total | 499 | 4.17 | 2.59 |
| Mainstream | 13[a] | 2 | - | - |
| | 14 | 76 | 0.43 | 1.21 |
| | 15 | 186 | 1.12 | 2.06 |
| | 16 | 133 | 1.23 | 1.88 |
| | 17 | 158 | 1.62 | 2.20 |
| | 18 | 74 | 1.28 | 1.93 |
| | Total | 629 | 1.20 | 1.98 |

Note: Data for 13 year olds are reported here, but was not analyzed.
[a] These values are not reported in this table to protect the confidentiality of the youth's responses (which would be compromised due to the small N for the cell.)

## TABLE 23
**Girls' Mean Scores on the Alcohol/Drug Use Subscale**

Alcohol/Drug Use (out of 8)

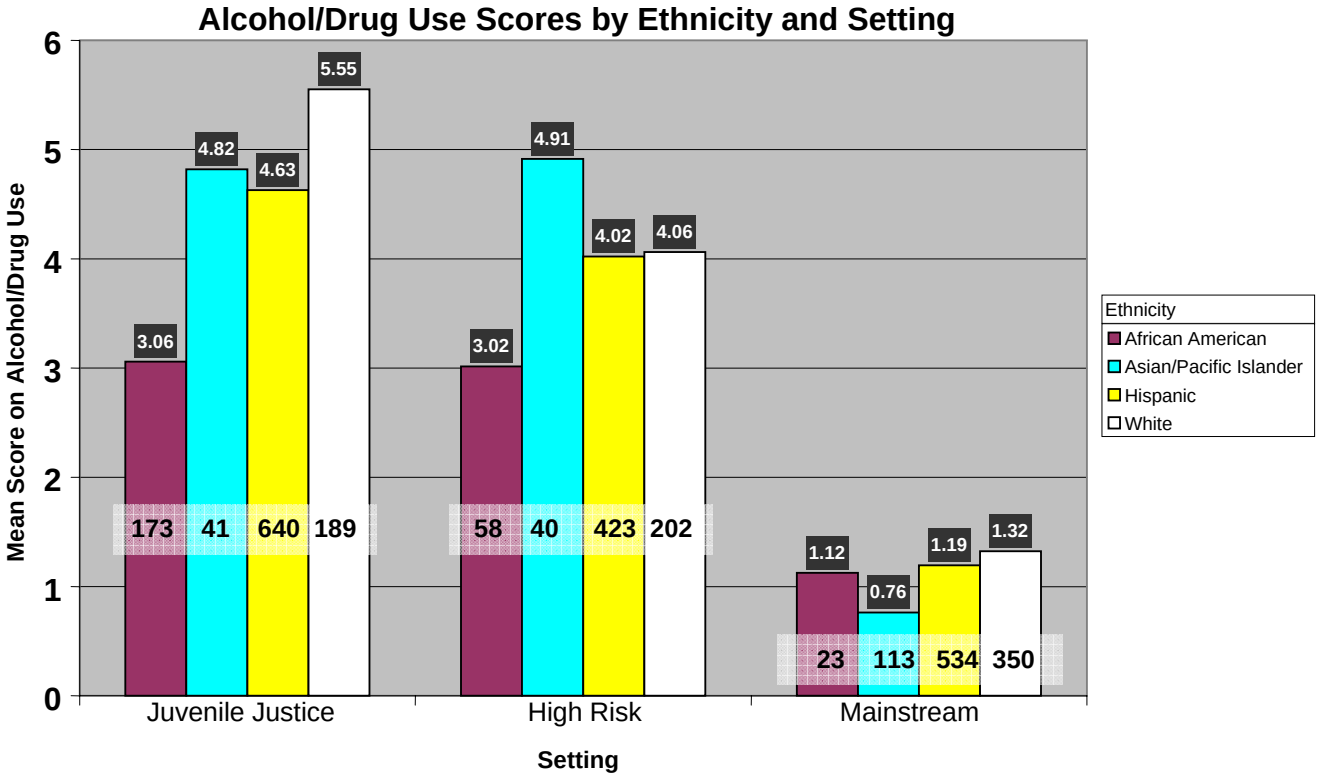
| Setting | Age | N | Mean | Std. Dev. |
|---|---|---|---|---|
| Juvenile Justice | 13 | 7 | 4.00 | 3.27 |
| | 14 | 15 | 4.40 | 3.04 |
| | 15 | 31 | 4.74 | 2.41 |
| | 16 | 49 | 5.02 | 2.52 |
| | 17 | 53 | 4.68 | 2.54 |
| | 18 | 5 | 6.00 | 2.12 |
| | Total | 160 | 4.78 | 2.56 |
| High Risk | 13 | 4 | 4.00 | 2.58 |
| | 14 | 11 | 4.45 | 2.25 |
| | 15 | 51 | 4.16 | 2.44 |
| | 16 | 73 | 4.34 | 2.45 |
| | 17 | 97 | 3.39 | 2.80 |
| | 18 | 20 | 3.75 | 2.75 |
| | Total | 256 | 3.90 | 2.61 |
| Mainstream | 13 [a] | 1 | - | - |
| | 14 | 97 | 0.86 | 1.98 |
| | 15 | 125 | 1.38 | 2.09 |
| | 16 | 99 | 1.41 | 2.24 |
| | 17 | 79 | 1.14 | 1.81 |
| | 18 | 20 | 1.00 | 1.59 |
| | Total | 421 | 1.20 | 2.03 |

Note: Data for 13 year olds are reported here, but was not analyzed.
[a] These values are not reported in this table to protect the confidentiality of the youth's responses (which would be compromised due to the small N for the cell.)

***Ethnicity***

Within the three major setting types, alcohol/drug use was found to vary by ethnicity. Males and females are presented together here as boys' and girls' responses to the alcohol/drug use questions did not differ systematically by ethnic group. Results (see Figure 16) are presented by setting type. It should be noted that some of the bars represent a disproportionately small number of individuals.

**FIGURE 16**




(The black numbers in the bars indicate the number of youth in the category. The white numbers above the bars indicate the mean score on the subscale.)

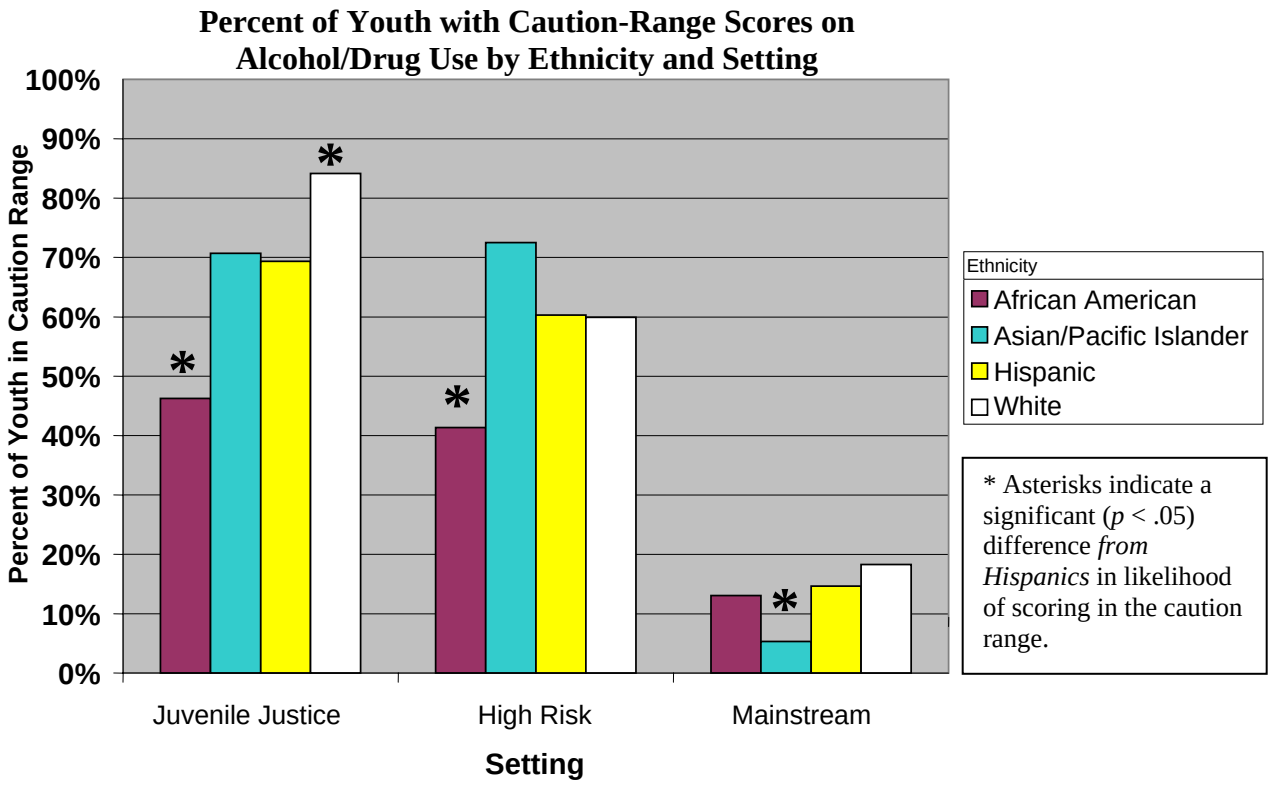
For each setting, the responses vary significantly by ethnic group, but not in the same ways. For example, in the juvenile justice and high risk settings, Asian/Pacific Islanders report higher levels of alcohol and drug use than do African Americans. However, in the mainstream setting, Asian/Pacific Islanders report the least amount of substance use—significantly less than Hispanics and Whites. One interesting finding is that, while among mainstream youth, African Americans report amounts of substance use similar to other ethnic groups, in JJ and HR settings African American youth report significantly less alcohol and drug use than do other ethnic groups. Consistent with Grisso et. al. (2001) this study finds that African American youth in juvenile justice facilities report lower levels of substance use than do other ethnic groups. The detailed findings for ethnic group differences on the Alcohol/Drug Use subscale are summarized in Table 24.

**TABLE 24**
**Differences Among Ethnicities in Alcohol/Drug Use**

| Setting | Significant Findings | Statistics |
|---|---|---|
| Juvenile Justice | Overall effect of ethnicity | Welch (3, 164) = 28.98, $p < .001$ |
| | Whites report more substance use than do Non-Whites (grouped together) | $t = -6.78$, df = 222.63, $p < .001$ |
| | African Americans report less substance use than do non African Americans (grouped together) | $t = 7.06$, df = 227.89, $p < .001$ |
| | Whites report significantly more substance use than do African Americans | $p < .001$, 95% CI: 1.79, 3.16 |
| | Whites report significantly more substance use than do Hispanics | $p < .001$, 95% CI: 0.48, 1.45 |
| | Asian/Pacific Islanders report significantly more substance use than do African Americans | $p = .006$, 95% CI: 0.34, 2.66 |
| High Risk | Overall effect of ethnicity | $F$ (3, 719) = 3.78, $p = .010$ |
| | African Americans report less substance use than do non African Americans (grouped together) | $t = 3.27$, df = 719, $p = .001$ |
| | Asian/Pacific Islanders report significantly more substance use than do African Americans | $p = .016$, 95% CI: 0.23, 3.25 |
| Mainstream | Overall effect of ethnicity | Welch (3, 96) = 4.44, $p = .006$ |
| | While Whites do not report significantly more substance use than the other ethnicities (grouped together) there is a trend in that direction. | $t = -1.85$, df = 62.74, $p = .069$ |
| | Asian/Pacific Islanders report significantly less substance use than do Hispanics | $p = .019$, 95% CI: -0.95, -0.06 |
| | Asian/Pacific Islanders report significantly less substance use than do Whites | $p = .002$, 95% CI: -1.18, -0.20 |

Likelihood of scoring above the clinical cutoff (e.g. in the "caution-range") on the Alcohol/Drug Use scale also varied by ethnicity in this study. Again, patterns among high risk youth are similar to patterns among youth in juvenile justice settings. Each ethnic group was compared to the largest reference group—Hispanics. The analysis reveals that in juvenile justice and mainstream settings, African American youth are significantly less likely score in the caution range on Alcohol/Drug Use. In juvenile justice settings only, White youth are more likely than all other ethnic groups to score in the caution range. But in mainstream settings, only the Asian/Pacific Islander youth differ from Hispanic youth in that they are less likely to score above the clinical cutoff on the Alcohol/Drug Use subscale. African American youth in mainstream settings fall between Asian/Pacific Islanders and Hispanic youth—they do not differ substantially from either in their likelihood of scoring in the caution range. Finally, though it may appear (in Figure 17) that Asian/Pacific Islander youth in HR settings are more likely than the other groups in this setting to score in the caution range on Alcohol/Drug Use, they differ significantly only from African Americans. In summary, the proportions of Hispanic, White, African American and Asian/Pacific Islander youth scoring in the caution range closely resemble the mean differences among these 4 ethnic groups on the Alcohol/Drug Use subscale.

**FIGURE 17**



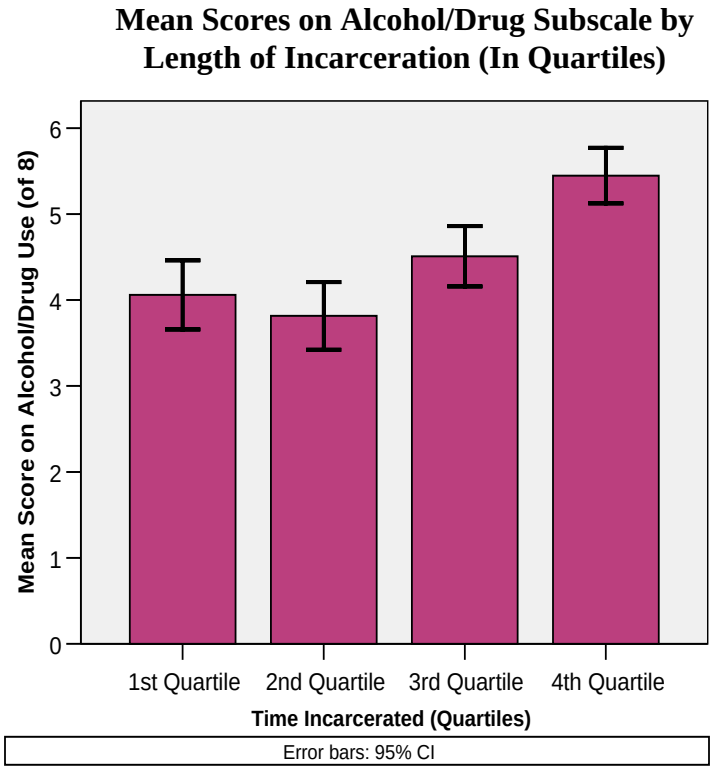

*Time Incarcerated*

The association between scores on the Alcohol/Drug Use subscale and length of incarceration was examined for youth in Juvenile Detention facilities. (Youth, with the assistance of staff, entered the number of days the youth had been continuously incarcerated at the start of the screening.) The correlation between reported substance use and length of incarceration was .18 ($p < .001$) which means that youth incarcerated for longer periods of time are endorsing more items on the Alcohol/Drug Use scale. The correlation is not strong, but it is positive, which is somewhat counterintuitive—one would expect that youth incarcerated for longer periods would have less access to illegal substances and therefore report *less* use. To examine this finding in more detail, the data for incarcerated youth were split into quartiles (with roughly 25% of incarcerated youth falling into each quartile) based on length of time incarcerated:

1st quartile – less than 9 days incarcerated
2nd quartile – 9 to 20 days incarcerated
3rd quartile – 21 to 88 days incarcerated
4th quartile – 89 or more days incarcerated

When analyzed this way, the results show that the average reported amounts of substance use do not differ among the first three quartiles but, as shown in Figure 18 and Table 25 below, the 4th quartile (youth that have been incarcerated for about 3 months or longer) reports significantly more substance use than do the other three quartiles.

**FIGURE 18 and TABLE 25**




➢ The mean scores for the first three quartiles are not significantly different from one another. But the mean score for the 4th quartile (youth incarcerated for 89 days or longer) is significantly higher than the means of the other three quartiles [Welch (3, 452) = 16.39, p

**Mean Scores on the Alcohol/Drug Use Subscale for Youth in Detention Facilities by Length of Incarceration (in Quartiles)**

| | N | Mean | Std. Dev. |
|---|---|---|---|
| Quartile | | | |
| 1 | 202 | 4.06 | 2.90 |
| 2 | 195 | 3.82 | 2.79 |
| 3 | 222 | 4.51 | 2.65 |
| 4 | 206 | 5.45 | 2.35 |
| Total | 825 | 4.47 | 2.74 |

It is plausible that the juvenile justice youth may be misunderstanding or disregarding the instructions in the MAYSI~2 to answer with regard to the "last few months." But the possibility cannot be dismissed that youth are using substances within the facilities. Even the youth incarcerated the longest—the 98 youth incarcerated for 180 days or longer—answered "yes" to an average of 5.23 questions on the Alcohol/Drug Use subscale.

*Grade*

For both High-Risk and Mainstream Schools, mean scores on the Alcohol/Drug Use Subscale were analyzed by grade level. (Schools that did not record students' grade level were excluded from the analysis, as were youth in grades other than 9-12, because there were too few to analyze.)

The correlations between grade level and alcohol/drug use are report in Tables 26 and 27, and Figure 19. Looking first at High-Risk Schools (e.g., court mandated and continuation schools) we see an overall correlation of .12 ($p < .05$) between reported substance use and grade level. However, an analysis of

variance reveals that the relationship between substance use and grade is significantly different for boys than it is for girls [$F$ (3,401) = 3.81, $p < .05$].

**TABLE 26**
**Relationship Between Grade and Score on Alcohol/Drug Use Subscale**

| Sex | Setting | N | Pearson r | Sig. | Interpretation |
|---|---|---|---|---|---|
| Male | High Risk | 256 | 0.235 | p < .001 | There is a weak-to-moderate relationship between the variables such that HR boys report more substance use as they move to higher grades. |
| | Main-stream | 633 | 0.135 | p < .001 | There is a significant but weak relationship between the variables such that MS boys report more substance use as they move to higher grades. |
| Female | High Risk | 153 | -0.080 | ns | Reported substance use is not related to grade for HR girls |
| | Main-stream | 421 | 0.025 | ns | Reported substance use is not related to grade for MS girls |

**FIGURE 19**

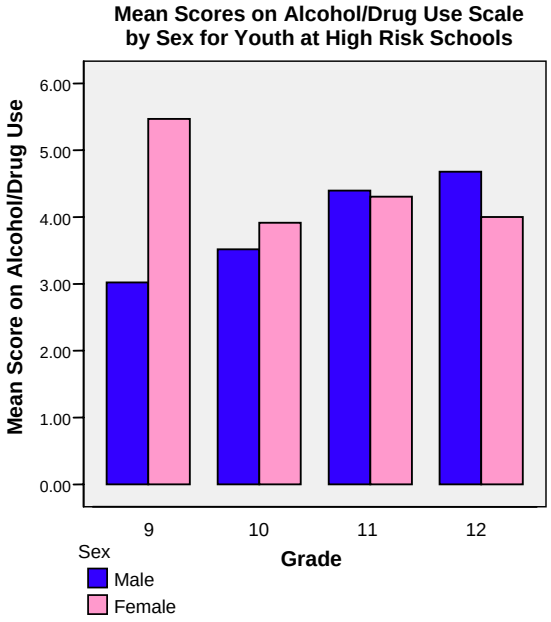



**TABLE 27**

| Alcohol/Drug Use Means by Grade for High Risk Boys and Girls | | | | |
|---|---|---|---|---|
| **Sex** | **Grade** | **Mean** | **Std. Dev.** | **N** |
| Male | 9 | 3.02 | 2.68 | 46 |
| | 10 | 3.52 | 2.63 | 64 |
| | 11 | 4.40 | 2.51 | 81 |
| | 12 | 4.68 | 2.50 | 65 |
| | Total | 4.00 | 2.63 | 256 |
| Female | 9 | 5.47 | 2.29 | 15 |
| | 10 | 3.91 | 2.40 | 47 |
| | 11 | 4.30 | 2.79 | 56 |
| | 12 | 4.00 | 3.06 | 35 |
| | Total | 4.23 | 2.71 | 153 |

Analyzing the sexes separately, we find a significant correlation ($r = .24$, $p < .001$) between the variables only for boys. For girls, grade level does not predict scores on the Alcohol/Drug Use scale, meaning that girls in the lower grades are reporting levels of substance use similar to those reported by upperclassmen. In fact, the mean score for 9$^{th}$ grade girls in HR Schools is more than a point higher than the mean score for girls in all other grades (which means that, on average, a girl in the 9$^{th}$ grade answered "yes" to about one more item on the Alcohol/Drug Use scale than did girls in 10$^{th}$, 11$^{th}$, or 12$^{th}$ grade). The difference was not statistically significant, however, probably because of the small sample size—there were only fifteen 9$^{th}$ grade girls screened in HR Schools.

Among youth in mainstream high schools there is an even weaker (but still significant) overall association between grade and reported substance use [$r = .092$ ($p < .01$)]. Again, splitting the group by sex reveals that there is no association between grade and substance use for girls and the overall correlation is explained by the significant .135 ($p < .01$) correlation between the variables for boys. This means that, in mainstream settings, boys in higher grades tend to report more alcohol and drug use than boys in lower grades. But girls' reported use of substances is consistent across grade level. (See Table 28 and Figure 20 below.)

Generally, the patterns of substance use by grade echo that for age, with boys showing increases with age and grade, while females remain fairly consistent in their levels of reported substance use.

**FIGURE 20**

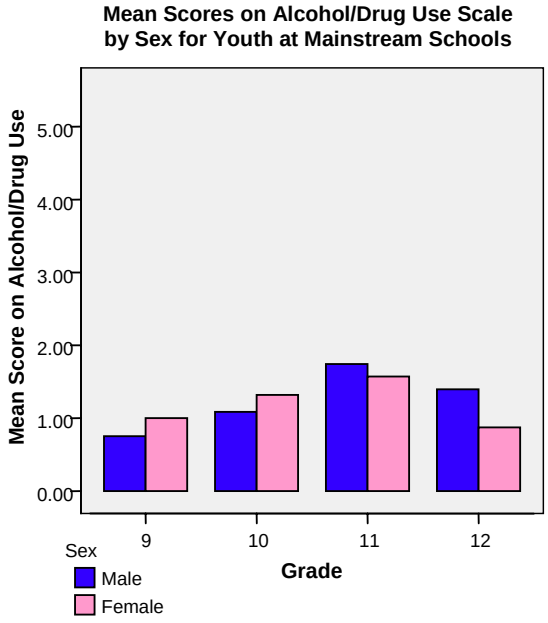



**TABLE 28**

**Alcohol/Drug Use Means by Grade for Mainstream Boys and Girls**

| Sex | Grade | Mean | Std. Dev. | N |
|---|---|---|---|---|
| Male | 9 | 0.75 | 1.63 | 146 |
| | 10 | 1.09 | 1.98 | 185 |
| | 11 | 1.74 | 2.30 | 117 |
| | 12 | 1.39 | 1.96 | 185 |
| | Total | 1.22 | 1.99 | 633 |
| Female | 9 | 1.00 | 1.98 | 141 |
| | 10 | 1.32 | 2.06 | 116 |
| | 11 | 1.57 | 2.25 | 100 |
| | 12 | 0.88 | 1.65 | 64 |
| | Total | 1.20 | 2.03 | 421 |

*Detailed Setting Analysis*

So far, all the analyses have been run with the various participating locations clustered into three groups: JJ, HR and MS. But these clusters can be further broken down as follows:

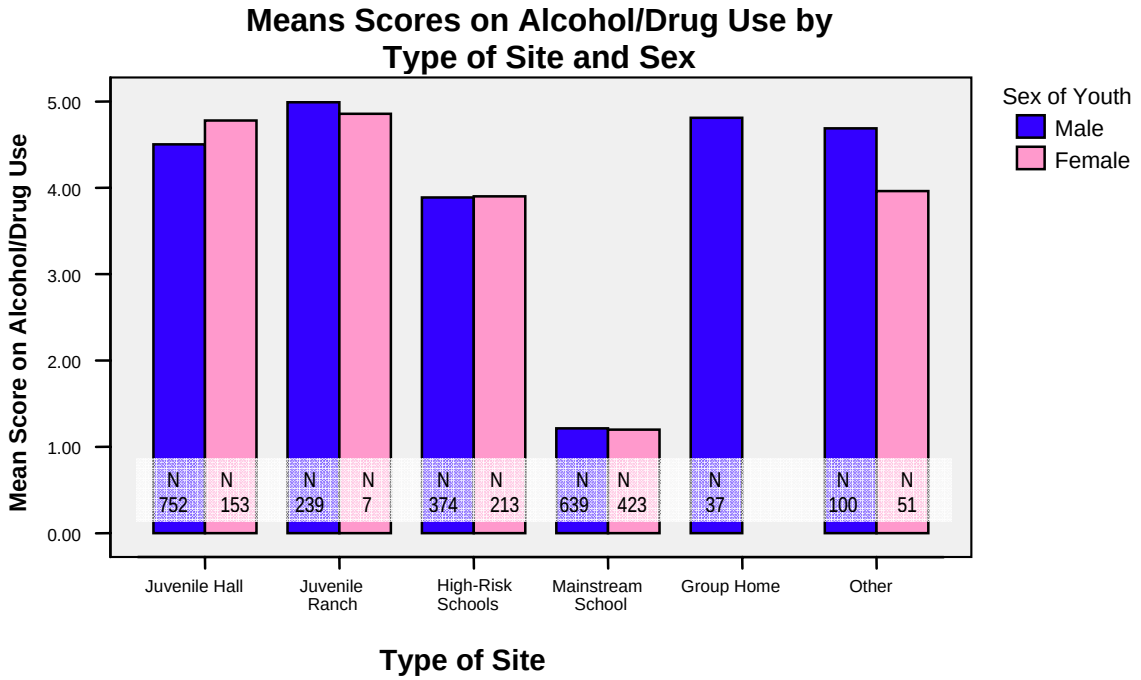
JJ→ Juvenile Halls, Juvenile Ranches
HR→ Court-Mandated/Continuation Schools (HR Schools), Group Homes, and "Other" programs for at-risk youth that are county-specific.
MS→ Mainstream Schools.

Scores on the Alcohol/Drug Use subscale were analyzed by MAYSI~2 administration site using all of the above category types, excluding Group Homes for females because there was only one girl screened in such a setting.

Not surprisingly, there were significant differences among locations in reported levels of substance use (see Figure 21). The patterns of reported substance use were different for boys and girls. For both

sexes, scores for youth in mainstream schools are significantly lower than for youth in all other locations (except for girls in juvenile ranches, but there were only 7 such girls and their means were much higher than means for mainstream girls). For boys, there are differences in the mean scores across the other types of sites as follows: Juvenile Halls and Ranches as well as "other" site types have higher scores than HR Schools but do not differ from each other. For girls, the juvenile ranch means are not statistically different from any other sites' means (even though their mean is high) – the small sample size (7) makes it difficult to find significant differences. For other types of higher risk sites, the differences are as follows: Juvenile Halls have higher average scores on the Alcohol/Drug Use subscale than HR Schools. Youth at "other" site types report significantly more substance use than youth at mainstream schools but do not differ from Juvenile Halls or HR Schools. For the full set of statistics describing these mean comparisons, see Table 33 in the appendix.

**FIGURE 21**




**Summary**

A major finding of the California Statewide Screening is that youth in high risk settings look a lot like youth in juvenile justice settings. Both of these populations (which surely overlap at times) report extremely high levels of substance abuse and mental health problems compared with mainstream youth in the sample and nationwide. Youth in custody or in high risk settings ("at-risk youth") are indistinguishable from one another on the Angry-Irritable, Somatic Complaints, Thought Disturbance (omitting item 26) and Suicidal Ideation subscales of the MAYSI~2. On the Suicidal Ideation subscale, about a third of at-risk youth scored in the caution-range. With regard to the remaining 4 of the 5 gender neutral subscales, the majority of these at-risk youth scored in the clinically significant "caution" range. More than half of at-risk girls reported traumatic life experiences.

Across all three settings—juvenile justice, high risk, and mainstream—girls reported higher levels of internalizing symptoms (depression/anxiety, somatic complaints, and suicidal ideation). But the reverse

was not found for externalizing—girls reported similar (JJ) or higher (HR and MS) levels of anger-irritability compared to boys.

This study found no gender differences with regard to total alcohol and drug use. In each setting examined, boys' and girls' mean scores on the Alcohol/Drug Use scale were equivalent and similar numbers of boys and girls scored in the clinically relevant range. There were some gender differences in the pattern of items endorsed on the subscale, at least among youth in high risk settings.

Age was found to be a better predictor of substance use among males than among females. Across settings, males showed a consistent pattern of alcohol and drug use increasing with age. No distinguishable relationship between age and substance use was found among girls. These findings suggest that, while girls' alcohol and drug use is similar to boys' in quantity and/or frequency, girls may use substances for different reasons or in different ways than boys do. Interventions may need to be tailored to boys' and girls' distinct needs in this area. Furthermore, the results show relatively high levels of substance use among at-risk 14 year olds (especially girls). With previous research demonstrating that early initiation of substance use predicts negative outcomes, including alcohol/drug dependence and delinquent behavior, earlier interventions may be needed. It would be beneficial to screen mainstream youth as well to identify the smaller, but important subset of these youth that report dangerous levels of substance use.

Consistent with previous findings, this study found that, in juvenile justice settings, African American youth are much less likely than other groups to report Alcohol and Drug use. The same pattern held true for high risk settings. Among youth in custody, White adolescents reported the most substance use, followed by Hispanics and Asian/Pacific Islanders, who reported similar amounts of use.

Results also indicate that there was a high degree of overlap between the MAYSI~2 scales which is consistent with the notion that there is a great deal of co-morbidity between alcohol/drug problems and other mental health issues. For example, youths who score high on the alcohol/drug use scale are also likely to score high on the angry/irritable scale, depressed-anxious scale, and suicidal ideation scale.

In summary, the findings suggest that there is a great need among at-risk youth (both juvenile justice and high risk) for substance use and mental health interventions.

## Appendix

## TABLE 29

### Percentage of Juvenile Justice Youth with Caution-Range Scores on the MAYSI~2 Scales

| | Fresno (346/36) | | Los Angeles (105/20) | | Marin (34/3[a]) | | Mariposa[b] (0/0) | | Riverside (184/26) | | Santa Barbara (157/31) | | Santa Clara[b] (0/0) | | Sonoma (97/22) | | Tulare (68/22) | | Total (991/160) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subscale | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M |
| Alcohol/Drug Use | 81 | 73 | 30 | 34 | - | 56 | - | - | 77 | 70 | 81 | 75 | - | - | 64 | 81 | 82 | 65 | 72 | 68 |
| Angry-Irritable | 78 | 71 | 35 | 33 | - | 44 | - | - | 77 | 69 | 74 | 63 | - | - | 59 | 72 | 73 | 59 | 69 | 64 |
| Depressed-Anxious | 81 | 64 | 45 | 39 | - | 38 | - | - | 77 | 60 | 61 | 48 | - | - | 50 | 64 | 86 | 53 | 69 | 56 |
| Somatic Complaints | 83 | 66 | 55 | 39 | - | 44 | - | - | 81 | 58 | 71 | 62 | - | - | 64 | 61 | 77 | 57 | 74 | 59 |
| Suicidal Ideation | 42 | 35 | 35 | 15 | - | 12 | - | - | 54 | 29 | 39 | 26 | - | - | 27 | 28 | 59 | 18 | 43 | 28 |
| Thought Disturbance | 75 | 72 | 30 | 47 | - | 26 | - | - | 77 | 63 | 68 | 57 | - | - | 59 | 67 | 77 | 59 | 67 | 62 |
| Thought Disturbance (no 26) | 47 | 53 | 15 | 25 | - | 18 | - | - | 58 | 47 | 55 | 39 | - | - | 32 | 47 | 64 | 34 | 48 | 44 |
| Traumatic Experiences (M) | | 48 | | 29 | - | 38 | - | - | | 48 | | 32 | - | - | | 57 | | 41 | | 48 |
| Traumatic Experiences (F) | 72 | 51 | 35 | 31 | - | 41 | - | - | 73 | 55 | 35 | 34 | - | - | 82 | 57 | 68 | 51 | 63 | 43 |
| Any Caution | 97 | 95 | 70 | 71 | - | 82 | - | - | 100 | 92 | 100 | 93 | - | - | 77 | 96 | 100 | 93 | 93 | 91 |

Note: M=Male/ F=Female

[a] Marin county's 3 incarcerated females were not included in this table to preserve the confidentiality of their responses.

[b] Neither Mariposa nor Santa Clara counties screened incarcerated youth.

[c] "Any Caution" excludes the Thought Disturbance and Trauma scales so that boys and girls can be compared.

**TABLE 30**

**Percentage of "High Risk" Youth with Caution-Range Scores on the MAYSI~2 Scales**

| | Fresno (12/12) | | Los Angeles (92/50) | | Marin (90/36) | | Mariposa[b] (19/21) | | Riverside (35/0) | | Santa Barbara (56/23) | | Santa Clara[b] (124/85) | | Sonoma[a] (0/0) | | Tulare (83/38) | | Total (511/265) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subscale | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M |
| Alcohol/Drug Use | 58 | 67 | 56 | 72 | 50 | 59 | 52 | 53 | - | 77 | 65 | 59 | 55 | 49 | - | - | 53 | 71 | 55 | 62 |
| Angry-Irritable | 58 | 67 | 66 | 61 | 56 | 50 | 90 | 63 | - | 69 | 70 | 63 | 67 | 49 | - | - | 63 | 69 | 66 | 58 |
| Depressed-Anxious | 67 | 42 | 74 | 49 | 44 | 40 | 86 | 37 | - | 63 | 65 | 43 | 73 | 44 | - | - | 68 | 52 | 69 | 46 |
| Somatic Complaints | 67 | 58 | 74 | 60 | 69 | 57 | 86 | 47 | - | 63 | 70 | 59 | 74 | 50 | - | - | 76 | 59 | 74 | 56 |
| Suicidal Ideation | 25 | 33 | 48 | 20 | 33 | 19 | 43 | 32 | - | 17 | 48 | 29 | 56 | 21 | - | - | 42 | 19 | 46 | 21 |
| Thought Disturbance | 67 | 58 | 58 | 71 | 36 | 49 | 76 | 58 | - | 60 | 70 | 64 | 71 | 53 | - | - | 55 | 60 | 62 | 59 |
| Thought Disturbance (no 26) | 58 | 50 | 42 | 50 | 28 | 31 | 52 | 47 | - | 37 | 61 | 54 | 56 | 35 | - | - | 39 | 46 | 48 | 42 |
| Traumatic Experiences (M) | 50 | 33 | 52 | 45 | 44 | 23 | 67 | 47 | - | 49 | 57 | 25 | 48 | 31 | - | - | 45 | 42 | | 35 |
| Traumatic Experiences (F) | 50 | 25 | 52 | 54 | 53 | 36 | 57 | 47 | - | 57 | 48 | 30 | 48 | 41 | - | - | 47 | 47 | 50 | |
| Any Caution | 75 | 75 | 94 | 91 | 78 | 84 | 100 | 84 | - | 97 | 87 | 93 | 93 | 81 | - | - | 92 | 93 | 90 | 88 |

Note: M=Male/ F=Female

[a] Sonoma county did not screen any youth in this "high risk" category.

[b] "Any Caution" excludes the Thought Disturbance and Trauma scales so that boys and girls can be compared.

**TABLE 31**

**Percentage of Mainstream Youth with Caution-Range Scores on the MAYSI~2 Scales**

| | Fresno (0/0)[a] | | Los Angeles (0/0)[a] | | Marin (0/0)[a] | | Mariposa (48/53) | | Riverside (0/0)[a] | | Santa Barbara (0/0)[a] | | Santa Clara (591/370) | | Sonoma (0/0)[a] | | Tulare (0/0)[a] | | Total (639/423) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subscale | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M |
| Alcohol/Drug Use | - | - | - | - | - | - | 19 | 35 | - | - | - | - | 15 | 13 | - | - | - | - | 15 | 15 |
| Angry-Irritable | - | - | - | - | - | - | 57 | 38 | - | - | - | - | 51 | 29 | - | - | - | - | 52 | 28 |
| Depressed-Anxious | - | - | - | - | - | - | 57 | 19 | - | - | - | - | 58 | 28 | - | - | - | - | 58 | 28 |
| Somatic Complaints | - | - | - | - | - | - | 85 | 46 | - | - | - | - | 65 | 40 | - | - | - | - | 67 | 40 |
| Suicidal Ideation | - | - | - | - | - | - | 36 | 4 | - | - | - | - | 35 | 16 | - | - | - | - | 35 | 15 |
| Thought Disturbance | - | - | - | - | - | - | 58 | 38 | - | - | - | - | 59 | 42 | - | - | - | - | 59 | 42 |
| Thought Disturbance (no 26) | - | - | - | - | - | - | 23 | 33 | - | - | - | - | 42 | 30 | - | - | - | - | 40 | 30 |
| Traumatic Experiences (M) | - | - | - | - | - | - | 43 | 19 | - | - | - | - | 25 | 12 | - | - | - | - | | 13 |
| Traumatic Experiences (F) | - | - | - | - | - | - | 34 | 27 | - | - | - | - | 22 | 17 | - | - | - | - | 23 | |
| Any Caution | - | - | - | - | - | - | 91 | 81 | - | - | - | - | 83 | 70 | - | - | - | - | 84 | 71 |

Note: M=Male/ F=Female

[a] These counties did not screen youth in mainstream schools.

[b] "Any Caution" excludes the Thought Disturbance and Trauma scales so that boys and girls can be compared.

**TABLE 32**
**Percentage of Youth with Caution-Range Scores in Thought Disturbance, Before and After Omitting Item 26**

| TABLE 32a | Original Scale | | Item 26 Omitted | |
|---|---|---|---|---|
| Juvenile Justice Youth | M | F | M | F |
| All Juvenile Facilities (991/160) | 62 | 67 | 44 | 48 |
| Fresno (346/36) | 72 | 75 | 53 | 47 |
| Los Angeles (105/20) | 47 | 30 | 25 | 15 |
| Marin (34/3a) | 27 | - | 18 | - |
| Mariposa (0/0) | - | - | - | - |
| Riverside (184/26) | 63 | 77 | 47 | 60 |
| Sta Barbara (157/31) | 57 | 68 | 40 | 55 |
| Sta Clarab (0/0) | - | - | - | - |
| Sonoma (97/22) | 67 | 59 | 47 | 32 |
| Tulare (68/22) | 59 | 77 | 34 | 64 |

[a] Marin county's 3 incarcerated females were not included in this table to preserve the confidentiality of their responses.

| TABLE 32b | Original Scale | | Item 26 Omitted | |
|---|---|---|---|---|
| High Risk Youth | M | F | M | F |
| All High Risk Sites (511/265) | 59 | 62 | 42 | 48 |
| Fresno (12/12) | 58 | 67 | 50 | 58 |
| Los Angeles (92/50) | 71 | 58 | 50 | 42 |
| Marin (90/36) | 49 | 36 | 31 | 28 |
| Mariposa (19/21) | 58 | 76 | 47 | 52 |
| Riverside (35/0) | 60 | - | 37 | - |
| Sta Barbara (56/23) | 64 | 70 | 54 | 61 |
| Sta Clara (124/85) | 53 | 71 | 36 | 57 |
| Sonoma a (0/0) | - | - | - | - |
| Tulare (83/38) | 60 | 55 | 46 | 40 |

| TABLE 32c | Original Scale | | Item 26 Omitted | |
|---|---|---|---|---|
| Mainstream Youth | M | F | M | F |
| All Mainstream (639/423) | 42 | 59 | 30 | 40 |
| Fresno (0/0) | - | - | - | - |

| | | | | |
|---|---|---|---|---|
| Los Angeles (0/0) | - | - | - | - |
| Marin (0/0) | - | - | - | - |
| Mariposa (48/53) | 38 | 59 | 33 | 27 |
| Riverside (0/0) | - | - | - | - |
| Sta Barbara (0/0) | - | - | - | - |
| Sta Clara (591/370) | 42 | 59 | 30 | 42 |
| Sonoma (0/0) | - | - | - | - |
| Tulare (0/0) | - | - | - | - |

**TABLE 33**
**Mean Comparisons Among Types of Sites for the Alcohol/Drug Use Subscale**

| Sex | (I) Type of Site | (J) Type of Site | | Mean Difference (I-J) | Sig. | 95% CI | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| 1 Male | 1.00 Juvenile Hall | 2.00 Juvenile Ranch | | -0.49 | 0.117 | -1.04 | 0.06 |
| Games-Howell | | 3.00 High-Risk Schools | * | 0.62 | 0.004 | 0.14 | 1.10 |
| | | 4.00 Mainstream School | * | 3.29 | 0.000 | 2.93 | 3.66 |
| | | 5.00 Group Home | | -0.31 | 0.977 | -1.57 | 0.96 |
| | | 6.00 Other (high risk) | | -0.19 | 0.983 | -0.97 | 0.60 |
| | 2.00 Juvenile Ranch | 1.00 Juvenile Hall | | 0.49 | 0.117 | -0.06 | 1.04 |
| | | 3.00 High-Risk Schools | * | 1.10 | 0.000 | 0.50 | 1.71 |
| | | 4.00 Mainstream School | * | 3.78 | 0.000 | 3.26 | 4.30 |
| | | 5.00 Group Home | | 0.18 | 0.998 | -1.13 | 1.49 |
| | | 6.00 Other (high risk) | | 0.30 | 0.916 | -0.56 | 1.17 |
| | 3.00 High-Risk Schools | 1.00 Juvenile Hall | * | -0.62 | 0.004 | -1.10 | -0.14 |
| | | 2.00 Juvenile Ranch | * | -1.10 | 0.000 | -1.71 | -0.50 |
| | | 4.00 Mainstream School | * | 2.67 | 0.000 | 2.23 | 3.12 |
| | | 5.00 Group Home | | -0.92 | 0.287 | -2.21 | 0.36 |
| | | 6.00 Other (high risk) | | -0.80 | 0.061 | -1.63 | 0.02 |
| | 4.00 Mainstream School | 1.00 Juvenile Hall | * | -3.29 | 0.000 | -3.66 | -2.93 |
| | | 2.00 Juvenile Ranch | * | -3.78 | 0.000 | -4.30 | -3.26 |
| | | 3.00 High-Risk Schools | * | -2.67 | 0.000 | -3.12 | -2.23 |
| | | 5.00 Group Home | * | -3.60 | 0.000 | -4.85 | -2.35 |
| | | 6.00 Other (high risk) | * | -3.48 | 0.000 | -4.24 | -2.71 |
| | 5.00 Group Home | 1.00 Juvenile Hall | | 0.31 | 0.977 | -0.96 | 1.57 |
| | | 2.00 Juvenile Ranch | | -0.18 | 0.998 | -1.49 | 1.13 |
| | | 3.00 High-Risk Schools | | 0.92 | 0.287 | -0.36 | 2.21 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 4.00 Mainstream School | * | 3.60 | 0.000 | 2.35 | 4.85 |
| | | 6.00 Other (high risk) | | 0.12 | 1.000 | -1.29 | 1.53 |
| | 6.00 Other (increased risk youth) | 1.00 Juvenile Hall | | 0.19 | 0.983 | -0.60 | 0.97 |
| | | 2.00 Juvenile Ranch | | -0.30 | 0.916 | -1.17 | 0.56 |
| | | 3.00 High-Risk Schools | | 0.80 | 0.061 | -0.02 | 1.63 |
| | | 4.00 Mainstream School | * | 3.48 | 0.000 | 2.71 | 4.24 |
| | | 5.00 Group Home | | -0.12 | 1.000 | -1.53 | 1.29 |
| 2 Female | 1.00 Juvenile Hall | 2.00 Juvenile Ranch | | -0.08 | 1.000 | -3.76 | 3.60 |
| Games-Howell | | 3.00 High-Risk Schools | * | 0.88 | 0.015 | 0.12 | 1.64 |
| | | 4.00 Mainstream School | * | 3.58 | 0.000 | 2.95 | 4.21 |
| | | 6.00 Other (high risk) | | 0.82 | 0.212 | -0.24 | 1.88 |
| | 2.00 Juvenile Ranch | 1.00 Juvenile Hall | | 0.08 | 1.000 | -3.60 | 3.76 |
| | | 3.00 High-Risk Schools | | 0.96 | 0.867 | -2.73 | 4.64 |
| | | 4.00 Mainstream School | | 3.66 | 0.052 | -0.04 | 7.35 |
| | | 6.00 Other (high risk) | | 0.90 | 0.902 | -2.77 | 4.56 |
| | 3.00 High-Risk Schools | 1.00 Juvenile Hall | * | -0.88 | 0.015 | -1.64 | -0.12 |
| | | 2.00 Juvenile Ranch | | -0.96 | 0.867 | -4.64 | 2.73 |
| | | 4.00 Mainstream School | * | 2.70 | 0.000 | 2.13 | 3.27 |
| | | 6.00 Other (high risk) | | -0.06 | 1.000 | -1.09 | 0.97 |
| | 4.00 Mainstream School | 1.00 Juvenile Hall | * | -3.58 | 0.000 | -4.21 | -2.95 |
| | | 2.00 Juvenile Ranch | | -3.66 | 0.052 | -7.35 | 0.04 |
| | | 3.00 High-Risk Schools | | -2.70 | 0.000 | -3.27 | -2.13 |
| | | 6.00 Other (high risk) | * | -2.76 | 0.000 | -3.71 | -1.82 |
| | 6.00 Other (increased risk youth) | 1.00 Juvenile Hall | | -0.82 | 0.212 | -1.88 | 0.24 |
| | | 2.00 Juvenile Ranch | | -0.90 | 0.902 | -4.56 | 2.77 |
| | | 3.00 High-Risk Schools | | 0.06 | 1.000 | -0.97 | 1.09 |
| | | 4.00 Mainstream School | * | 2.76 | 0.000 | 1.82 | 3.71 |

* The mean difference is significant at the .05 level.

**TABLE 34**

**Mean Score Comparisons by Setting for All Subscales**

| | | N | Mean | Std. Deviation | 95% Confidence Interval for Mean | | |
|---|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound | Groups* |
| Alcohol/Drug Use | Juvenile Justice | 1151 | 4.64 | 2.70 | 4.49 | 4.80 | a |
| | High Risk | 776 | 4.04 | 2.61 | 3.86 | 4.22 | b |
| | Mainstream | 1062 | 1.21 | 2.00 | 1.09 | 1.33 | c |
| | Total | 2989 | 3.27 | 2.89 | 3.16 | 3.37 | |
| Angry-Irritable | Juvenile Justice | 1151 | 5.38 | 2.84 | 5.22 | 5.54 | a |
| | High Risk | 776 | 5.10 | 2.61 | 4.92 | 5.29 | a |
| | Mainstream | 1062 | 3.75 | 2.58 | 3.60 | 3.91 | c |
| | Total | 2989 | 4.73 | 2.79 | 4.63 | 4.83 | |
| Depressed-Anxious | Juvenile Justice | 1151 | 3.40 | 2.41 | 3.27 | 3.54 | a |
| | High Risk | 776 | 3.13 | 2.37 | 2.96 | 3.29 | b |
| | Mainstream | 1062 | 2.39 | 2.12 | 2.27 | 2.52 | c |
| | Total | 2989 | 2.97 | 2.34 | 2.89 | 3.06 | |
| Somatic Complaints | Juvenile Justice | 1151 | 3.15 | 1.90 | 3.04 | 3.26 | a |
| | High Risk | 776 | 3.11 | 1.86 | 2.98 | 3.25 | a |
| | Mainstream | 1062 | 2.65 | 1.81 | 2.54 | 2.76 | c |
| | Total | 2989 | 2.96 | 1.87 | 2.90 | 3.03 | |
| Suicidal Ideation | Juvenile Justice | 1151 | 1.16 | 1.65 | 1.07 | 1.26 | a |
| | High Risk | 776 | 1.16 | 1.64 | 1.04 | 1.28 | a |
| | Mainstream | 1062 | 0.89 | 1.45 | 0.80 | 0.97 | c |
| | Total | 2989 | 1.06 | 1.59 | 1.01 | 1.12 | |
| Thought Disturbances | Juvenile Justice | 991 | 1.31 | 1.40 | 1.23 | 1.40 | a |
| | High Risk | 511 | 1.09 | 1.22 | 0.99 | 1.20 | b |
| | Mainstream | 639 | 0.76 | 1.15 | 0.67 | 0.85 | c |
| | Total | 2141 | 1.10 | 1.31 | 1.04 | 1.15 | |
| Thought Disturbances no 26 | Juvenile Justice | 991 | 0.82 | 1.12 | 0.75 | 0.89 | a |
| | High Risk | 511 | 0.69 | 0.97 | 0.61 | 0.78 | a |
| | Mainstream | 639 | 0.49 | 0.89 | 0.42 | 0.56 | c |
| | Total | 2141 | 0.69 | 1.03 | 0.65 | 0.73 | |
| Traumatic Experiences -Male | Juvenile Justice | 991 | 2.16 | 1.37 | 2.07 | 2.24 | a |
| | High Risk | 511 | 1.97 | 1.27 | 1.86 | 2.08 | b |
| | Mainstream | 639 | 1.17 | 1.18 | 1.07 | 1.26 | c |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Total | 2141 | 1.82 | 1.36 | 1.76 | 1.87 | |
| Traumatic Experiences - Female | Juvenile Justice | 160 | 2.94 | 1.80 | 2.66 | 3.22 | a |
| | High Risk | 265 | 2.49 | 1.66 | 2.29 | 2.69 | b |
| | Mainstream | 423 | 1.47 | 1.41 | 1.33 | 1.60 | c |
| | Total | 848 | 2.06 | 1.69 | 1.95 | 2.18 | |

* For each subscale, settings that have significantly different means are ascribed a unique letter ('a', 'b', or 'c') while settings where the means do not differ significantly are ascribed the same letter. Also, gender-specific scales are calculated only for the relevant sex and are color coded blue for boys and purple for girls.

**TABLE 35**

**Percentages of Youth Scoring in the Caution Range on the MAYSI~2 Subscales**

| Scale | Juvenile Justice | | High Risk | | Mainstream | |
|---|---|---|---|---|---|---|
| | % in Caution Range | Std. Dev. | % in Caution Range | Std. Dev. | % in Caution Range | Std. Dev. |
| Alcohol/Drug Use* | 69% | 46% | 60% | 49% | 15% | 36% |
| Angry-Irritable | 64% | 48% | 61% | 49% | 38% | 49% |
| Depressed-Anxious | 58% | 49% | 54% | 50% | 40% | 49% |
| Somatic Complaints | 61% | 49% | 62% | 48% | 51% | 50% |
| Suicidal Ideation | 30% | 46% | 30% | 46% | 23% | 42% |
| Traumatic Experiences - Male* | 43% | 50% | 35% | 48% | 13% | 33% |
| Traumatic Experiences - Female* | 62% | 49% | 50% | 50% | 23% | 42% |
| Thought Disturbance | 62% | 48% | 59% | 49% | 42% | 49% |
| Thought Disturbance no 26 | 44% | 50% | 42% | 49% | 30% | 46% |

Note: Mainstream youth's percentages differ from HR and JJ youths' on every subscale ($p < .001$).
Asterisks indicate scales on which JJ youths' percentages differ significantly from HR youths' ($p < .05$).
Gender-specific scales include only the relevant gender's results.

**References**

Cauffman, E. (2004). A statewide screening of mental health symptoms among juvenile offenders in detention. *Journal of the American Academy of Child & Adolescent Psychiatry*, *43*(4), 430-9.

Cauffman, E, Feldman, SS, Waterman, J, et al. (1998). Posttraumatic stress disorder among female juvenile offenders. *Journal of the American Academy of Child & Adolescent Psychiatry, 37*(11), 1209-16.

Evans, W., Albers, E., Macari, D., & Mason, A. (1996). Suicide ideation, attempts and abuse among incarcerated gang and nongang delinquents. *Child and Adolescent Social Work Journal, 13*(1), 115-126.

Grisso T., Barnum R., Fletcher K.E., Cauffman E., Peuschold D. (2001). Massachusetts Youth Screening Instrument for mental health needs of juvenile justice youths. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*(5), 541-8.

Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2006). Monitoring the Future national results on adolescent drug use: Overview of key findings, 2005 (NIH Publication No. 06-5882). Bethesda, MD: National Institute on Drug Abuse.

Kazdin A (2000), Adolescent development, mental disorders, and decision making of delinquent youths. In: Youth on Trial, Grisso T., Schwartz R., eds. Chicago: University of Chicago Press, 33–65.

Marsteller, F.A., Brogan, D., Smith, I., Ash, P., Daniels, D., Rolka, D., and Falek, A. (1997). *The Prevalence of Substance Use Disorders Among Juveniles Admitted to Regional Youth Detention Centers Operated by the Georgia Department of Children and Youth Services.* Center for Substance Abuse Treatment Final Report: Rockville, MD

Otto, R., Greenstein, J., Johnson, M., Friedman, R. (1992) Prevalence of Mental Disorders Among Youth in the Juvenile Justice System. In Cocozza, J. (Ed.) Responding to the Mental Health Needs of Youth in the Juvenile Justice System. Seattle , WA : National Coalition for the Mentally Ill in the Criminal Justice System.

Prescott, L. (1998). Improving Policy and Practice for Adolescent Girls with Co-occurring Disorders in the Juvenile Justice System. GAINS Center: Delmar, NY.

Puzzanchera, C., Finnegan, T. and Kang, W. (2006). “Easy Access to Juvenile Populations,” http://www.ojjdp.ncjrs.org/ojstatbb/ezapop/

Snyder, H. (1998). Juvenile arrests 1997. *Juvenile Justice Bulletin*. OJJDP: Washington, DC.

Teplin, L., Abram, K., McClelland, G., Dulcan, M., Mericle, A. (2002) Psychiatric Disorders in Youth in Juvenile Detention. *Archives of General Psychiatry*, *59*(12), 1133-1143.

Wright, D., Sathe, N. (2006). State Estimates of Substance Use from the 2003–2004 National Surveys on Drug Use and Health (DHHS Publication No. SMA 06-4142, NSDUH Series H-29). Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies.