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Executive Summary

National trends in adolescent substance use are encouraging. According to 2004 data from Monitoring the Future, a national survey of 8th, 10th and 12th graders, cigarette, alcohol, and drug use decreased or remained stable from 2003 to 2004 with the exception of an increase in cocaine use among 10th graders. Cigarette smoking decreased among 10th graders, alcohol use remained the same for all grades, and marijuana used decreased significantly for 8th graders (NIDA, 2005).

Despite these improvements, many school-aged youth continue to engage in behaviors that put them at risk for injury, disease, and loss of life. Nationwide, the majority of deaths among those ages 10-24 can be attributed to only four causes: motor vehicle crashes (32.3%), homicide (15.1%), suicide (11.7%), and other unintentional injuries (11.7%) (CDC, 2004). In 2003, 25% of drivers ages 15-20 who died in automobile accidents had a blood alcohol count of 0.08 g/dl or higher (National Highway Traffic Safety Administration, 2004). Moreover, alcohol abuse can result in family dysfunction, job loss, and overall loss of quality of life. Tobacco use, which for most adults begins in adolescence, is the leading preventable cause of death in the United States, and every year causes more than 440,000 deaths (CDC, 2005).

Every even year since 2000, the Missouri Department of Mental Health (DMH) has conducted a survey to monitor the risk behaviors of youth in grades 6, 8, 10, and 12. The 2000 Missouri Student Survey administration, conducted by Research Triangle Institute, was part of a SAMHSA grant. Since then the DMH has contracted with the Missouri Institute of Mental Health (MIMH) to conduct the survey. In the 2004 administration of the Missouri Student Survey, the DMH and the Missouri Department of Elementary and Secondary Education (DESE), which in previous years conducted its own survey, joined together to monitor the risk behaviors of middle and high school students in public schools in the state. This report gives the results of the 2004 joint Missouri Student Survey showing trends in health-related behaviors of students in the state. This executive summary highlights this year's key findings.

Study Sample

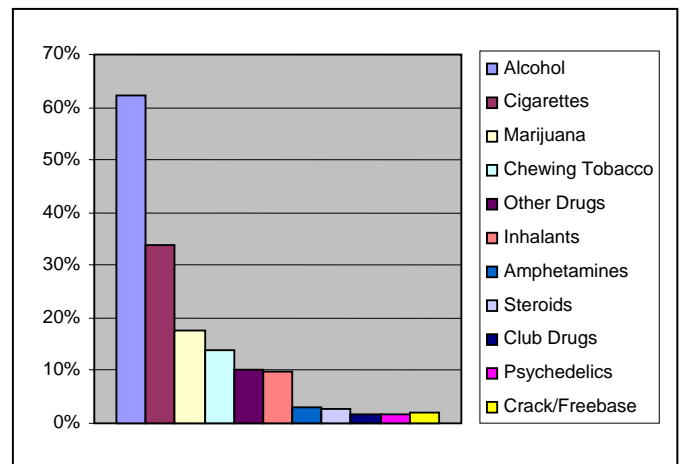
The final sample size includes approximately 45,000 middle/junior and high school aged youth. All school districts were asked to survey their 9th grade students and one additional even-numbered middle/junior or high school grade. Around one-quarter of the sample were 9th graders. Because some school districts opted not to participate, and this was the first year a full census of 9th graders was sampled, and a web-based survey was used, the report does not contain comparisons with 2002 data.

Substance Use

Lifetime Use

- **Alcohol**, was the substance used most often by youth, followed by **cigarettes** and **marijuana**.
- More than half of the youth reported that they had consumed alcohol at some time in their lifetime; approximately one-third reported having smoked a cigarette at some time, and a little less than one-fifth reported using marijuana. Lifetime use of all other illegal drugs was negligible.

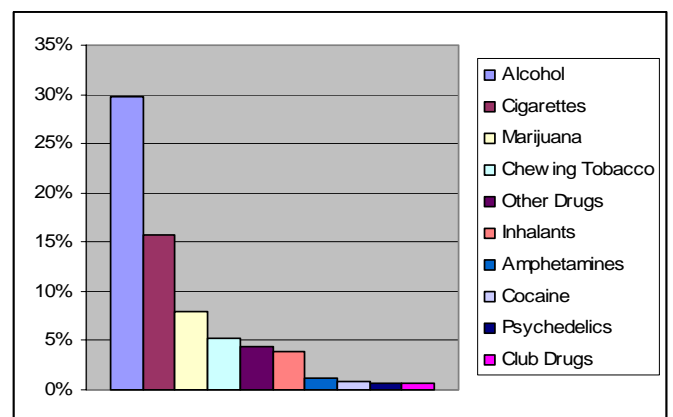
Figure 1. Percentage of Youth Indicating Lifetime Use of Drugs



30-Day Use

- Youth reported the highest 30-day use of **alcohol**, followed by **cigarettes** and then **marijuana**.

Figure 2. Percentage of 30-Day Use of All Substances



- **Alcohol.** Thirty-percent of all youth reported using alcohol in the past 30 days; around half of all 11th and 12th graders reported having used in the past 30 days.

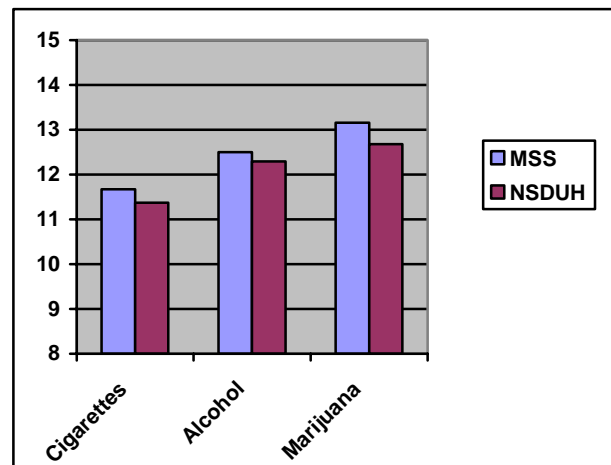
- 13.5% of all students indicated they drank five or more drinks in a row within the past two weeks.
- 16.3% of all 9th graders reported drinking five or more drinks in a row within the past two weeks.
- Almost four-in-ten 12th grade males, and three-in-ten 12th grade females, reported drinking *five or more drinks in a row* in the past two weeks.
- Comparisons with national data indicate that 30-day alcohol use is slightly higher in Missouri than national averages.
- Patterns of drinking suggest that most youth do not drink on a daily basis if they do drink. Less than 2% of youth across all grade levels reported drinking alcohol *every day* of the month.
- Around one-quarter (23.4%) of the students indicated they had been a passenger in a vehicle which was being driven by someone who had been drinking alcohol. This compares to a national average for teenagers of 30% (CDC, 2004). Percentages were higher in rural areas sampled.
- 6% of youth reported driving an automobile while drinking within the past 30 days. The national average for teens was 13% in 2004 (CDC, 2004).

Cigarettes. Cigarettes are the second most prevalent drug of choice, with a little more than 15% of the sample reporting that they had smoked in the past 30 days.

Age of Initiation

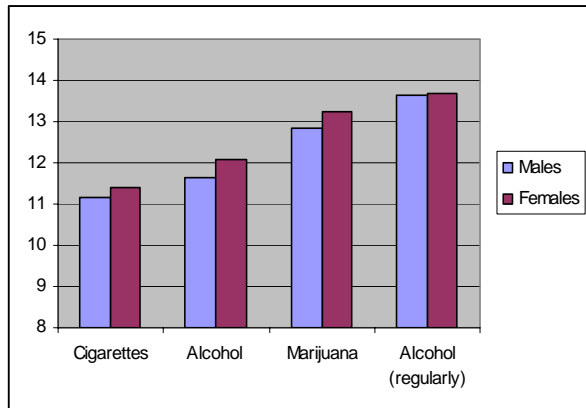
Cigarette use began earlier than other substances followed by alcohol (more than a sip), marijuana, and alcohol (regularly). The average age of initiation for cigarette use was 11.48; 12.17 for alcohol use; and 13.14 for marijuana use. When comparing Missouri youth to youth surveyed in the National Survey on Drug Use and Health (NSDUH), the age of initiation is slightly higher in Missouri (NSDUH, 2005). Across all substances, males started using sooner than females.

Figure 3. Average Age of Initiation for Substance Use: MSS and NSDUH Samples: 15-year-Olds



NOTE: Only 15-year-olds were selected from both samples to accurately compare across the two sampling frames.

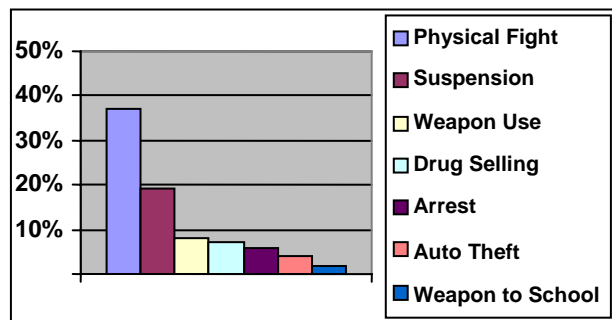
Figure 4. Average Age of Initiation for Substance Use in Missouri: 15-year old Males and Females



Anti-Social Behaviors

- The most frequent anti-social behavior reported was physical fighting, followed by suspensions from school.
- Antisocial behaviors, especially engaged in physical fights, were higher among males than females.
- Metropolitan/rural differences were less pronounced once other factors were considered.

Figure 5. Percentage of Youth Reporting Anti-Social Behaviors in the Past Year

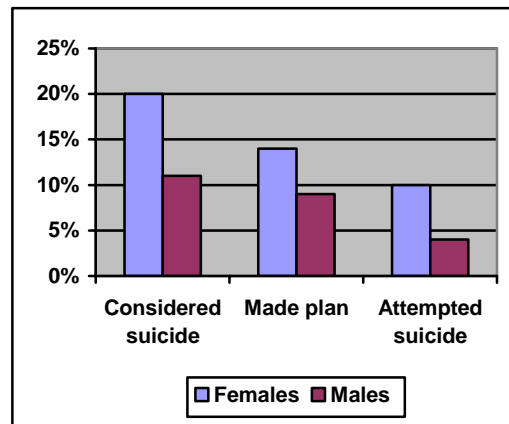


Suicide

Almost one in five (16%) of the youth sampled said they had seriously considered attempting suicide in the past year. 12% said they had made a plan to commit suicide, and 7% said they had tried to commit suicide.

- Percentages for suicide were highest in 8th and 9th grade.
- Females were much more likely to have suicidal thoughts than males.
- Females whose parents were less educated were even more likely to consider suicide.

Figure 6. Percentage of Students with Suicidal Thoughts by Gender



- Youth living in homes with a high degree of family conflict were more likely to have tried to commit suicide than youth in homes with less conflict.

Individual and Peer Risk Protective Factors

The MSS explored seven individual and peer risk and protective factors shown to be linked to substance use.

Anti-Social Attitudes. The majority of youth felt it was wrong to engage in anti-social behaviors, such as stealing, skipping school, and picking fights. Males were more tolerant of antisocial behaviors than females, and youth in the Eastern (metropolitan St. Louis) region held more anti-social attitudes than youth in other regions of the state.

Rebelliousness. Rebellious attitudes were higher among older youth, among youth whose parents were less educated, and among males. The percentage of youth who approved of cheating went from a little more than 10% of 6th graders to around 50% of all high school youth.

Drug Use Attitudes. Approval of drugs increased by age, was higher among males than females, and higher in metropolitan areas than rural areas.

Perceived Risk of Drug Use. Students perceived alcohol to be least dangerous of all legal and illegal drugs. Cigarettes were perceived to be next least harmful, followed by marijuana. Youth perceived regular use of all of the illegal drugs to be very harmful. Females, rural students, and younger students perceived substance use to be more harmful than their counterparts.

Peer Rewards for Antisocial Involvement. When asked about their perceptions of Peer Rewards for Antisocial Involvement a low

percentage of youth felt that use of any drugs or carrying a gun would be “cool”. Alcohol use was seen as more “cool” than use of cigarettes, marijuana or carrying a gun.

Family Risk and Protective Factors

Six risk factors and two protective factors measured family attitudes and behaviors known to be related to adolescent substance abuse and other related behaviors.

- Family factors were weaker among high-school students than middle/junior high students. High school youth perceived their parents to offer less supervision than middle/junior high school youth, and their parents were more accepting of, and parents offered fewer opportunities and rewards for involvement.
- Generally, youth in rural areas perceived their families to be better managed, less anti-social, to have less family conflict, less of a history of antisocial behaviors, to have more opportunities for parental involvement and more reward for parental involvement.
- Females tended to report more positive family factors than males.

School Risk and Protective Factors

School-related risk and protective factors included academic performance, absenteeism, school commitment,

opportunities for school involvement, and rewards for school involvement.

Academic Performance. Most youth reported receiving mostly “A’s” or “B’s”. Females reported higher grades than males.

- Youth who reported fighting were more likely to have lower grades.
- Youth who reported smoking cigarettes in the past 30 days were *much more likely* to report having lower grades than youth who reported 30-day alcohol use, binge drinking, marijuana use, or attempted suicide.

Absenteeism. Almost half (42.8%) of youth reported missing one or more days due to illness. Females were more likely to miss school due to illness than males. 17.1% of youth reported missing one or more days because they had skipped or cut school.

School Commitment. Youth who were more committed to school were less likely to use alcohol or marijuana. Females were more committed to school than males, and rural youth. School commitment declined from 6th to 10th grade and then remained stable.

Opportunities for School Involvement and Rewards for School Involvement. Opportunities for school involvement and rewards were fewer among males, youth in metropolitan areas, and high-school-age youth.

Community Risk and Protective Factors

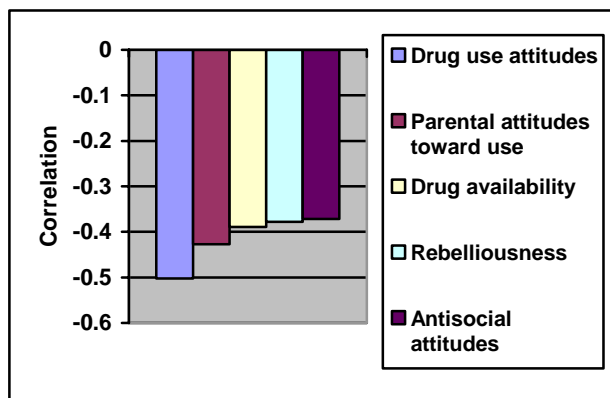
The Community Risk factors have five scales measuring the extent of the students’ attachment to their neighborhood, the disorganization of the community, drug use norms and laws, and drug availability.

- Generally, rural areas scored more positively on community factors than metropolitan areas. Drugs were less available, drug use norms and laws were more stringent, neighborhoods were less disorganized, and youth were more attached to their neighborhoods.
- There were also more opportunities and rewards for community involvement in rural areas.
- *Cigarettes* were perceived to be easiest to obtain, followed by alcohol and then marijuana.
- Older youth perceived drugs to be more available than younger youth.
- Youth perceived both the police and their neighbors to be less accepting of marijuana use than cigarette or alcohol use.
- Youth in metropolitan areas felt there were fewer opportunities for community involvement than rural youth.

Relationship of Risk and Protective Factors to Substance Use

All of the risk and protective factors measured have been demonstrated to be related to adolescent substance use. For this study, we examined which of these factors had the strongest relationships. An analysis of alcohol use was performed since this was the most commonly used drug.

Figure 7. Relationships of Risk and Protective Factors to 30-day Alcohol Use: Five Strongest Factors



- *Drug Use Attitudes* were most strongly related to alcohol use. Those youth who disapproved of use were more likely not to drink than those who approved of use.
- *Parents who disapproved of their children's use* were more likely to have children who did not use themselves.
- *Perceived availability of drugs* was related to alcohol use. If youth thought that alcohol was difficult to obtain, they were less likely to drink.

- *Rebellious youth* were more likely to drink, as were those with *anti-social attitudes*.
- These relationships also applied for 30-day cigarette use, binge drinking, and marijuana use. All substance use is strongly related to individual family parent factors (attitudes), and community factors (perceived availability).

Relationships of Risk and Protective Factors to Suicide

Of the variables measured, family factors were by far the most important ones related to suicide. Opportunities for parental involvement, family conflict, and rewards for parental involvement, were all related to suicidal thinking. Rebelliousness and drug use attitudes also showed strong relationship to suicide. Youth who were more rebellious and who were more accepting of drug use were more likely to have considered committing suicide.

Conclusions and Policy Implications

Analysis of the 2003-2004 Missouri Student Survey reveals a variety of policy considerations related to adolescent substance use and related factors.

- Policy makers and prevention practitioners should focus on preventing and reducing **alcohol use** because alcohol is the number one substance being used by youth. Alcohol is a problem substance in the home, is available to youth, is not perceived to be

as harmful as marijuana or other illegal drugs, and is more accepted in the home and community.

- Prevention programming needs to focus on family education and skills-building as a means to changing substance use patterns in youth. Parental attitudes are strongly related to adolescent substance use. Parents can have a strong influence on their children's substance use patterns and they need to be informed of their influence and given tools to better communicate with their children.
- Policies that focus on reducing cigarette and alcohol availability in the home and the community are recommended. Programs and policies that stress the importance of restricting access to alcohol (parental monitoring of adolescent alcohol use, for example) can help to reduce alcohol use.
- Student connectedness to school is an important protective factor in preventing and reducing substance use. Students who are connected to school,

feel their teachers care about them, and who do well in school are less likely to use. Because males tend to use more than females and be less connected to school, schools should be particularly attuned to the needs of males and focus on strengthening their connectedness to school.

- Schools need to tailor prevention programming to locale, dependent on whether the school is located in a rural or metropolitan environment.
- Families and schools need to be more cognizant of the potential for suicide among Missouri's youth, particularly among females.
- Police need to become better informed about the dangers of alcohol and need to better enforce existing cigarette and alcohol laws.
- Communities need to focus on making alcohol and tobacco less available to youth.



Overview

National trends in adolescent substance use are encouraging. According to 2004 data from Monitoring the Future (MTF), a national survey of 8th, 10th and 12th graders, cigarette, alcohol, and drug use decreased or remained stable from 2003 to 2004 with the exception of an increase in cocaine use among 10th graders. Cigarette smoking decreased among 10th graders, alcohol use remained the same for all grades, and marijuana used decreased significantly for 8th graders (NIDA, 2005).

Despite these improvements, many school-aged youth continue to engage in behaviors that put them at risk for injury, disease, and loss of life. Nationwide, the majority of deaths among those ages 10-24 can be attributed to only four causes: motor vehicle crashes (32.3%), homicide (15.1%), suicide (11.7%), and other unintentional injuries (11.7%) (CDC, 2004). In 2003, 25% of drivers ages 15-20 who died in automobile accidents had a blood alcohol count of 0.08 g/dl or higher (National Highway Traffic Safety Administration, 2004). Moreover, alcohol abuse can result in family dysfunction, job loss, and overall loss of quality of life. Tobacco use, which for most adults begins in adolescence, is the leading preventable cause of death in the United States, and every year causes more than 440,000 deaths (CDC, 2005).

Every even year since 2000, the Missouri Department of Mental Health (DMH) has conducted a survey to monitor the risk behaviors of youth in grades 6, 8, 10, and 12. Data have been analyzed through a contract with the Missouri Institute of Mental Health (MIMH) since 2002. In the 2004 administration of the Missouri Student Survey (MSS), the DMH and the Missouri Department of Elementary and Secondary Education (DESE), which in previous years conducted its own survey, joined together collaboratively to monitor the risk behaviors of students in public schools in the state. This report gives the results of the 2004 joint Missouri Student Survey and national data to show trends in health-related behaviors of students in the state. More specifically, the report will show incidence and prevalence rates for alcohol, tobacco, and other drug use, violent and delinquent behaviors, and the risk and protective factors that are associated with adolescent substance use and associated behaviors. Data will be presented for the state as a whole, as well as by region and, when available, by county.

Method

Sampling Method

The MSS was designed in 2004 to be administered in a web-based format to all 9th grade students across all 524 Missouri public school districts. In addition, school districts were asked to survey an additional grade between 6th and 12th grade. While all districts were asked, many either did not participate or surveyed a small number of youth (see Appendix for number of surveys received by county). SmartTrack, a web-based survey administration service developed by Dream, Inc., developed the automated assessment and delivered and collected the MSS data via the internet. The data were then analyzed by faculty and staff at MIMH.

Consent and Confidentiality

Students' parents were informed of the voluntary nature of the survey and gave their consent for their child to participate prior to survey administration. Authorized personnel at each participating school initialized the survey to ensure that only eligible students had access. After completion of each individual survey, student responses were added to a database. The survey procedures used were designed to protect the anonymity of the participating students.

This method of data administration represents a significant change from the 2002 MSS administration, when a sample of school districts was selected to participate in the MSS. Given the change in the sampling procedure, extreme caution is urged in comparing data from 2002 to 2004.

Instrument

The MSS is a 116-item instrument that explores student characteristics, drug and alcohol use, and participation in antisocial behavior. It also uses the framework designed by Hawkins, Catalano, and Miller (1992) to assess risk and protective factors indicative of drug use and antisocial behavior. Measures related to individual and peer, family, school, and community risk and protection are part of the MSS survey.

Drug and alcohol use were assessed by asking lifetime use ("have you ever used..."), past 30-day use (measured in days and times), and for some drugs, use on school property within the past 30-days. Additional questions assessed the number of cigarettes smoked per day as well as binge drinking, defined here as drinking five or more alcoholic drinks in a row within the past two weeks.

The 2004 instrument is similar to the 2002 instrument, but the wording of some questions was changed slightly and some questions were added to bring consonance between DESE's school survey and the original DMH MSS.

Cleaning Procedures

To ensure validity of the data, students were excluded from the analyses when they did not answer a majority of the survey's questions, they reported inconsistent information, or they indicated that they were not honest when completing the survey.

Honesty was assessed both through the use of a "fake drug" and by asking the youth how honestly they answered the questions. Two "fake drug questions" were included

that explored lifetime and 30-day use. Any student who responded that they had used “derbisol” (fake drug) either in their lifetime or in the past 30 days was excluded from the remainder of the analysis. In addition to these questions, students were asked to indicate the degree to which they were honest when completing the survey on a five-point scale from “I was very honest” to “I was not honest at all.” Participants who answered they were “very honest” or “honest pretty much of the time” were kept in the sample. Those who answered they were honest “once in a while” or “not honest at all” were eliminated from the sample. Any student who inconsistently answered the drug use questions was also excluded from the analyses. For example, a student who indicated that they smoked cigarettes within the past 30-days, but reported that they had never smoked in their lifetime was removed. A total of 8,148 (12.8%) students were deleted after all validity checks were completed.

The number of responses varies across each of the questions, with the number of responses ranging from 1,906 (“How old were you when you first belonged to a gang”?) to 43,987, with most responses ranging between 40,562 and 43,987. An analysis of non-response showed that the lack of response was random.

Comparing the Current Survey to Prior Administrations

The 2003-2004 administration was unique for several reasons. First, the questionnaire was changed slightly following conversations with agency personnel to determine the most pertinent questions to understanding prevention trends, developing prevention plans, and reporting

to other entities, and statistical identification of problematic items. Second, the mode of administration changed from a pencil-paper format to a web-based format which could alter the reliability of the responses. Finally, as stated earlier, previous administrations were conducted using random sampling methodology, and the 2003-2004 survey was available to the entire population of Missouri’s 9th graders. For these reasons, the comparisons between the 2002 and 2004 data should be made with caution.

Characteristics of the Sample

Survey Participants

Of the almost 500,000 Missouri public school students in grades 6 through 12, 12.9% took part in the Missouri Student Survey (MSS). The majority of participants were in the 9th grade. Most districts chose to collect additional data from the 6th and 8th grades.

Data cleaning procedures resulted in a sample loss of approximately 10,000 surveys because many students did not complete the survey, reported inaccurate or inconsistent information, or indicated they were not honest in completing the survey (see Methods section, above, for additional information). The final sample size for most questions was approximately 45,000.

Grade in School

The majority of participants were in the 9th grade (33.5%; 18,563 students). The 6th (7,780) and 8th (7,556) grades represented an additional 27.6% of the sample. The remaining 38.9% of the sample were in represented the 7th, 10th, 11th, and 12th grades. 18.9% of the sample failed to indicate their grade level. The average age of the participants was 14.25 years of age (students in the 9th grade are generally between the ages of 14 and 15 years).

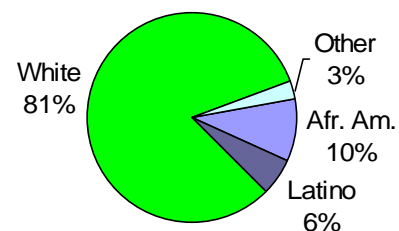
Gender

The percentage of female respondents in the survey is higher (54.8%) than the overall gender composition of the public school population (48.7%).

Race/Ethnicity

The MSS sample was 81% non-Hispanic Caucasian, 6% Hispanic, 10% African-American, and 3% were of other racial/ethnic make-ups. The racial/ethnic composition of the MSS sample had a larger percentage of whites and Latinos and fewer African-Americans than in the overall population.

Figure 8. MSS Sample by Ethnicity



The language spoken at home by the vast majority (98.0%) of families was English, with only 1.0% speaking Spanish.

Parent Educational Level

There was a considerable range in parents' educational levels. About 1/3 of mothers and fathers had graduated from college; slightly over one in ten had not graduated from high school.

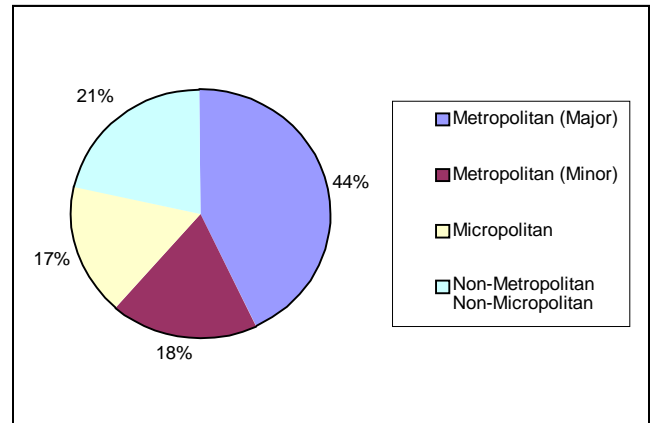
Table 1. Parent Education

Education	Mother	Father
<High school graduate	11.3%	12.8%
High school graduate	28.3%	33.8%
Some college	22.9%	21.1%
College graduate	37.5%	32.4%

Geographic Location

The MSA Classification system, developed by the United States Office of Management and Budget (OMB), is used in calculating geographic location of students. The terms used may be new to the reader, and are metropolitan (major and minor) and micropolitan statistical areas. Each metropolitan statistical area must have at least one urbanized area of 50,000 or more inhabitants. Each micropolitan statistical area must have at least one urban cluster of at least 10,000, but have a population less than 50,000. In this report, the terms urban and metropolitan are used interchangeably.

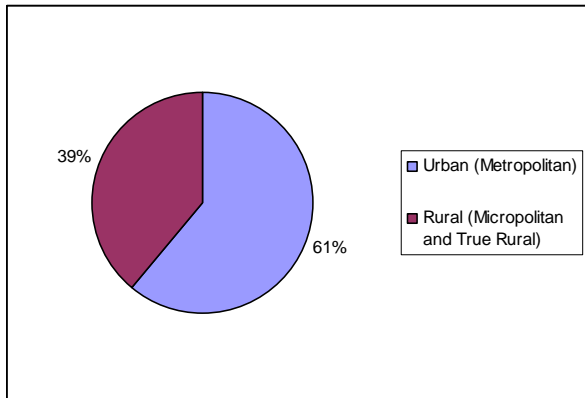
Figure 9. MSA Classification



- The largest percentage of students lived in major metropolitan areas (St. Louis and Kansas City, followed by non-metropolitan, and non-micropolitan areas. The remainder lived in minor metropolitan (Columbia, Jefferson City, Joplin, St. Joseph, and Springfield) and micropolitan (Branson, Cape Girardeau, Farmington, Fort Leonard Wood, Hannibal, Kennett, Kirksville, Lebanon, Marshall, Maryville, Mexico, and Moberly) areas.
- The U.S. Census Bureau does not identify or classify entire counties as urban or rural. Because participation from areas traditionally considered “urban” was sparse, this report uses metropolitan as the term to classify students who are in the larger Missouri cities.

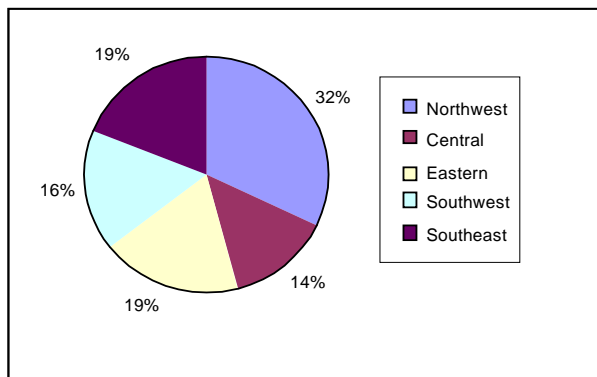
When all of these categories are collapsed to create larger units, most youth participating in the MSS were in metropolitan areas. In this report, the terms urban and metropolitan are used interchangeably.

Figure 10. Urban/Rural Classification



In addition, youth surveyed came from all of the Alcohol and Drug Planning regions. While for the most part, the distributions across regions was fairly even, ADA's Northwest region had the most representation (32.2%) of youth responding to the MSS.

Figure 11. ADA Planning Region



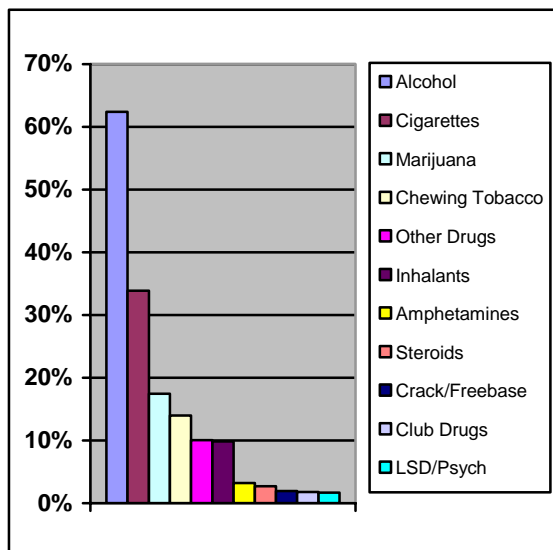
Cigarette, Alcohol, Marijuana and Other Drug Use Patterns

One of the primary purposes of the MSS is to learn more about the alcohol and other drug use patterns of Missouri's students. Students were asked a series of questions about drug use over their lifetime and in the 30-day period prior to MSS administration. In addition, they were asked at what age they started using substances.

Lifetime Substance Use

Students were asked to indicate if they had ever (in their lifetime) used cigarettes, alcohol, marijuana and other drugs.

Figure 12. Percentage of Youth Indicating Lifetime Use of Drugs



- Youth reported the highest lifetime use of **alcohol**, followed by **cigarettes** and **marijuana**.
- More than half of the youth reported that they had consumed alcohol at some time in their lifetime; approximately one-third reported having smoked a cigarette at some time, and a little less than one-fifth reported using marijuana. Lifetime use of all other illegal drugs was negligible.
 - Of those who indicated drinking alcohol, the majority (56.9%) reported that they had done so less than 10 times in their life.
 - Of those who indicated that they had smoked cigarettes, around half indicated that they had only smoked "once or twice" in their life.
- Around one-quarter of the sample indicated that they had smoked marijuana "40 or more times" in their lifetime.
- Lifetime use of all other illegal drugs was under 5%, and similar to the drugs listed above, around half of those who

had used indicated they had only used “once or twice.”

Lifetime Use Demographic Patterns

- Lifetime cigarette use is somewhat higher in rural counties among males.
- Lifetime chewing tobacco use was higher for males than for females.
- Lifetime chewing tobacco use is almost twice as high in rural counties as in metropolitan counties among males.
- Lifetime marijuana use is higher in metropolitan counties among males.

Figure 13. Lifetime Substance Use: Rural Counties

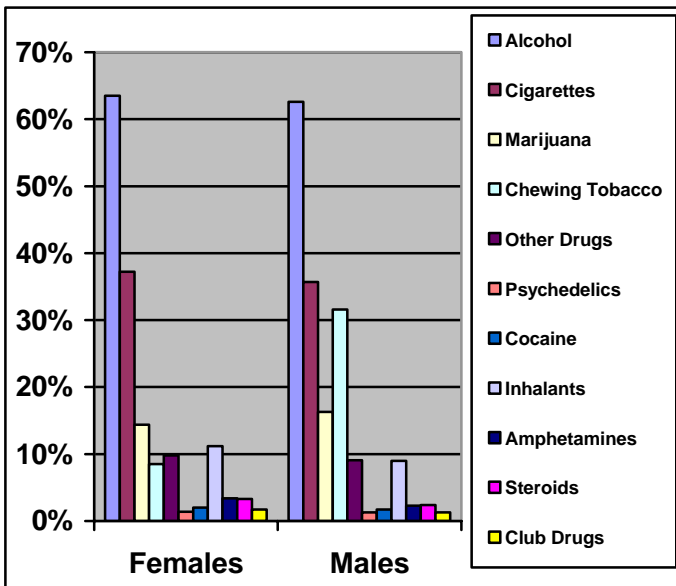
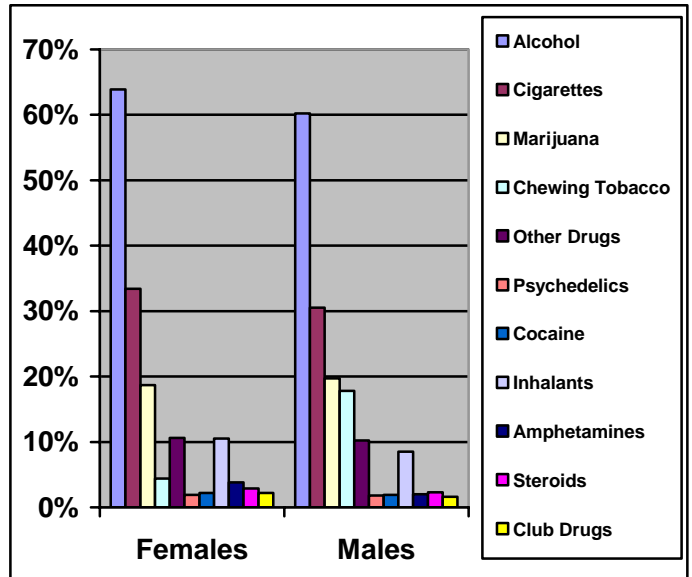


Figure 14. Lifetime Substance Uses: Urban Counties



- Male substance use is similar in rural and urban counties with the exception of chewing tobacco use, which is higher in rural counties.
- Female substance use is similar in rural and urban counties, with the exception of marijuana use, which is slightly higher in urban areas.

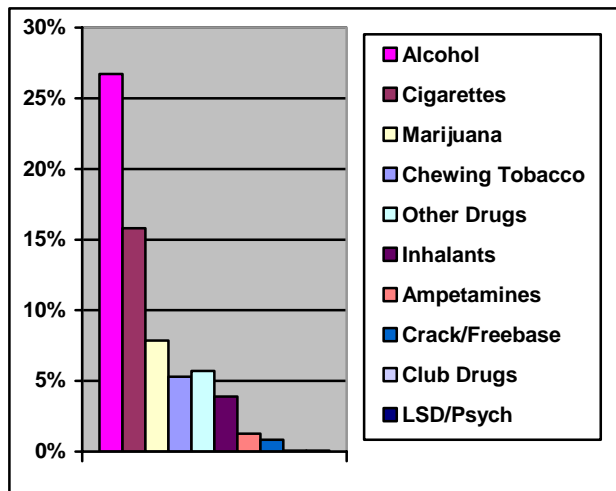
30-Day Substance Use

Students were asked to indicate the number of days, in the past 30 days, they had used cigarettes, alcohol and chewing tobacco. They were also asked to indicate the number of times in the past 30 days, they had used marijuana, LSD or other psychedelics, cocaine (powder, crack, or freebase), inhalants, speed, amphetamines or methamphetamines, ecstasy or other club drugs, or other illegal drugs. They were also asked how often they had consumed five drinks in a row in the past two, how often they had consumed alcohol on school

property and whether they had ridden in an automobile with a driver who had been drinking, or driven while drinking.

- Though use rates were considerably lower than lifetime use rates, similar patterns emerged when youth were asked how often they had used in the 30 days prior to the survey administration. More youth reported **alcohol** use, followed by cigarettes and marijuana.

Figure 15. Percentage of Youth Who Had Used in the Past Thirty Days



Alcohol

- Almost 30% of the students indicated they drank alcohol within the past 30 days.
- 13.5% of the students indicated they drank five or more drinks in a row within the past two weeks.
- Binge drinking increased by age. 25% of 10th grade males, and 23% of 10th grade females, reported having five or more drinks in a row within the past two weeks. **40% of 12th grade males**, and 18% of 12th grade females, reported

having five or more drinks in a row within the past two weeks.

- A small percentage of students (2.5%), indicated they drank alcohol on school property within the past 30 days.
- 6.0% of the students indicated they drove a car or other vehicle while they were drinking alcohol within the past 30 days.
- Almost one-quarter (23.4%) of the students indicated they were a passenger in a vehicle which was being driven by someone who was drinking alcohol. A higher percentage of females were passenger (25.0%) reported being a passenger than males (21.4%).
- Youth in rural areas tended to ride with drivers who were drinking more often than youth in metropolitan areas. Almost one-in-three (29.4%) high-school-aged females and around one-quarter (26.9%) of high-school-aged males living in rural counties rode in a car with a driver who was drinking some time in the past 30 days. Percentages were much lower for middle school youth.

Figure 16. Rural and Metropolitan Male and Female High-Schoolers Who Rode With a Driver Who Was Drinking in the Past 30 Days

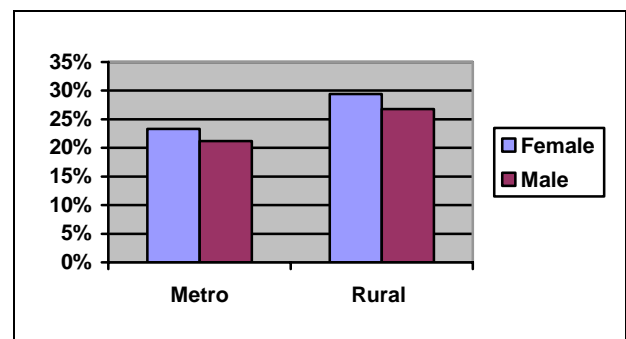
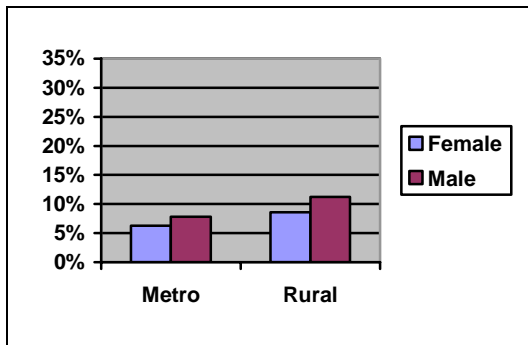


Figure 17. Male and Female Youth 16 and Over Who Reported Drinking While Driving: Rural and Metropolitan Youth



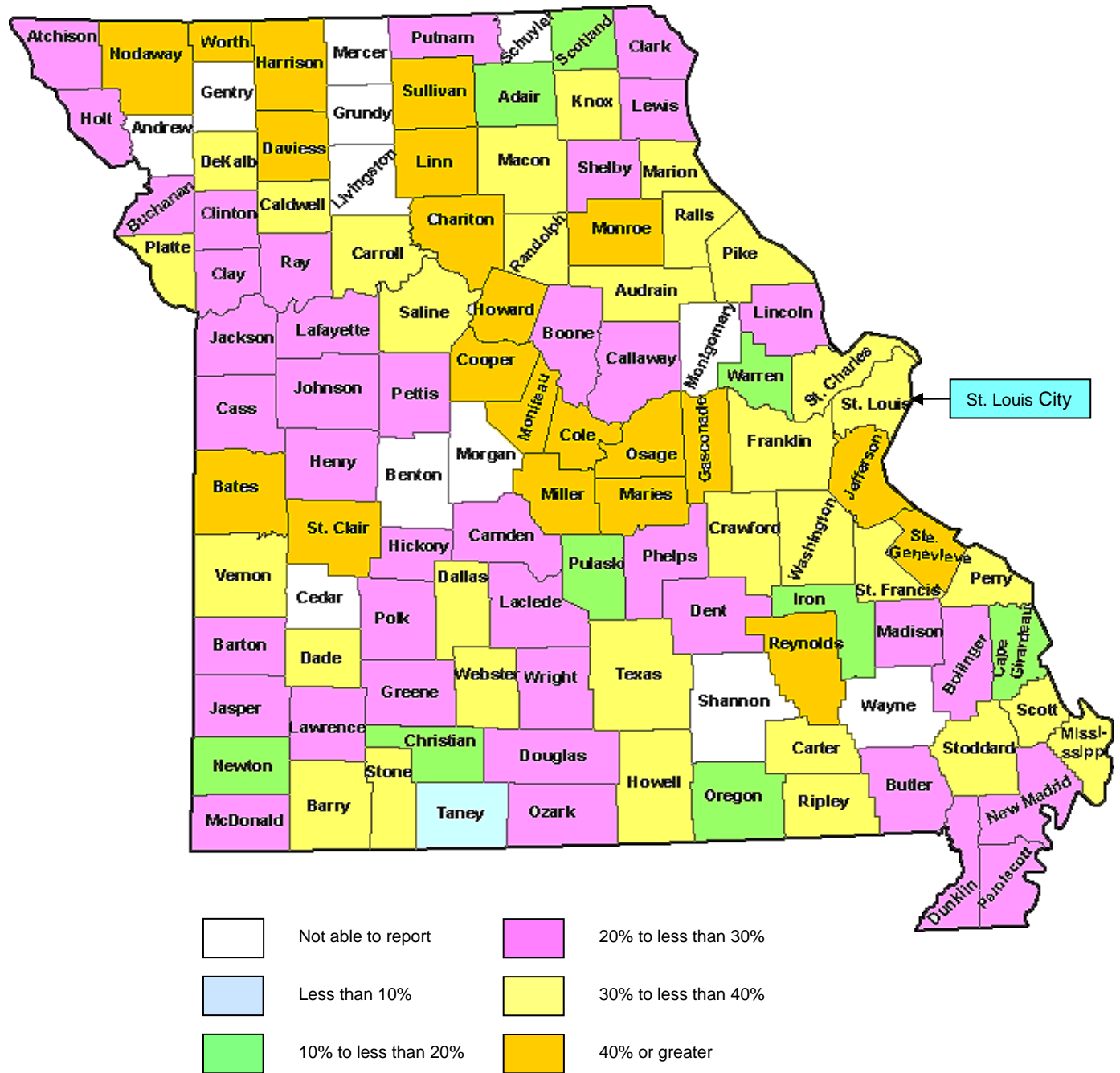
- Males living in rural areas were most likely to drink while driving, with 18% of males 16 and over reporting driving while drinking in the past 30 days.

- Females in urban areas were least likely to drink while driving, although around one-in-ten females 16 and over still reported driving while using alcohol.
- 30-day use of alcohol is higher in the Eastern and Central regions of the state, and lowest among African-Americans.

30-Day Alcohol Use Patterns by County

The following map shows the distribution of the percentage of students who reported using alcohol in the past 30 days at the county level. Those counties in the “not reporting” category had 50 or fewer students participating in the survey.

Figure 18. Percentage of Students By County Who Reported the Use of Alcohol Within the Past 30 days



Cigarettes

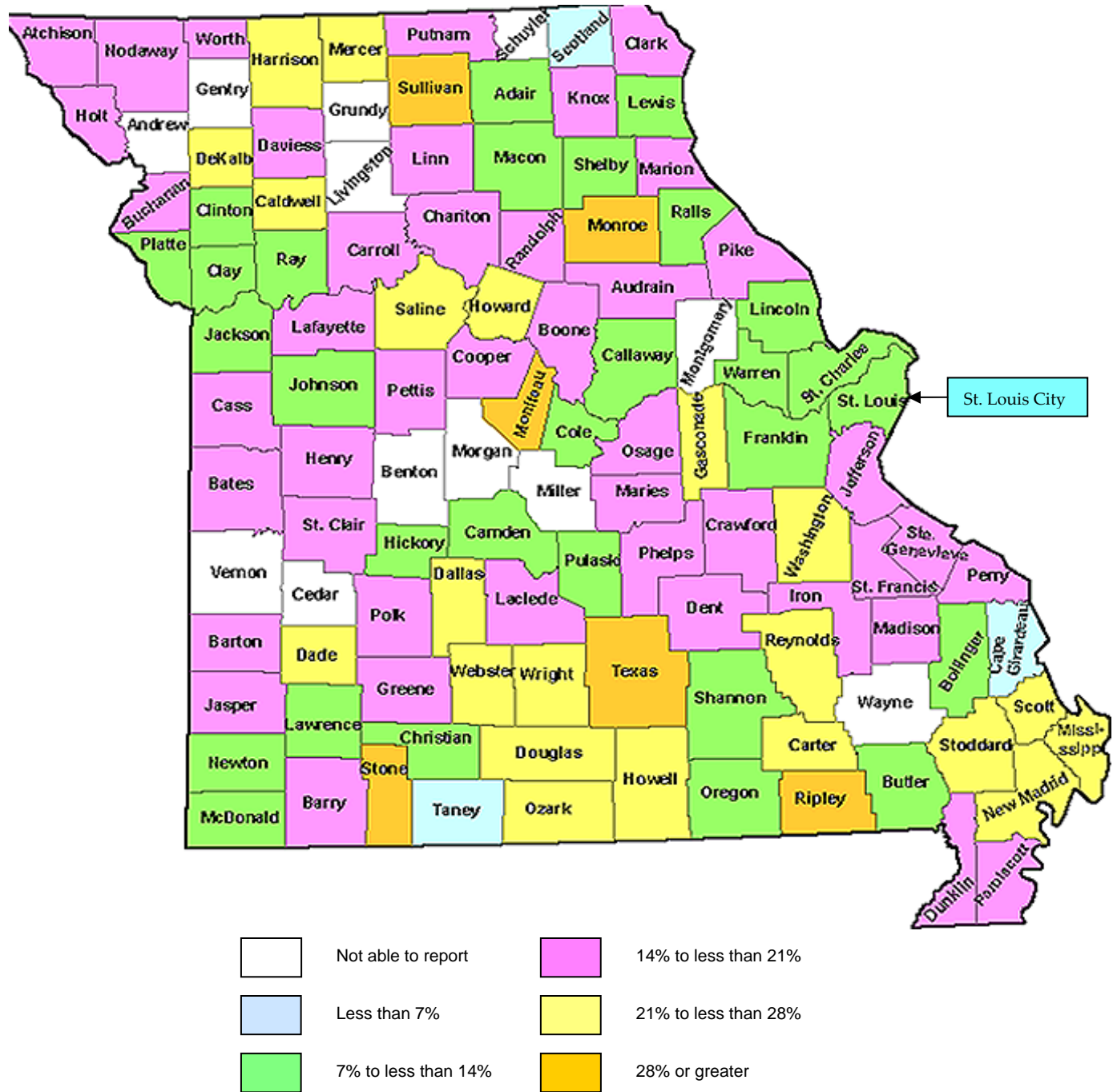
- Cigarettes were the substance mentioned second most frequently, with 15.8% of the students indicating that they had smoked cigarettes within the past 30 days.
 - Cigarette use increased by age. While only 5.3% of 6th graders reported smoking in the past 30 days, 28.3% of 12th graders reported 30-day cigarette use.
 - Of those who did smoke in the past 30 days, (75.2%) smoked five or fewer cigarettes per day.
- 2.8% of the students indicated they had smoked cigarettes on school property within the past 30 days.

- Most youth who smoked (76.1%) indicated they have never tried to quit smoking
- 30-day use of cigarettes was highest in the Southeast region of the state, and lowest among African-Americans.

30-Day Cigarette Use Patterns by County

The following map shows the percentage of students who reported using cigarettes in the past 30 days at the county level. Those counties in the “not reporting” category had 50 or fewer students participating in the survey

Figure 19. Percentage of Students Who Reported Smoking Within the Past 30 Days by County



Marijuana

- Marijuana was the third most frequent drug of choice. Eight percent of the students indicated that they had smoked marijuana within the past 30 days.
- 30-day marijuana use increases by age with 1% of 6th graders reporting 30-day use compared to 14.8% of 12th grade youth.
- 1.4% of the students indicated that they had smoked marijuana on school property in the past 30 days.
- 30-day marijuana use was highest in the eastern region, and was higher among African-American and Latino youth than whites or other youth.

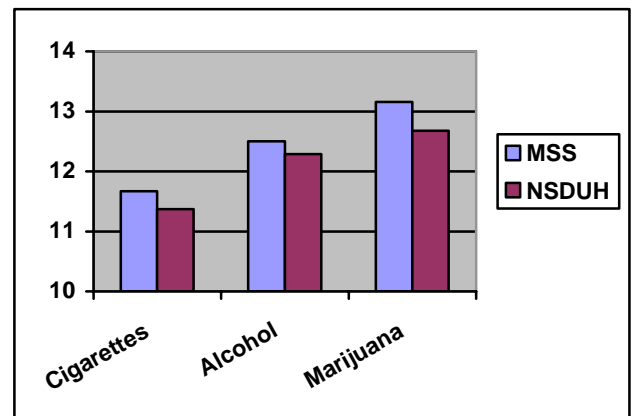
Chewing Tobacco

- Chewing tobacco was the drug mentioned fourth most often, although only 5.3% of the students indicated they had used chewing tobacco within the past 30 days.
- Chewing tobacco use was higher in rural Missouri than urban, and higher among males than females. Looking only at 12th grade males living in rural Missouri, 28% reported using chewing tobacco in the past 30 days, with 10.6% reporting daily chewing tobacco use.
- Chewing tobacco use increases by age.
- 2.9% of the students indicated they had used chewing tobacco on school property within the past 30 days.

Age of Initiation

Students were asked to indicate how old they were when they first began smoking cigarettes (even just a puff), had at least one sip of alcohol, began drinking regularly (once or twice a month), and when they began smoking marijuana. Data from the 2003 National Survey on Drug Use and Health (NSDUH) were also gathered for comparative purposes. The chart below compares use rates for the MSS sample and the national sample looking at 15-year olds only.

Figure 20. Average Age of Initiation for Substance Use: MSS and NSDUH Samples

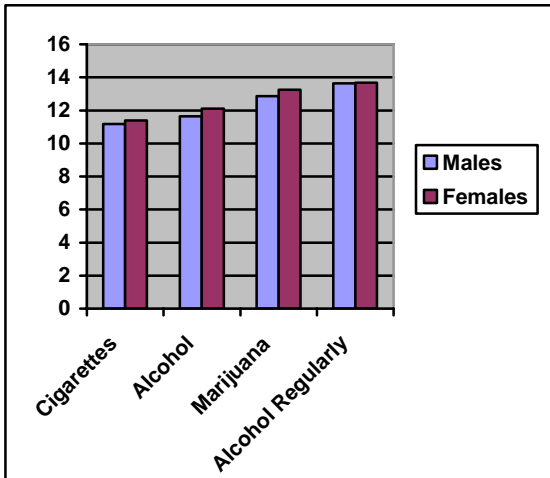


- Cigarette use began earlier than other substances following by alcohol (more than a sip), marijuana, and alcohol (regularly). Cigarette use begins between the ages of 11 and 12.
- The average age of initiation for the MSS sample is slightly higher than the national average. Alcohol use for the MSS 15-year old sample begins, on average, between 12 and 13.
- Marijuana use begins around age 13, and starts later for Missouri youth than

the national sample. Alcohol use starts later among Missouri youth than the national sample.

For the three most frequently used substances, males used at an earlier age than females. Regular use of alcohol did not differ between males and females.

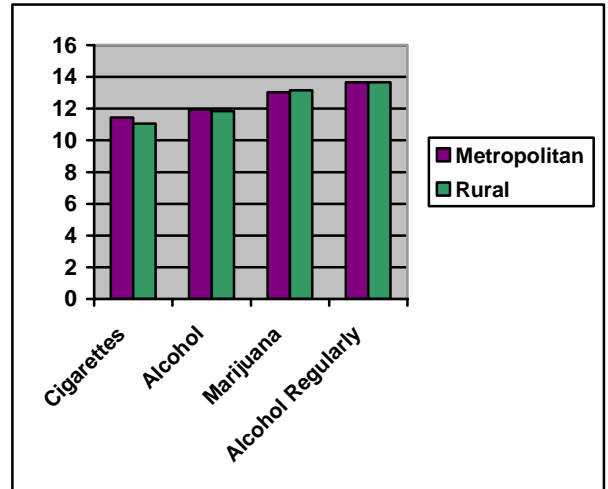
Figure 21. Average Age of Initiation of Drug Use for Males and Females



NOTE: Regular use of alcohol does not differ between males and females.

The average age of alcohol initiation was about equal in rural and urban areas. Rural students smoked cigarettes earlier than did urban youth. Age of first marijuana use was roughly equal in rural and metropolitan areas.

Figure 22. Average Age of Initiation of Substance Use for Students in Rural and Metropolitan Areas

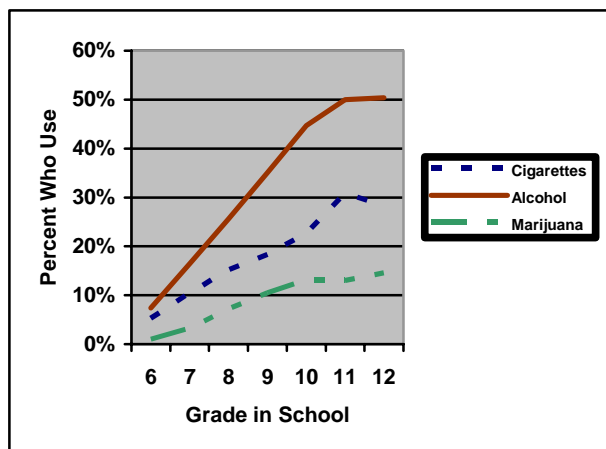


NOTE: Use of alcohol does not differ between urban and rural areas.

Patterns of Substance Use

- As shown in the chart below, alcohol use rises dramatically during the middle and high school years, with only 7.4% of sixth graders reporting past 30 day use, to half of all 11th and 12th graders reporting past 30 day use. Cigarette use also rises during this time, but levels off to around 30% at around 11th grade. Self-reported marijuana use rises but not at nearly the levels of the other two substances.

Figure 23. Percentage of Youth Who Have Used in the Past 30 Days by Grade in School



Comparisons with Monitoring the Future (MTF)

In addition to comparison with the NSDUH sample, cigarette, alcohol and marijuana use patterns were compared to national samples of youth who participated in the MTF survey in 2004.

Figures 24 A/B/C. Comparisons of 30-Day Substance Use Patterns with Monitoring the Future

Figure 24-A. Cigarettes

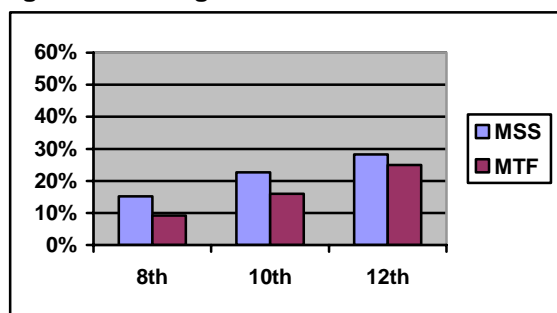


Figure 24-B. Alcohol

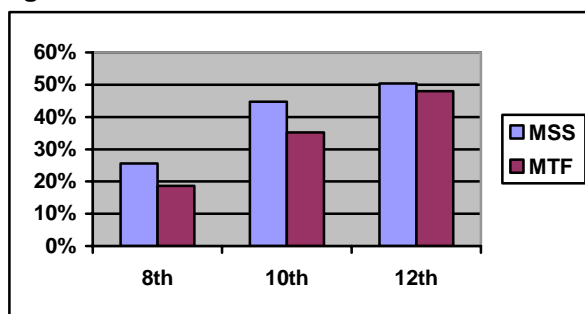
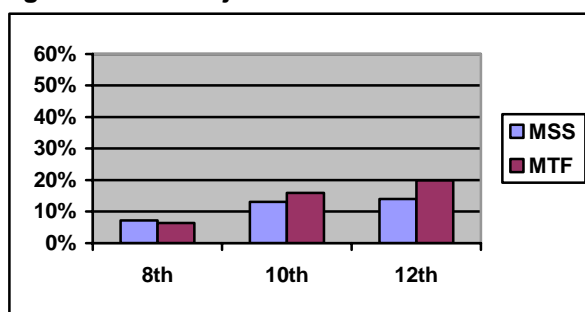


Figure 24-C. Marijuana



- 8th and 10th grade cigarette and alcohol use was higher than the national use rates. While 16% of the 10th grade MTF sample reported using cigarettes, 22.7% of the MSS sample reported use. 35% of the MTF sample reported 30-day alcohol use, compared to 45% of the MSS sample. Some of these differences may be attributable to differences in data collection methods across samples.
- 12th grade cigarette and alcohol use rates for Missouri youth was only slightly higher than rates for the national sample.
- 10th and 12th grade marijuana use rates were lower than the national sample.
- Marijuana use was slightly lower than the national sample among 10th and 12th graders; differences were more pronounced among 12th grade youth.

Youth Risk and Protective Factors

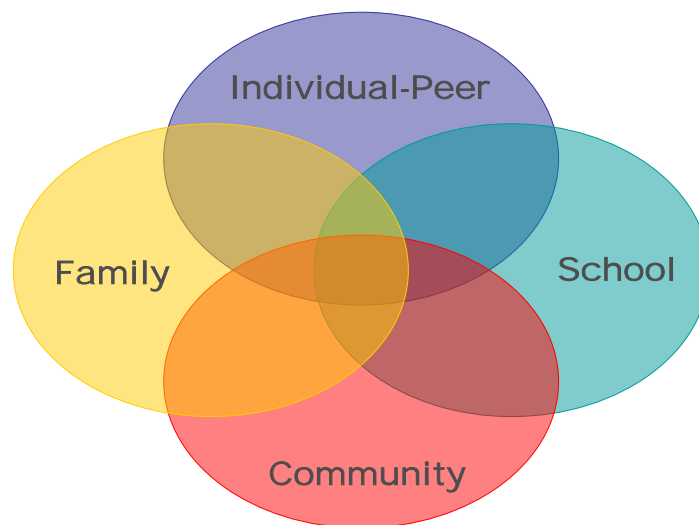
Over the past 30 years, substantial evidence has been developed documenting the relationship between individual and environmental risk and protective factors and substance use. *Risk factors* are those individual, family, school, community, and societal influences that can place a child at risk of engaging in substance use.

Protective factors are those positive characteristics or influences that can buffer young people from the potential for substance use. Listed below are some of the protective and risk factors that have been shown to be highly related to substance use. Youth behaviors are often influenced by a complex mix of these protective and risk factors.

Table 2. Risk and Protective Factors

What are Risk Factors?	What are Protective Factors?
<p>Negative influences that increased the potential for substance use including:</p> <ul style="list-style-type: none"> • Early initiation of substance use • Favorable attitudes toward substance use • Rebelliousness • Antisocial attitudes • Peer rewards for anti-social involvement • Poor family management • Parental approval of substance use • Parental substance use • Family conflict • Lack of parent-child attachments and nurturing • Academic failure • Low commitment to school • Neighborhood disorganization • Laws favorable to drug use • Availability of drugs 	<p>Positive influences essential in building resilience in young people associated with reduced potential for substance use including:</p> <ul style="list-style-type: none"> • Strong social skills • Negative attitudes toward substance use • Family attachment • Parental monitoring of children’s activities with peers • Clear rules of conduct that are consistently enforced within the family • Involvement of parents in the lives of their children • Success in school performance • Strong bonds with institutions, such as school and religious organizations • Adoption of conventional norms about substance use

Risk and Protective Factor Domains




Research has shown that many of the same factors apply to other behaviors such as youth violence, delinquency, and school dropout.

Risk and protective factors are inter-related and organized into the four domains displayed above: Individual-peer, Family, School, and Community. The MSS has a number of Risk and Protective factor scales constructed that measure these domains.

In this report, Risk and Protective factors are presented in the domain they represent: Individual-Peer, Family, School, and Community. The effects of certain demographic characteristics on each factor are examined. [Except where noted, scales were calculated as the average of individuals' responses to questions in that

scale. For each Risk factor, the lower the score the more it is reflective of "risk" (e.g., a harmful attitude or behavior). For each Protective factor, the higher the score the more it is reflective of "resiliency" (e.g., a healthy attitude or behavior). Thus, a high score on either the Risk or Protective factors indicates a healthy response.]

The following commentary and illustrations demonstrate the extent of risk and resiliency for youth in Missouri, urban/rural classifications) as well as by gender, race/ethnicities, region in Missouri, and grade levels.



Individual-Peer

Individual and Peer Risk and Protective Factors

- **Rebelliousness**
- **Antisocial attitudes**
- **Antisocial behaviors**
- **Drug use attitudes**
- **Perceived risk of drug use (minor)**
- **Perceived risk of drug use (major)**
- **Peer rewards for antisocial involvement**
- **Suicide**

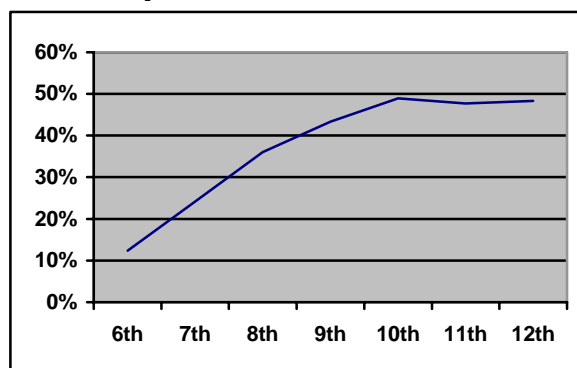
The Individual-Peer domain includes several risk factors shown to be related to substance use and other related behaviors. Research indicates that youth who engage in antisocial behaviors (bullying, stealing, fighting, etc.), are rebellious, do not perceive drugs to be dangerous, and have friends who are also antisocial are more likely to use substances than other youth.

Six Individual-Peer risk factors in the MSS measured students' attitudes toward antisocial behavior (i.e., antisocial attitudes, rebelliousness), drug use (drug use attitudes, perceived risk of drug use – minor and major drugs), and their perception of their friends attitudes toward antisocial behavior and drugs (i.e., peer rewards for antisocial involvement). This section includes information on these antisocial behaviors and on suicide.

Rebelliousness

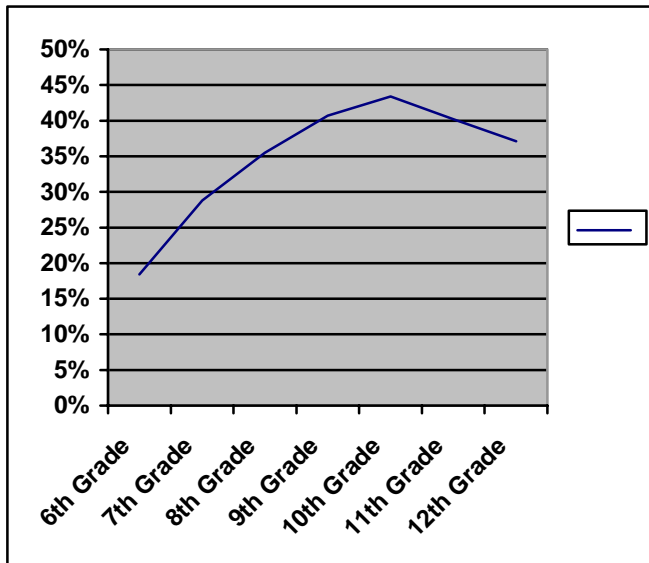
The Rebelliousness scale has five items that measure disregard for authority including items such as ignoring rules and thinking it is okay to lie or cheat. Youths' responses to individual items of interest and the scale as a whole are highlighted.

Figure 25. Youth Who Felt It Is Okay to Cheat in School by Grade in School



- There was a steady increase in rebelliousness from 6th to 10th grade, and in high school rebelliousness began to level off. The percentage of youth who approved of cheating went from a little more than 10% of 6th graders to around 50% of all high school youth.

Figure 26. Youth Who Said They'd Like to See How Much They Can Get Away With by Grade in School*



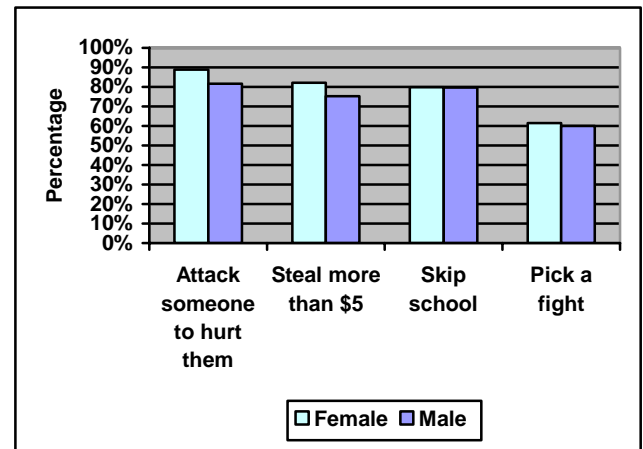
*"Very True" and "Somewhat True" Responses

- Males were more rebellious than females.
- Those located in the Eastern region were more rebellious than those in all other regions. Students indicating the least rebellious attitudes were in the Central and Southwest regions. Students in metropolitan areas were more rebellious than those in rural areas.
- Interesting patterns emerged in relationship to racial ethnicity. White youth whose mothers and fathers had not graduated from high school were more rebellious than youth with more educated parents. African American students' patterns of rebelliousness remained steady regardless of their parents' educational levels.

Antisocial Attitudes

The Antisocial Attitudes scale has four items that measure whether youth think it is wrong to engage in antisocial behaviors, such as stealing, fighting, and skipping school.

Figure 27. Percentage of Youth Who Felt It Was "Wrong" or "Very Wrong" for Someone Their Age to Engage in Behavior

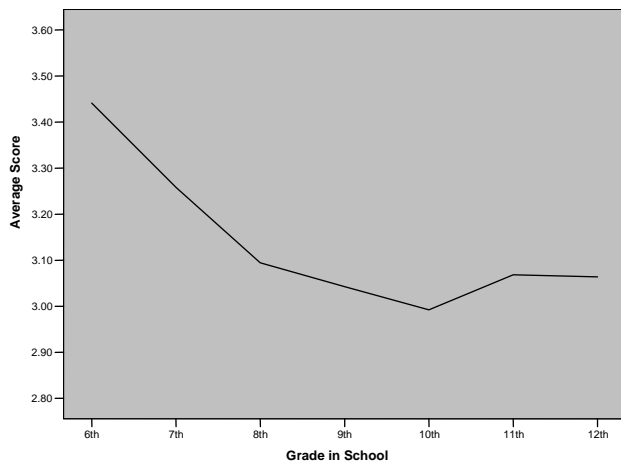


- Youth are more accepting of "picking a fight" than any of the other antisocial behaviors measured. They are least accepting of attacking someone to seriously hurt them, although almost 20% of males still felt this behavior was either "not wrong at all: or only "a little bit wrong."
- Males were slightly more tolerant of antisocial behaviors, particularly stealing, than females. Males and females were equally accepting of picking fights and skipping school.
- Students in the eastern region were more tolerant of antisocial behaviors than those in other regions; students in the Northwest region thought that

antisocial behaviors were more wrong than youth in other regions.

- Students residing in Metropolitan areas found the antisocial behaviors more acceptable than those in rural areas.
- In general, middle school youth were less accepting of antisocial behaviors than those in the 10th – 12th grades. Prosocial attitudes declined from 6th to 10th grade.

Figure 28. Prosocial Attitudes by Grade in School



Anti-Social Behaviors

In addition to the substance use behaviors discussed in the previous section, students were also asked to report the frequency with which they were engaged in several anti-social behaviors, including fighting, being arrested, being suspended from school, using a weapon to threaten someone, stealing or trying to steal a motor vehicle, or taking a gun to school.

Physical Fights

- 37% of all students reported being in a physical fight at least once in the past year (49% of all males, 27% of all females).

Weapon Use

- 8% of all students reported using a weapon to threaten or bully someone in the past year (10% of males and 5% of females).
- Weapon use was higher among youth with less educated parents (12% among parents with less than a high school degree, compared to 7% of youth whose parents were college graduates).
- Among males with less educated parents, 17% reported using a weapon to threaten or bully someone.

Arrests

- 6% of all students reported being arrested in the past year (8% of males and 4% of females).
- Arrests were highest among 12th graders (around 10% of the 12th graders surveyed).

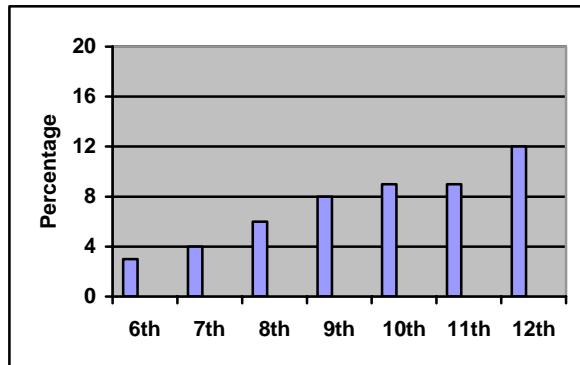
Suspensions (being suspended from school in the past year)

- 19% of all youth reported being suspended from school in the past year. Males were more likely to be suspended than females (24% versus 16%).
- 27% of all students with mothers with less than a high school education reported

Drug Selling

- 7% of all youth reported selling drugs. The percentage of those who reported selling increases by grade level, with 12% of 12th graders reporting in the affirmative.

Figure 29. Reported Drug Selling by Grade in School



- African American and Latino males were more likely to sell drugs than whites, even when controlling for the education of their parents.

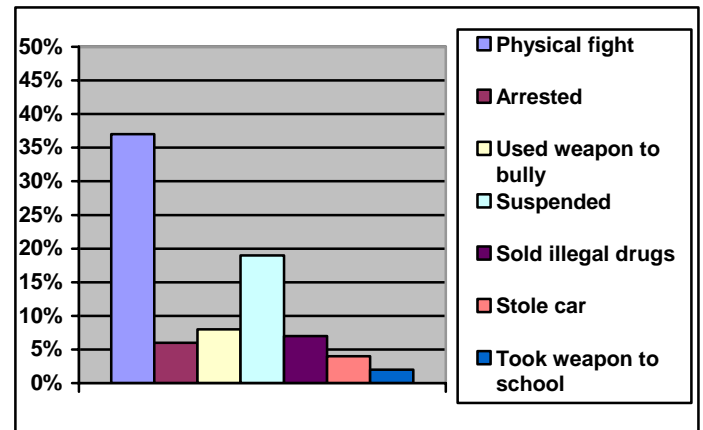
Stealing an Automobile

- 4% of all youth reported stealing an automobile in the past year. Youth with less educated parents were more likely to have stolen an automobile than youth with more educated parents; among this group there were no differences according to race.

Bringing a Gun to School

- 2% of youth reported bring a gun to school in the past year. Differences were negligible across all demographic groups.

Figure 30. Participation in Anti-Social Behaviors in the Past Year



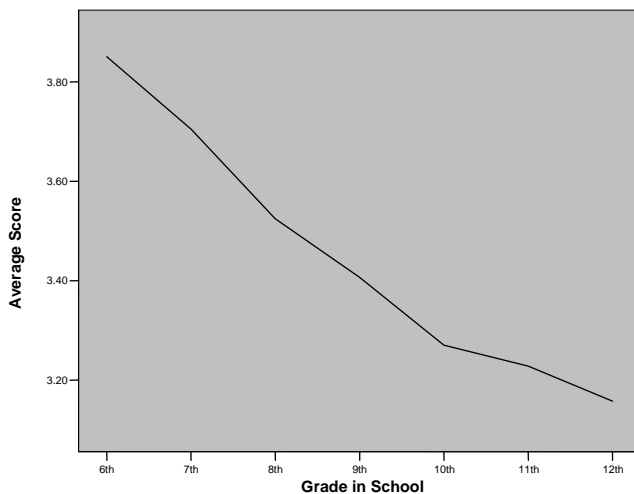
In sum, the most frequent anti-social behavior reported is physical fighting, followed by suspensions from school. Anti-social behaviors tend to occur more often among those students with less educated parents, although this was not universally true, and anti-social behaviors also tended to occur more among males than females, though again, this was true only of some behaviors. Metropolitan/rural differences were less pronounced once other factors were considered.

Drug Use Attitudes

The Drug Use Attitudes scale has five items measuring the extent to which one thinks it is wrong to drink alcohol, smoke cigarettes or marijuana, or use other illicit drugs. A higher response indicates a “healthy” response.

- Patterns regarding drug use were very similar to those regarding anti-social behaviors. Approval of drugs increased by age, was higher among males than females, was higher in rural areas than metropolitan areas, and higher in the northwest and southeast regions than other regions.

Figure 31. Drug Use Attitudes by Grade in School (N=43,832)*



*Higher Score is Less Approving of Use

Perceived Risk of Drug Use

Two scales measured youths' perceptions of the risk of drug use: one measured the harm of cigarettes, alcohol, and marijuana; the other, the harm of cocaine, methamphetamine, psychedelic, and other illicit drugs

The first scale has four items measuring the extent to which one thinks they would harm themselves (physically or in other ways) if they smoked cigarettes or marijuana or drank alcohol.

- Students perceived that alcohol was the least dangerous drug. Only 36% of youth felt that people put themselves at

“great risk” if they consume one or two drinks on a regular basis.

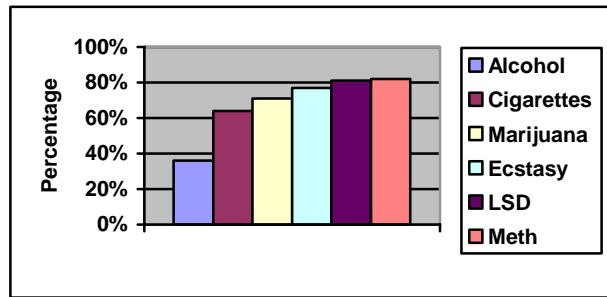
- After alcohol, cigarettes were perceived to be the next least risky substance, although 64% of students felt that people put themselves at great risk if they smoke regularly.

- All of the illegal drugs were perceived to be more risky than cigarettes or alcohol use, although marijuana was perceived to be less risky than ecstasy, LSD, or methamphetamines. Occasional use of ecstasy, LSD and methamphetamines was perceived to be more risky than regular use of cigarettes, alcohol, and marijuana.

- Demographic patterns were similar to other individual risk factors, with females, rural students, and younger students perceiving a higher risk in using major drugs than their counterparts.

- Students in the Central and Southwest regions were most likely to perceive gateway drugs as highly risky. Students in the Northwest region were most likely to perceive the illegal drugs as less risky.

Figure 32. Perceived Risk of Regular Use of Drugs*



*Those who perceived that people put themselves at “great risk” by using cigarettes, alcohol or marijuana regularly, ecstasy, LSD or meth occasionally.

Peer Rewards for Antisocial Involvement

The Peer Rewards for Antisocial Involvement scale has four items measuring the extent to which one thinks they would be “seen as cool” if they smoked cigarettes or marijuana, drank alcohol, or carried a gun.

- These patterns mirror those of other individual risk factors. Males, older youth, those in the Eastern region, and metropolitan youth are more likely to think they will be seen as cool if they engage in antisocial activities.
- Students in the Central and Southwest regions are the least likely to think they will be seen as cool for antisocial involvement.
- Students’ perceptions of antisocial involvement did not vary depending upon race/ethnicity.

Suicide

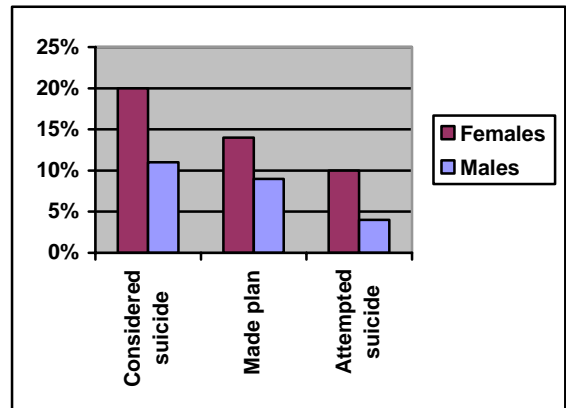
This year, three questions about suicide were asked of youth. Specifically, students were asked whether they had seriously considered attempting suicide in the past 12 months, whether they had made a plan to commit suicide, and if they had actually tried to commit suicide in the past 12 months.

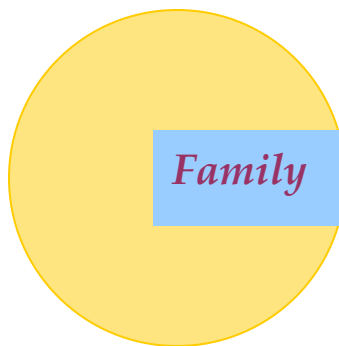
- 16% of the youth sampled said they had seriously considered attempting suicide.
 - The percentage was highest in 8th and 9th grade, with 18% reporting that they had seriously considered committing suicide.
 - Females were much more likely to seriously consider attempting suicide than males (20% versus 11%).
 - Students with less educated parents were much more likely to report considering attempting suicide. 24% of youth with mothers with less than a high school diploma reported seriously considering suicide, compared to 14% of students with college-educated mothers.
 - Among 9th grade females with parents with less than a high school education, 32% reported seriously considering suicide in the past year.

- 12% said they had made a plan to commit suicide. Again, females were more likely to have made plans than males (14% versus 9%).
 - 9th graders were more likely to make plans than any other grade.
 - 25% of females in 9th grade with parents with less educated had made plans to commit suicide.
- 7% said they had tried to commit suicide. Demographic patterns were similar; females, those from less educated backgrounds, and 9th graders were the most likely to have tried committing suicide.

- Only 1.7% of youth who actually attempted suicide did not make a plan to commit suicide.
- Youth living in homes with a high degree of family conflict were more likely to have tried to commit suicide than youth in homes with less conflict.

Figure 33. Percentage of Students Who Considered Suicide, Made Plans for Suicide, or Attempted Suicide by Gender





Family

Risk Factors

- *Family Management/Supervision*
- *Parental response to antisocial behavior*
- *Family conflict*
- *Family history of antisocial behavior*
- *Parental attitudes towards drugs*
- *Parental attitudes toward antisocial behavior*

Protective Factors

- *Opportunities for parental involvement*
- *Rewards for parental involvement*

RISK FACTORS

The Family Risk factors consist of six scales that measure attitudes and behaviors shown, through prior research, to be associated with youth negative behaviors. They include the extent of parents' attitudes and responses to antisocial behavior (i.e., parental response to antisocial behavior, parental attitudes toward antisocial behavior), drug use (parental attitudes toward drugs), and the behavior occurring within the family (i.e., family management/supervision, family conflict, family history of antisocial behavior). In addition, youth are asked whether anyone in their family has a severe alcohol or drug problem.

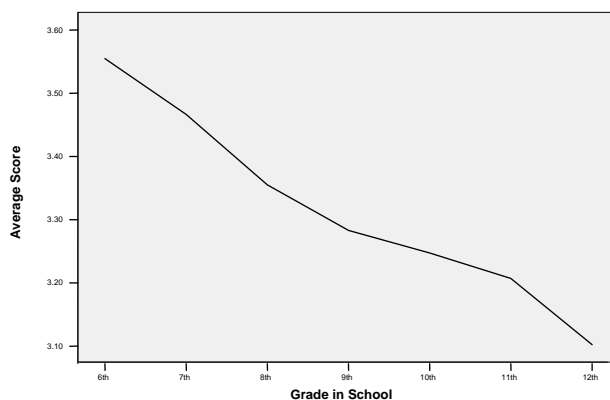
Family Management/Supervision

The Family Management/Supervision scale consists of six items that measure students' perceptions of rules within the family and parental knowledge of child activities.

A higher response indicates a "healthy" response.

- High school students reported *lower* levels of family management and supervision than middle school students as grade levels increased.

Figure 34. Family Management by Grade in School



- Females indicated a *higher* level of family management and supervision than males.
- Students' families in the Eastern region had *lower* levels of management and

supervision than those in all other regions. Students' families in the southwest, southeast, and central regions had *higher* levels of family management and supervision.

- Students' families in rural areas had *higher* levels of family management and supervision than those in metropolitan areas.
- Students whose mothers and fathers had less education had lower family management scores.

Parental Response to Antisocial Behavior

The Parental Response to Antisocial Behavior scale consists of three items assessing students' perceptions of the likelihood of getting caught if one was to drink alcohol, carried a gun, or skipped school.

- Students' parents located in the Eastern region were *less* likely than parents in any other region to respond to antisocial behavior.
- Students' parents in metropolitan areas were *less* likely to respond to antisocial behavior than those in rural areas.
- Older youth reported that their parents were *less* likely to respond to antisocial behavior than younger youth. 81% of 12th graders felt that their parents would catch them if they carried a gun, compared to 91% of 6th graders.

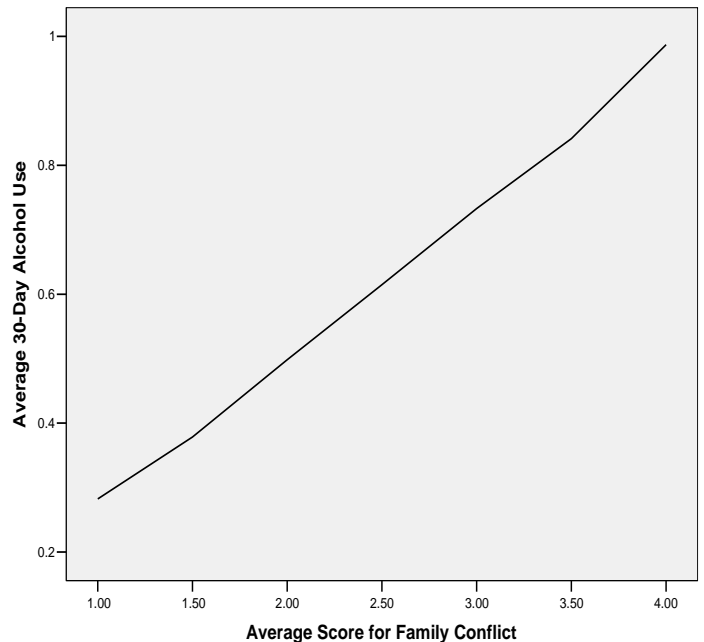
- Males felt that their parents would be less likely to respond to antisocial behaviors than females.

Family Conflict

The Family Conflict scale consists of two items focusing on arguments that occur within the student's family.

Students with higher family conflict were more likely to use alcohol in the past 30 days.

Figure 35. Relationship between 30-Day Alcohol Use and Family Conflict*



*Higher scores indicate higher use and higher family conflict

- Males reported higher levels of family conflict than females.
- Students in the Eastern region reported the highest levels of family conflict; students in the Central and Southwest regions reported the lower levels of family conflict.

- Students in metropolitan areas reported higher levels of family conflict than those in rural areas.
- In general, as students' grade levels increased, they reported higher levels of family conflict. Specifically, students' levels of family conflict increased from 6th grade through 9th grade, then remained constant through the remainder of their high school years.

Family History of Antisocial Behavior

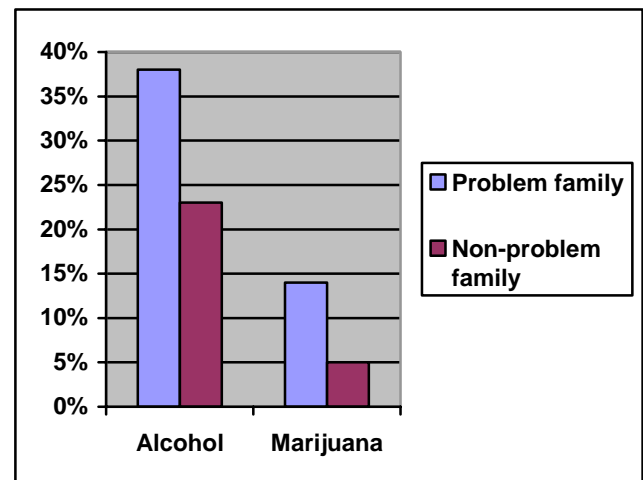
The Family History of Antisocial Behavior scale has six items measuring whether or not a student had any family members who smoked cigarettes or marijuana, drank alcohol, taken a gun to school, or gotten suspended or expelled from school.

- One-third of youth reported that someone in their family had a severe alcohol or drug problem (34%).
- Almost half (48%) reported that a sibling drank beer, wine or hard liquor.
- A little more than one-third reported that a sibling smoked cigarettes (37.5%).
- One-quarter (25.9%) reported that a sibling had been suspended or expelled from school.
- Females were more likely to report that they had a family member with a drug or alcohol problem than males (37% compared to 29%).
- Youth from less educated backgrounds were far more likely to report having a

family member with an alcohol or drug problem. Half of all youth (51%) whose mothers did not have a high school diploma reported a problem in the family, compared to only 27% of those with mothers who were college educated.

- Youth with family members with substance use problems were more likely to use substances.

Figure 36. Youth Who Reported Drinking Alcohol and Using Marijuana Use in the Past 30 Days: Using vs. Non-Using Families

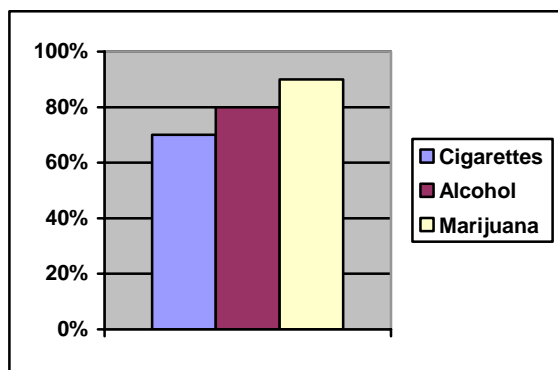


- Students in the Eastern and Southeast regions reported more family history of antisocial behavior than those in all other regions; students in the Central and Southwest regions reported the least amount of antisocial family history.
- Students from metropolitan and rural areas reported equal amounts of family history of antisocial behavior.
- In general, students in higher grades reported more family history of antisocial behavior than those in the lower grades.

Parental Attitudes toward Drugs

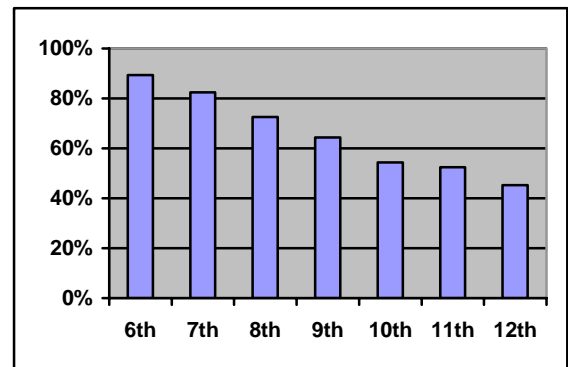
The Parental Attitudes toward Drugs scale consists of three items measuring students' perception of how wrong their parents would think it would be to smoke cigarettes or marijuana, or drink alcohol.

Figure 37. Youth Who Reported That Their Parents Would Feel It Was "Very Wrong" to Use



- Students' perceived their parents to be most disapproving of marijuana, followed by alcohol and then cigarette use.
- Students' parents in rural areas were more disapproving than parents in metropolitan areas; parents in the Northwest and Southwest regions were more disapproving than other parents.
- Parents' approval of substance use was higher among older youth than younger youth.

Figure 38. Parents Would Think It Was "Very Wrong" to Drink by Grade Level



Parental Attitudes toward Antisocial Behavior

In addition to the three items related to parents' attitudes toward substance use, the Parental Attitudes toward Antisocial Behavior scale has three items that measure students' perception of how wrong their parents would think it would be to steal, draw graffiti, or fight.

- Only 60.8% of students believed that their parents would think it was "very wrong" for them to pick a fight with someone.
- 81% felt their parents would think it was "very wrong" to steal something worth more than \$5
- 85% felt their parents would think it was "very wrong" to draw graffiti, write things, or draw pictures on buildings and other property.
- Females reported that their parents have a more negative attitude toward antisocial behavior than did the males.

- Parents of older youth were more approving of antisocial behaviors than parents of younger youth.
- Students’ parents from the Eastern region were the least likely to view antisocial behavior as wrong; students’ parents from the Southwest region were most likely to view antisocial behavior as wrong.
- Students’ parents in metropolitan areas were less likely to disapprove of antisocial behaviors than those in rural areas.

- Students in metropolitan areas had fewer opportunities for parental involvement than those in rural areas.
- Youth with higher family involvement report less alcohol use.

Protective Factors

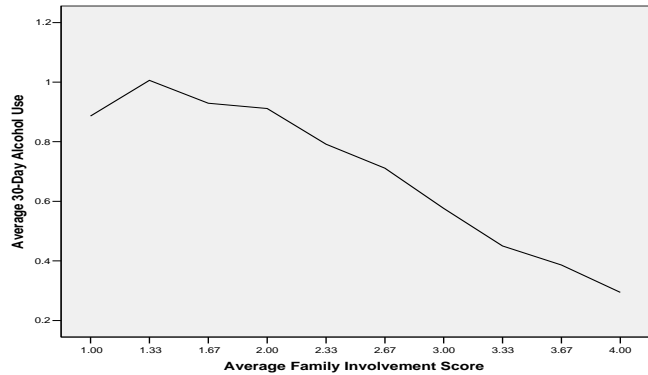
The Family Protective factors consisted of two scales assessing the extent to which opportunities are provided for positive parental involvement and rewards for that involvement.

Opportunities for Parental Involvement

The first of these scales, Opportunities for Parental Involvement, has three items that measure the extent to which students’ are asked to be involved in making family decisions, the ability to ask parents for help, and the chance to do fun things with one’s parents

- Students in the 6th through 8th grades reported more parental involvement than those in the 9th through 11th grades.
- Students from the Eastern region reported less parental involvement than those from all other regions.

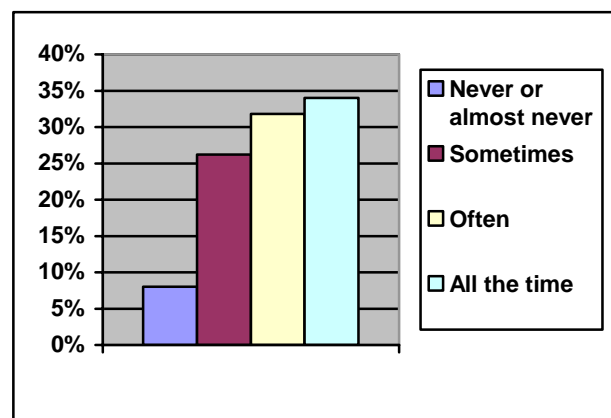
Figure 39. Relationship between 30-Day Alcohol Use and Family Involvement



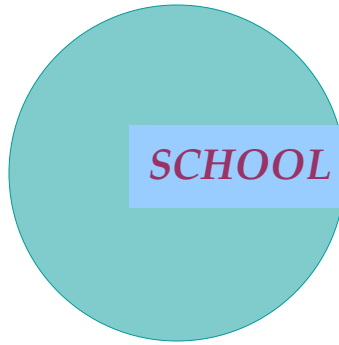
Rewards for Parental Involvement

The Rewards for Parental Involvement scale consists of two items that assess the extent to which students’ parents notice when they are doing a good job, and tell them they are proud of them.

Figure 40. “How Often Do Your Parents Tell You That They Are Proud of You for Something You Have Done”



- Students from the Central and Southwest regions reported more rewards for parental involvement than those from the other three regions. Students from the Eastern region had the least amount of rewards for parental involvement.
- Students in metropolitan areas reported fewer rewards for parental involvement than those in rural areas.
- Students in the 6th – 8th grades reported more rewards for parental involvement than those in the 9th – 12th grades.
- Whites and African Americans reported more rewards for parental involvement than Latinos or those of other races.
- Females reported more rewards for parental involvement than males.



School Risk and Protective Factors

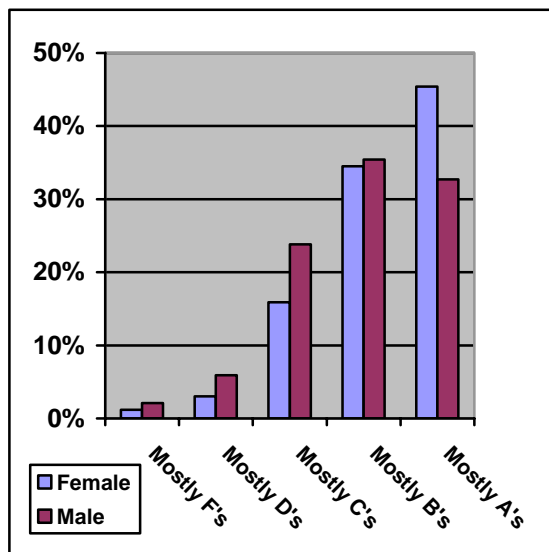
- *Academic performance*
- *Absenteeism*
- *School commitment*
- *Opportunities for school involvement*
- *Rewards for school involvement*

The MSS explores several school-related risk and protective factors, including academic performance, absenteeism, school commitment, opportunities for school involvement, and rewards for school involvement. These measures have all been shown to enhance adolescent youth development and reduce and/or delay substance use and other negative behaviors.

Academic Performance

Youth were asked to assess their performance in school the previous year.

Figure 41. Self-Reported School Performance: Male and Female



- Most youth reported receiving mostly "A's" or "B's". Females reported higher grades than males.
- Youth who reported fighting were more likely to report lower grades.

Absenteeism

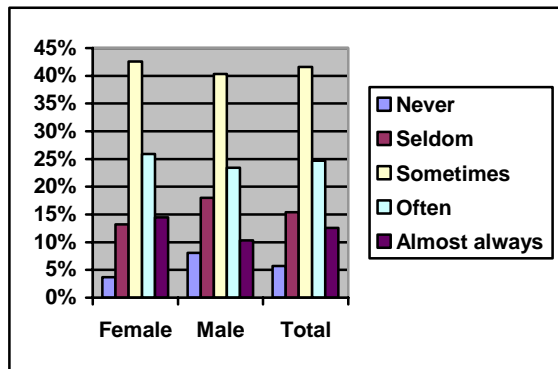
Youth were asked how many days they had missed school due to illness, because they had skipped or cut, or for other reasons.

- 42.8% of youth reported missing one or more days due to illness. Females were slightly more likely to report being out of school due to illness than males.
- 17.1% of youth reported missing one or more days because they had skipped or cut school. There were no differences between males and females.
- Youth who reported 30-day cigarette, alcohol or marijuana use were more likely to have skipped school than non-users.

School Commitment

The School Commitment scale consists of four items focusing on the extent to which students enjoyed school, tried to do their best work, and felt that their school work was meaningful and important.

Figure 42. “How Often Do You Feel That School Is Meaningful and Important?”



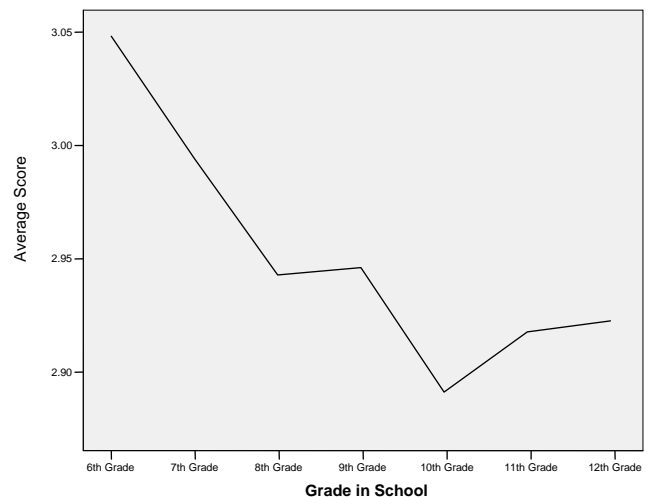
- Females were more committed to school than males, and rural youth were more committed than metropolitan youth. School commitment was lower among high school youth than middle/junior high school youth.
- African American students had higher school commitment than all other race/ethnicities.

Opportunities for School Involvement

The Opportunities for School Involvement scale has five items that measure the extent to which students are asked to be involved in decisions made in the classroom, classroom projects, and school and classroom activities.

- Females indicated more opportunities for school involvement than males.
- Students in rural communities indicated more opportunities for school involvement than those in metropolitan communities.
- Youth in the Eastern region indicated fewer opportunities for school involvement than students in other regions.
- Students in the Central and Northwest regions indicated more opportunities for school involvement.
- Opportunities for school involvement decreased steadily from 6th through 8th grade.
- High school youth indicated fewer opportunities for school involvement than middle school youth.

Figure 43. Opportunities for School Involvement by Grade



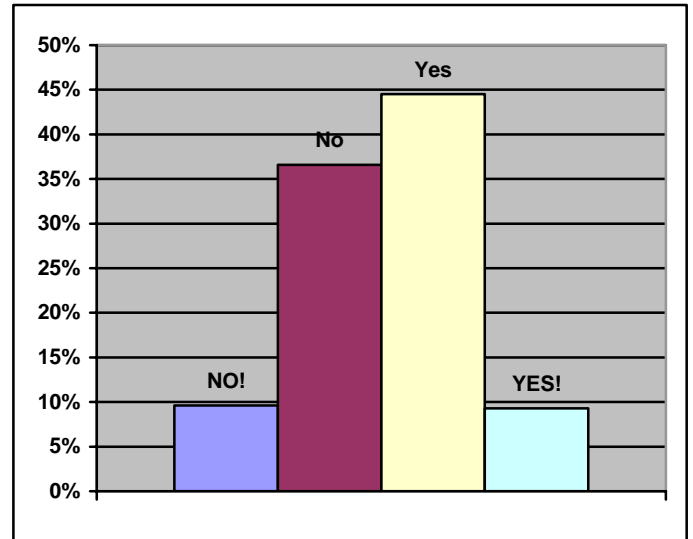
- Latino students and students of other races indicated fewer opportunities for school involvement than Whites and African Americans.

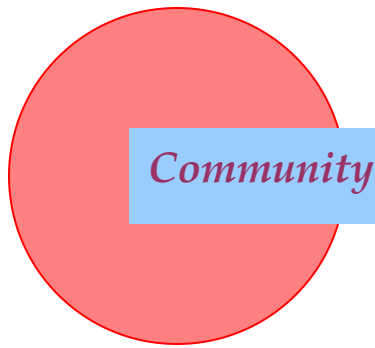
Rewards for School Involvement

The Rewards for School Involvement scale measures the extent to which students' teachers notice when they are doing a good job, and praise them when they are doing well.

- Females reported more rewards for school involvement than males.
- Rural students and those not in the Eastern region of the state reported fewer rewards for school involvement than other students.
- As with the school commitment and opportunities for school involvement scales, rewards for school involvement steadily decreased from 6th through 9th grade and then remain steady in 9th through 12th grades.
- African American students indicated more rewards for school involvement than students of any other race/ethnicity.

Figure 44. My Teachers Praise Me When I Work Hard in School





Risk Factors

- *Community disorganization*
- *Neighborhood attachment*
- *Drug use norms*
- *Drug use laws*
- *Drug availability*

Protective Factors

- *Opportunities for community involvement*
- *Rewards for community involvement*

Risk Factors

The Community Risk factor has five scales that measure disorganization of the community to the extent of the students' attachment to their neighborhood, drug use norms and laws, and drug availability.

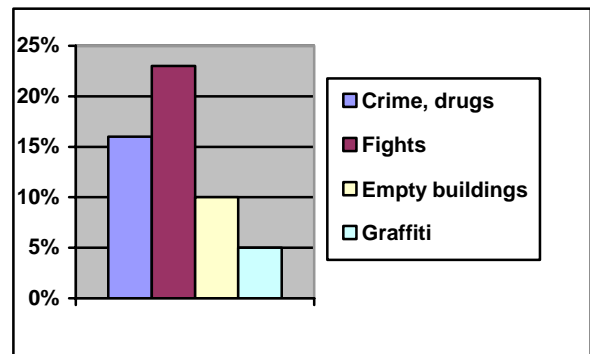
Community Disorganization

Community Disorganization has four items assessing the presence of crime (e.g., drug selling), fights, abandoned buildings, and graffiti in students' neighborhood.

- Fights in the neighborhood were reported most often, followed by crime and/or drug selling. Graffiti was seen least often.
- Community disorganization was lowest in the Northwest and Southeast regions.
- Students in metropolitan areas indicated a higher amount of community disorganization than students in rural areas.

- From 6th through 8th grade, perception of community disorganization declined steadily.

Figure 45. Percentage of Students with Positive Responses to Community Disorganization Items



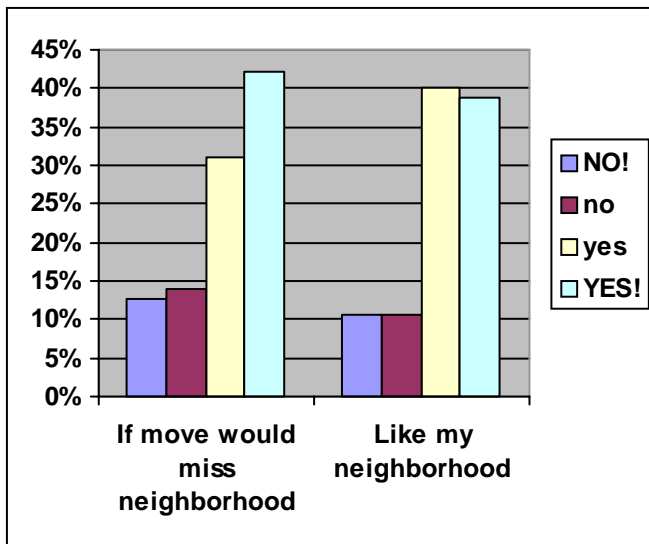
Neighborhood Attachment

The second scale, Neighborhood Attachment, has two items measuring the extent to which students like the neighborhood they now live in and would miss it if they were to leave.

- Most students felt attached to the neighborhoods in which they lived.

- Students in the Central region indicated a higher level of neighborhood attachment than students in any other region.
- Students in rural areas had higher levels of neighborhood attachment than those in metropolitan areas.
- The level of neighborhood attachment steadily decreased from 6th through 9th grade.
- Male students had a higher level of neighborhood attachment than female students.

Figure 46. Neighborhood Attachment



In addition to the questions about neighborhood attachment, youth were asked if they had changed schools in the past year. 17% reported that they had changed schools. Sixth, seventh and ninth graders reported the highest percentage of changes (19% for each group), undoubtedly due to transitions that occurred in moving from elementary to middle and junior high schools, and from middle school to high

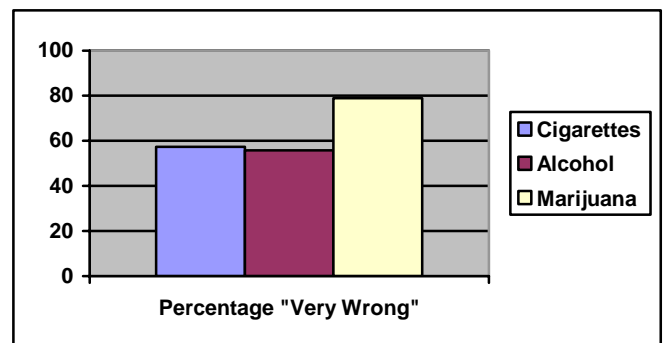
school. Twelfth graders were least likely to report changing schools (7%).

Drug Use Norms

The Drug Use Norms, the third scale, has three items focusing on students' perception of the attitudes of the adults in their neighborhood toward cigarettes, marijuana, and alcohol.

- Adult neighbors felt that marijuana was considerably more wrong than cigarettes or alcohol.
- Older youth perceived their adult neighbors to be more accepting of use than younger youth.
- Students in the Central, Eastern and Southeast regions felt their adult neighbors were more favorable toward the use of drugs than students in the Northwest and Southeast regions.
- Students in rural areas felt their adult neighbors were less accepting of marijuana use of drugs than students in metropolitan areas.

Figure 47. Adult Neighbors Perceptions of Substance Use: Percentage Who Felt It Was "Very Wrong"

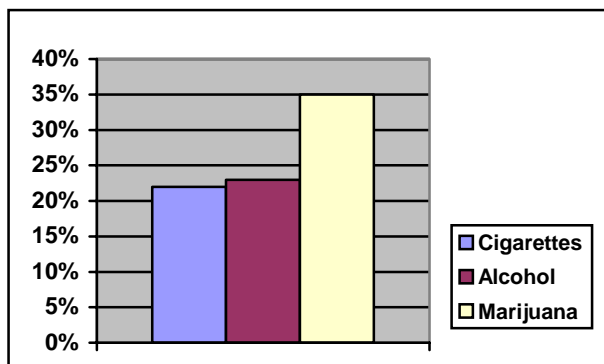


Drug Use Laws

The Drug Use Laws scale has three items that assess whether youth who smoke cigarettes or marijuana, or drink alcohol would get caught by the police.

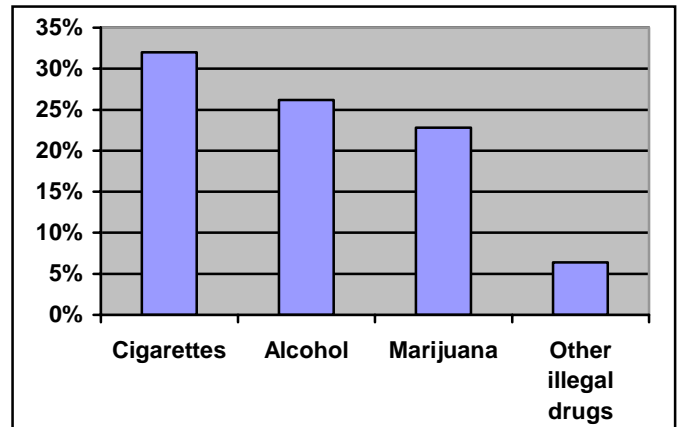
- Students perceived the police to be more permissive toward cigarette and alcohol use than marijuana use.
- Students in higher grades reported less likelihood of being caught by the police than students in lower grades.
- Students in metropolitan communities indicated less likelihood of getting caught by the police for using than those in rural communities.
- African American students reported a greater likelihood of getting caught by the police than students of any other race/ethnicity. Latino students and students of other races reported less likelihood of getting caught by the police than Whites and African American.

Figure 48. Youth Who Felt They Would Be Caught by Police for Substance Use



- Males indicated a greater likelihood of getting caught by the police for using substances than females.

Figure 49. Youth Who Reported Drugs Were Very Easy To Obtain



Drug Availability

The final scale, Drug Availability, has five items that measure the accessibility of obtaining cigarettes, alcohol, marijuana, other drugs, and guns.

- Cigarettes were easiest to obtain, and illegal drugs other than marijuana were hardest to obtain.
- Females indicated that drugs were more available to them than males.
- Students in the metropolitan areas and the Eastern region reported that drugs were more available to them than other students, as did older youth.
- Drug availability did not vary by race/ethnicity.

Protective Factors

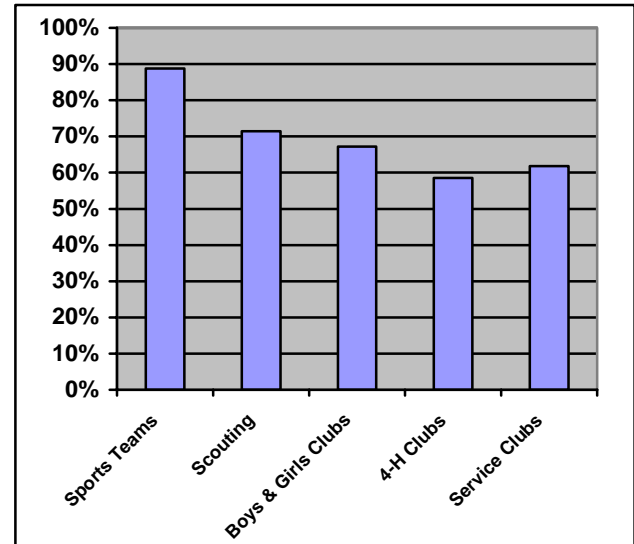
There are two Community Protective scales: one measures the extent to which opportunities are provided for positive community involvement, and the other measures rewards for that involvement.

Opportunities for Community Involvement

The Opportunities for Community Involvement scale has five items assessing the extent to which community activities, such as sports, scouting, boys and girls clubs, 4-H clubs, and service clubs are made available for students to join.

- Students in the Eastern region indicated fewer opportunities for community involvement than students in any other region; students in the Central region indicated more opportunities for community involvement than students in any other region.
- Students in metropolitan communities indicated fewer opportunities for community involvement than students in rural communities.
- African American and White students indicated fewer opportunities for community involvement than Latino students and those of other races.
- Females indicated slightly more opportunities for community involvement than males.

Figure 50. Percentage of Youth Reporting Availability of After-School Activities



Rewards for Community Involvement

The Rewards for Community Involvement scale consists of four items that focus on the extent to which students' neighbors notice, are proud, and encourage them to do a good job, as well as are available to talk to them about important issues.

Figure 51. "There are people in my neighborhood, or the area where I live, who are proud of me when I do something well"

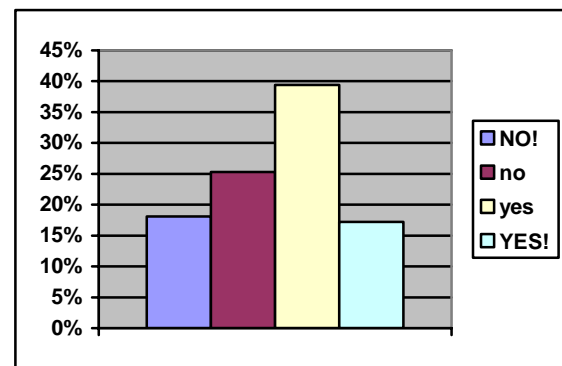
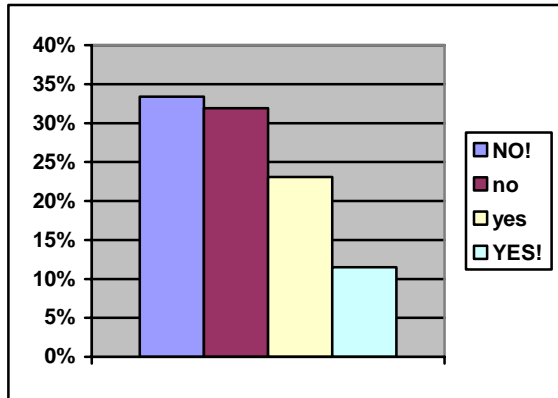
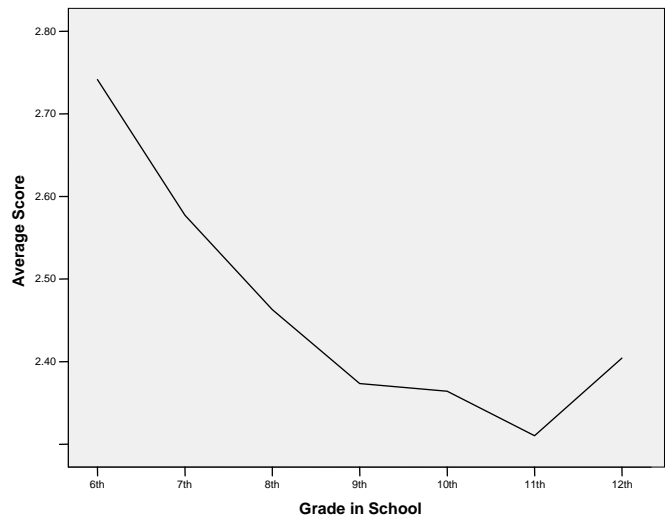


Figure 52. "My neighbors notice when I am doing a good job and let me know about it"



- There was considerable variation in the degree to which youth felt that their neighbors offered them support and were available to them. A majority of youth felt there were people in their neighborhood who were proud of them if they did something well; there were fewer youth who felt that their neighbors noticed when they did a good job and told them so.
- Students in the Eastern region indicated fewer rewards for community involvement than those in all other regions; students in the Central region perceived greater rewards for community involvement than those in all other regions.
- Students in rural areas felt more neighborhood support than students in metropolitan areas.
- Older youth felt less rewarded by their neighbors than younger youth.

Figure 53. Rewards for Community Involvement by Grade in School





Summary

This report has summarized the major findings from the 2004 Missouri Student Survey. Analyses have included descriptive information on substance use patterns and patterns of risk and protective factors for Missouri's teens, and have demonstrated the strong relationship between risk and protective factors and substance use. Subsequent papers will explore more fully the interrelationship between the risk and protective factors and substance use, and also explore incidence and prevalence rates for specific substances by specific subpopulations in more depth.



Additional References

Centers for Disease Control and Prevention. Office of Communication. (May 20, 2004). Despite Improvements, Many High School Students Still Engaging in Risky Health Behaviors. *Centers for Disease Control and Prevention Press Release*. Retrieved September 1, 2005, from the World Wide Web:
<http://www.cdc.gov/od/oc/media/pressrel/r040520b.htm>

Centers for Disease Control. National Center for Chronic Disease Prevention and Health Promotion. (n.d.). Tobacco Information and Prevention Source (TIPS). Retrieved September 15, 2005, from the World Wide Web:
<http://www.cdc.gov/tobacco/issue.htm>

National Institute on Drug Abuse. (n.d.). NIDA InfoFacts: High School and Youth Trends. Retrieved September 15, 2005, from the World Wide Web:
<http://www.nida.nih.gov/Infofacts/HSYouthtrends.html>

Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance—United States, 2003 [Online]. (2004b). National Center for Chronic Disease Prevention and Health Promotion (producer). Available from: URL:
<http://apps.nccd.cdc.gov/yrbss/CategoryQuestions.asp?cat=1&desc=Unintentional%20Injuries%20and%20Violence>. [Cited 2005 Jan 14].