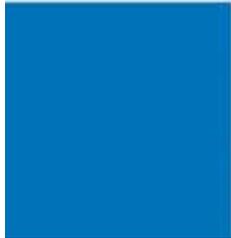


SPIRIT

FIRST YEAR REPORT

**Prepared for
Missouri Department of Mental Health
Division of Alcohol and Drug Abuse**

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Introduction

During FY2003, the **S**chool-based **P**revention **I**ntervention and **R**esources **I**niTiative (SPIRIT) was implemented as a pilot project in five school districts in five different regions of Missouri. **SPIRIT** proposes to delay onset and decrease use of substances, improve overall school performance, and reduce incidents of violence. Program outcomes are achieved through implementation of evidence-based prevention programs in kindergarten through 12th grades. This unique pilot project is a joint program of the Division of Alcohol and Drug Abuse, Department of Mental Health (DMH) and the Department of Elementary and Secondary Education (DESE). It engages schools, substance abuse providers and the DMH in prevention activities. The Missouri Institute of Mental Health (MIMH) is conducting the project evaluation.

The five school districts participating in SPIRIT are: Hickman Mills C-1, Jennings, Knox Co. R-I, New Madrid Co. R-I, and Carthage R-IX. Schools chose their substance abuse prevention interventions from a menu of model programs. For the first year of the project, four prevention interventions were chosen jointly between the schools and the providers: PeaceBuilders; Positive Action; Life Skills Training; and Reconnecting Youth. One provider agency per district was selected, through competitive bid, to partner with the schools. Providers are responsible for implementation of the intervention and data collection. School districts, however, can choose to have either providers or teachers deliver the curricula.

Although the methods, components, targeted behaviors, and comprehensiveness of the programs differ, the goals of all of the selected model intervention programs are the same. They are to have an impact on substance use, the age of onset of substance use, school attendance, school performance, and incidents of violence. Two of the selected programs, PeaceBuilders and Positive Action, target the entire school community and, in addition to effecting change in the individual student, seek to change the climate in the larger domain. Other programs, like Life Skills Training and Reconnecting Youth, primarily target the individual domain. Since only the individual and school components were implemented during the first year, evaluation instruments established a common baseline for meaningful assessment of program impact on an individual level, within and across the school districts, and on the common, defined goals.

Measuring the progress of SPIRIT presents methodological challenges. There are multiple programs in several school districts with various amounts of time available, a range of grades (K-12), and different persons delivering the intervention (teacher vs. provider). Thus instead of an evaluation where we are measuring the effects of a single program across sites, the study is essentially multi-site because of these differences in programs, districts, geographic locations, class time schedules, and program implementers. These differences are factors that must be taken into account in the future as data are analyzed.

Three types of data were collected: individual, school, and program fidelity. This first year report will not include information on fidelity, which refers to how completely program implementation resembles program design.

Individual level data are collected from or about individual students who give assent and who have parental permission to participate in the evaluation. Data collection instruments and the types of information gathered are age appropriate and vary depending on the grade. For children in Kindergarten through 3rd grade, teachers complete observation checklists for children. Students in 4th and 5th grades complete a self-report survey, as do students in 6th through 12th grades. Additional school level data were collected on each individual student. School level data include the student's grades, achievement test scores, school attendance, suspensions, incidents of violence, race, age, and gender.

In this first year report, we present data from 1,110 students who were included after logic checks and honesty questions were analyzed, and who completed evaluation instruments at two points in time—the beginning of the program and the end of the school year. Because implementation occurs at different times in different grades, the amount of time since students received the intervention differs across sites depending on the length of the program. The number (or “n”) for each graph changes depending upon grade level and completion rates of questions. **Any results presented in this report should be interpreted with caution since this was the pilot year of the project and there were many first year implementation problems, as is the case with new programs.**

Highlights:

From Time 1 to Time 2, there was a slight increase in the percentage of middle school youth reporting 30-day substance use. High school students, however, showed a noticeable percentage decrease for all substances.

The number of students in grades 4 and 5 scoring low on external and internal assets decreased from Time 1 and Time 2, which indicates positive changes and higher resilience.

While the number of disciplinary incidents for middle school youth increased, they decreased for elementary and high school students from Time 1 to Time 2.

Grade point average increased slightly for both middle and high school students at Time 2.

The average number of days absent in Time 2 decreased for all grade levels, most noticeably for middle school students.

For K – 3rd grades, moderate aggressiveness increased while low aggression decreased over time.

For 4 – 5th grades, bullying behavior increased from Time 1 to Time 2. There are many possible explanations for this change, such as more honest answers, ‘normal’ maturation, program failure, or an increased awareness of the issue by introduction of the programs.

There was an increase in the number of children (4th and 5th graders) reporting they had not brought a gun to school, and with a slight increase in the percentage of children who saw weapons in school.

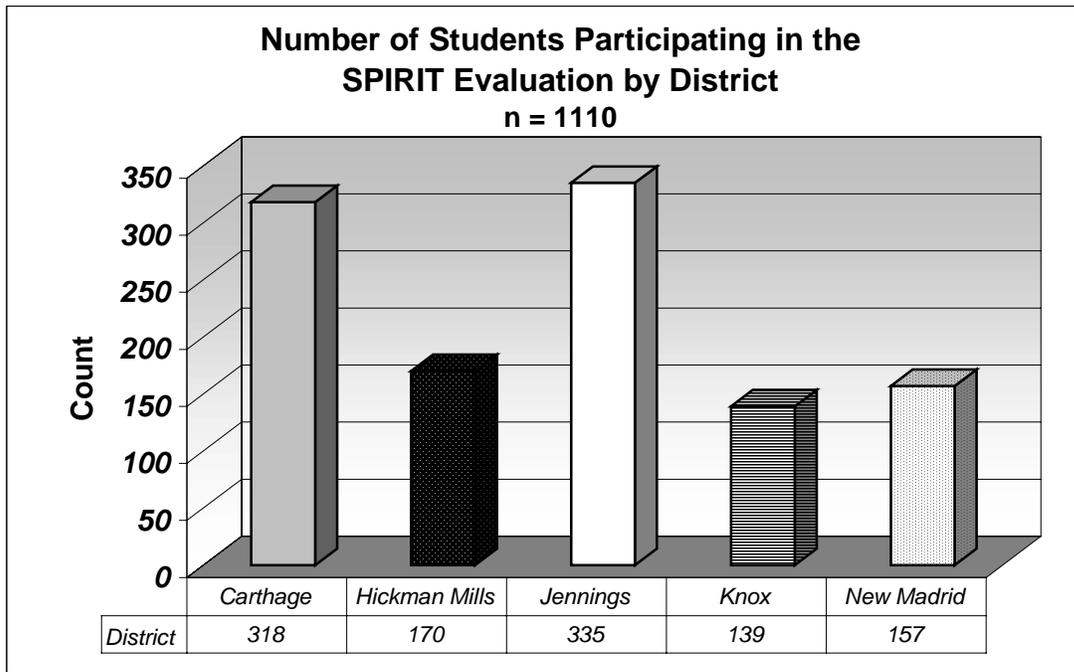
Among the 4th and 5th graders, there were two areas of improvement in the risk and protective factors. A smaller percentage of students scored low at Time 2 on school, home, and peer environmental protective factors. There was improvement in problem solving, empathy, and goals and aspirations.

Total Student Participant Characteristics, Grades Kindergarten through 12

This first section of the report describes the characteristics of students participating in the SPIRIT evaluation. Data at two points (Time 1 and Time 2) are available for a total of 1,110 students.

Figure 1 displays the number of students participating in the evaluation by district for whom there are data at Time 1 and Time 2. Time 1 (baseline) student questionnaires were collected, for the most part, at the beginning of the school year (Fall '02), and Time 2 (follow-up) were collected at the end of the school year (Spring, '03). Approximately 78% of the youth who completed the first survey also completed the second. Fourteen (14) of these 1,133 students who completed both Time 1 and Time 2 surveys, were eliminated after logic checks of the data were conducted and another 9 had missing data for the district variable.

Figure 1. Number of students participating in the SPIRIT evaluation by district.



The majority of students with data was in the 6th through 12th grades and was female (Figure 2, below). Note that information on gender is available for only 1,054 students; data were missing for 56.

Figure 2. Number of students participating by grade and gender, Time 1-2

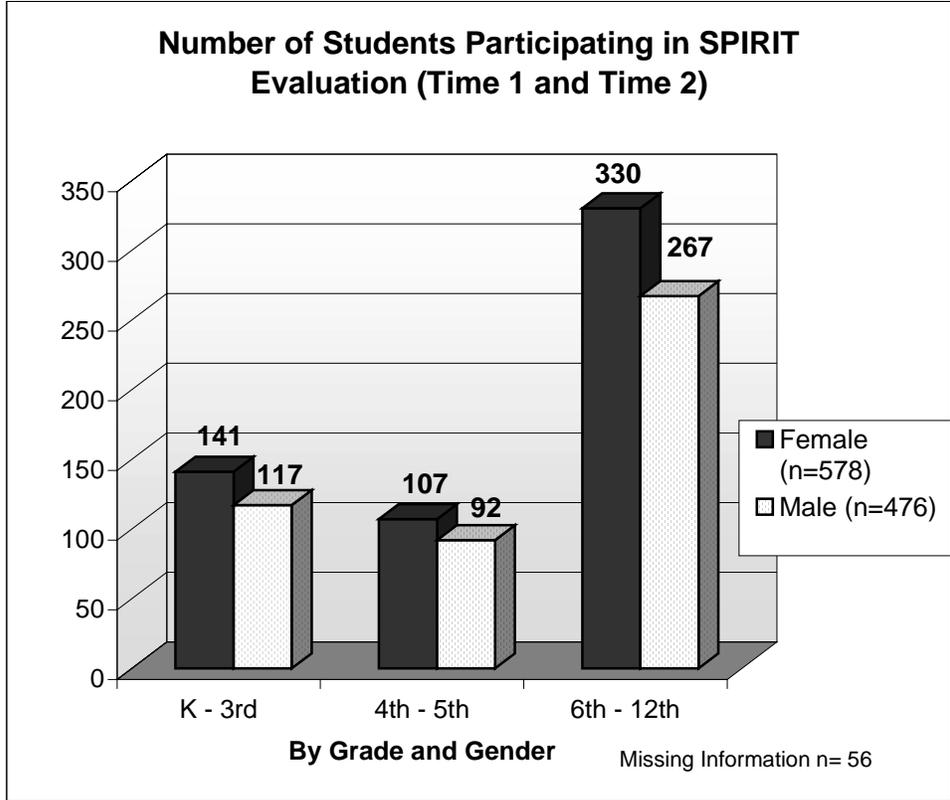
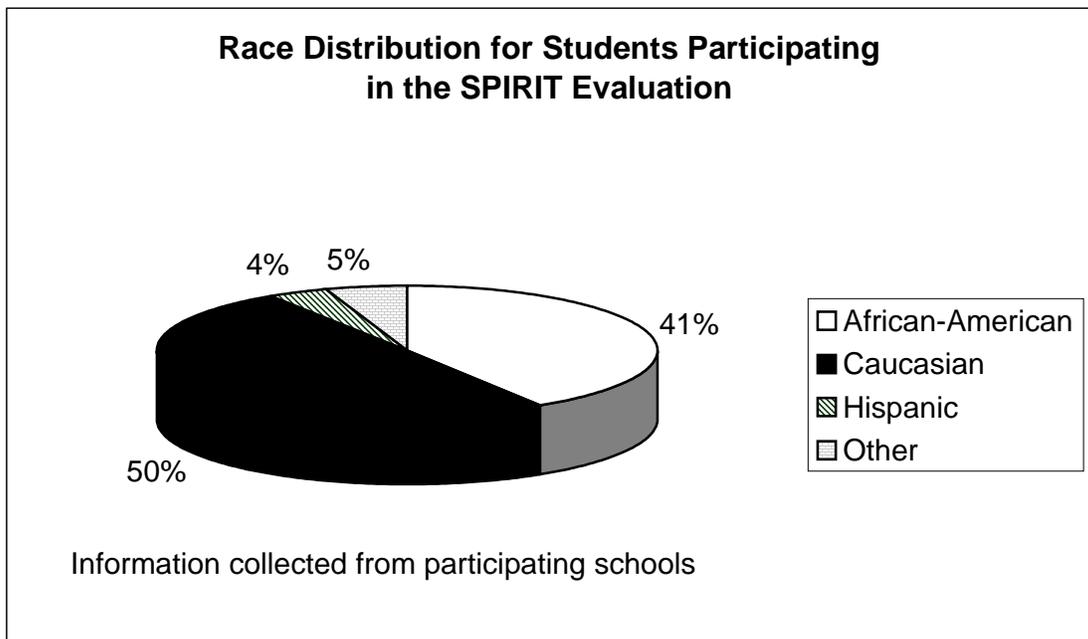


Figure 3 shows that half of the sample is Caucasian and there is an overrepresentation of African Americans (41%) in comparison to that in Missouri’s population. An additional 4% of the sample was Hispanic, with “other” as the remaining 5%.

Figure 3. Percent of students by race, all grades.



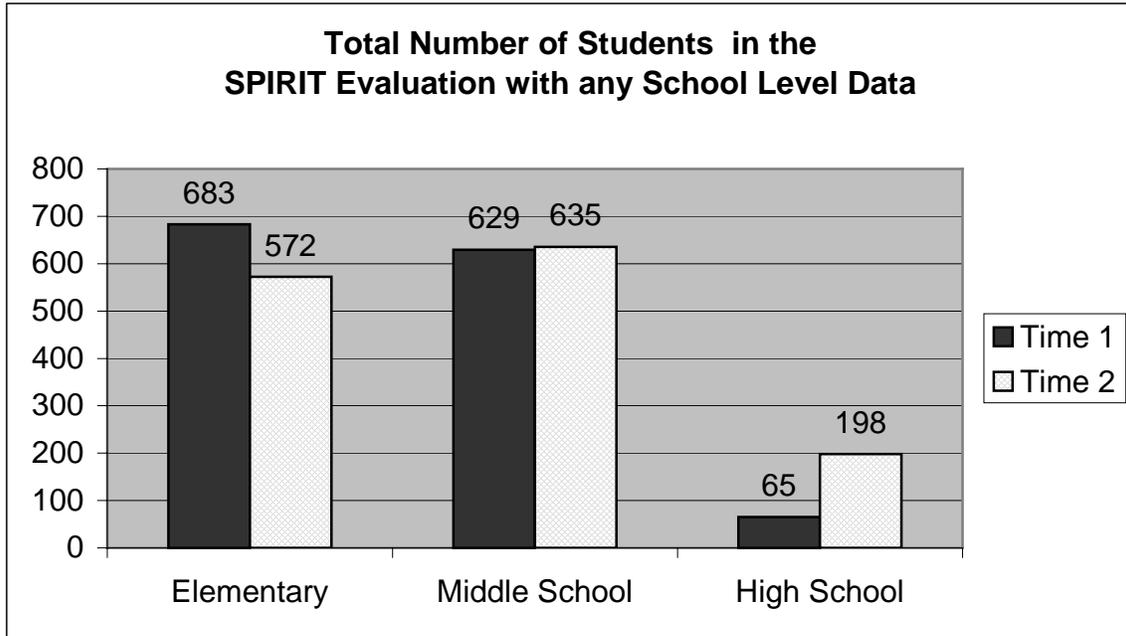
School level data

School level data were collected on all students participating in the SPIRIT evaluation, regardless of their degree of completion of both Time 1 and Time 2 questionnaires.

School level data are the most difficult to interpret. Many factors account for this. Disciplinary policies, their interpretation and implementation, vary across districts and even across schools. The same is true for absence policies. As a result, the implications of these data are difficult to determine. In addition, there are only 215 students for whom we have complete data for both years on all variables (GPA, absences, and disciplinary actions).

To compare school data, Time 1 was defined as the school year prior to the implementation of SPIRIT, 2001-2002; Time 2 was the first year of SPIRIT, 2002-2003. Note: From Time 1 to Time 2, many students shifted from one school level to another (i.e. from elementary to middle school and from middle to high school).

Figure 4. Total number of students in the SPIRIT Evaluation with any school level data.



Kindergarten through 3rd Grades

Determining how well the programs were going for these young children was a difficult measurement problem both in terms of how and what to assess. We used instruments in which teachers rated how well these young students were doing on social competence and aggression, two factors that might be related to behavior problems in the future.

The Social Competence Scale has three subscales: pro-social, communication, and emotional regulation skills. For the purpose of this analysis, we are using only the total scale score. As shown in Figure 5, students' social competence remains essentially the same from Time 1 to Time 2.

The Aggression Scale distinguishes between two types of aggression: proactive and reactive. Proactive aggression is initiated by the child without provocation (Figure 6); reactive aggression is a response to real or perceived behavior of another person (Figure 7). Figure 6 displays the change in proactive aggressive behavior from Time 1 to Time 2. Overall, moderate aggressiveness increased, while low aggression decreased over time. The percentage of young students who scored low in reactive aggression decreased over time (Figure 7). Those scoring medium and high levels of both pro-active and reactive aggression increased, which might be expected developmentally. It should be noted that there is a very small percentage of children scoring high in proactive aggression.

Figure 5. Percent of students in grades K-3 scoring low to high on social competence, Time 1-2.

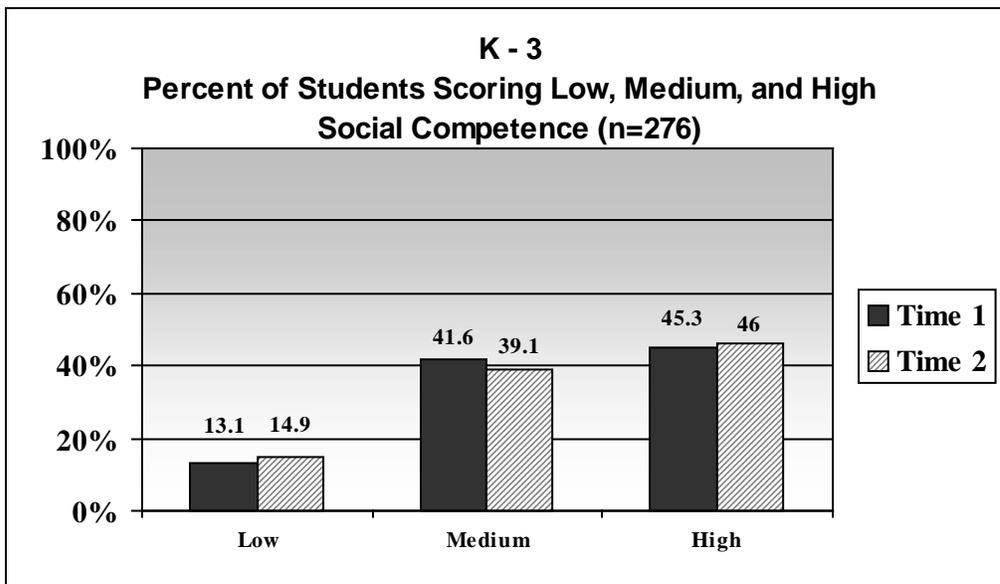


Figure 6. Percent of students in grades K-3 scoring low to high on proactive aggression, Time 1-2.

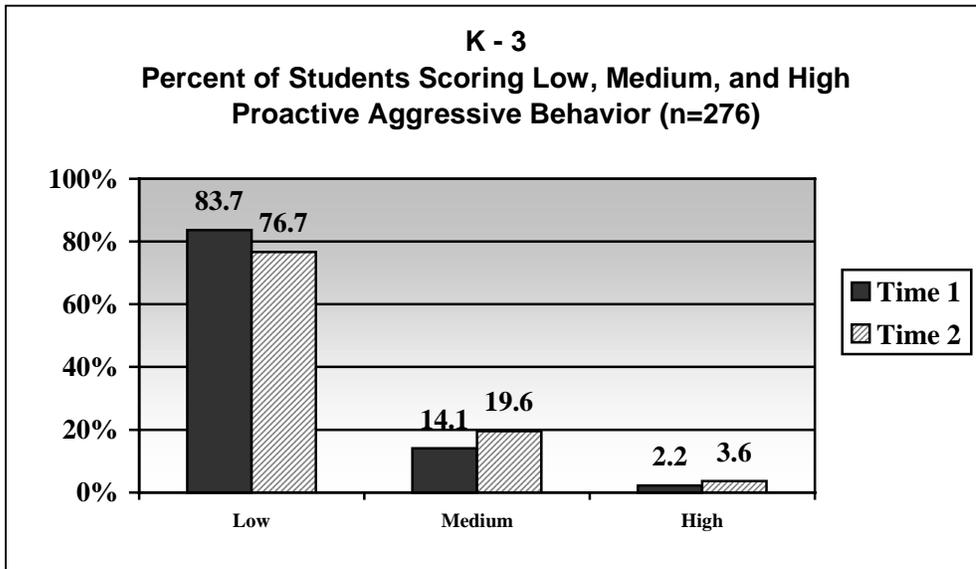
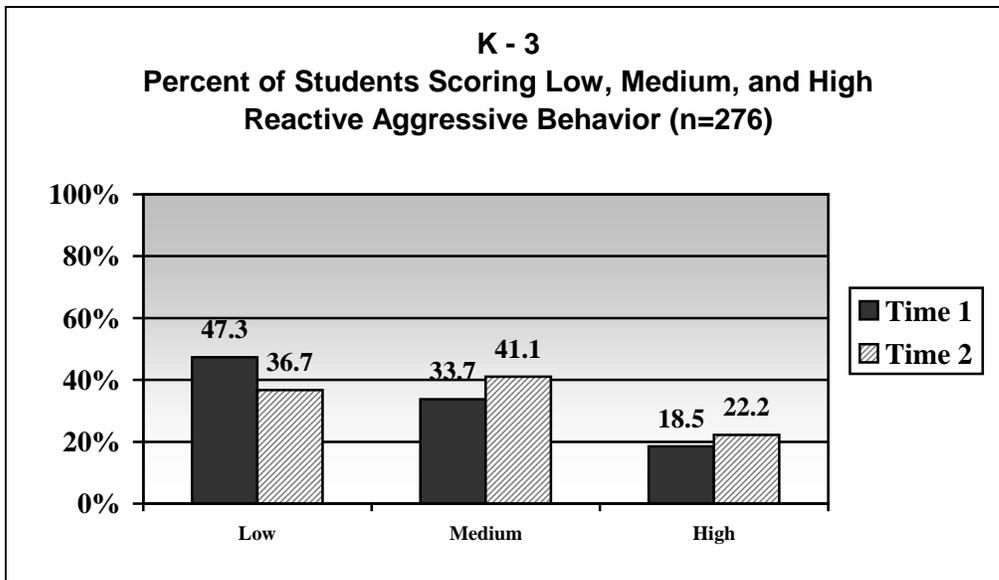


Figure 7. Percent of students in grades K-3 scoring low to high on reactive aggression, Time 1-2.

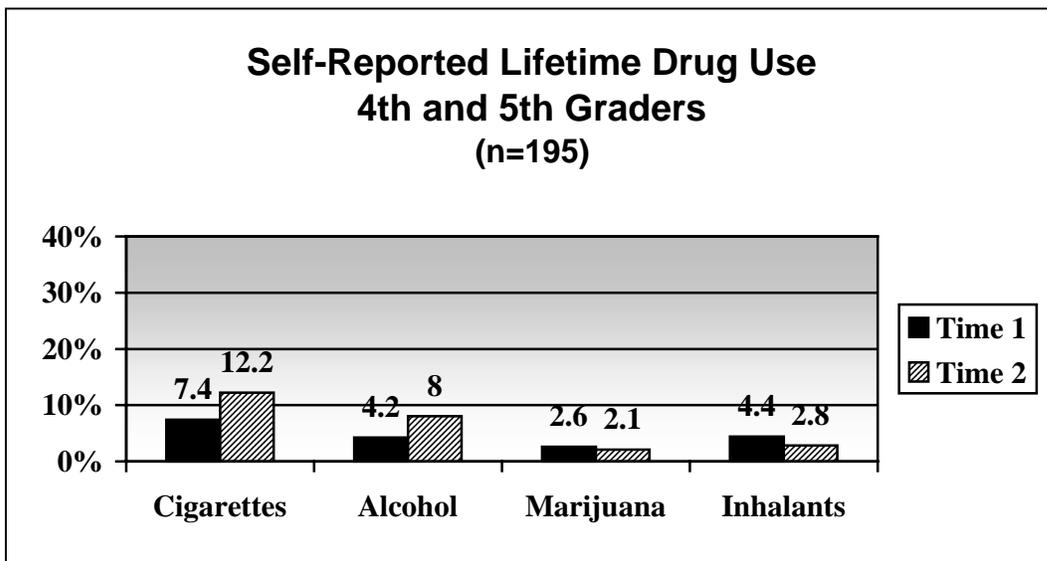


4th and 5th Grades

For students in grades 4-5, the California Healthy Kids Survey (CHKS) was used to measure outcomes. The self-report questionnaire has questions pertaining to risk and protective factors and substance use that are similar to the *Missouri Student Survey* being used in upper grades. The language and content, however, are more appropriate to reading and comprehension levels expected in the 4th and 5th grades.

Unlike the 6th through 12th grades, 30-day substance use data are not available for the 4th and 5th graders. A small percentage of students reported lifetime use of substances, however. As Figure 8 shows, the use of cigarettes and alcohol increased slightly, but marijuana and inhalant use decreased.

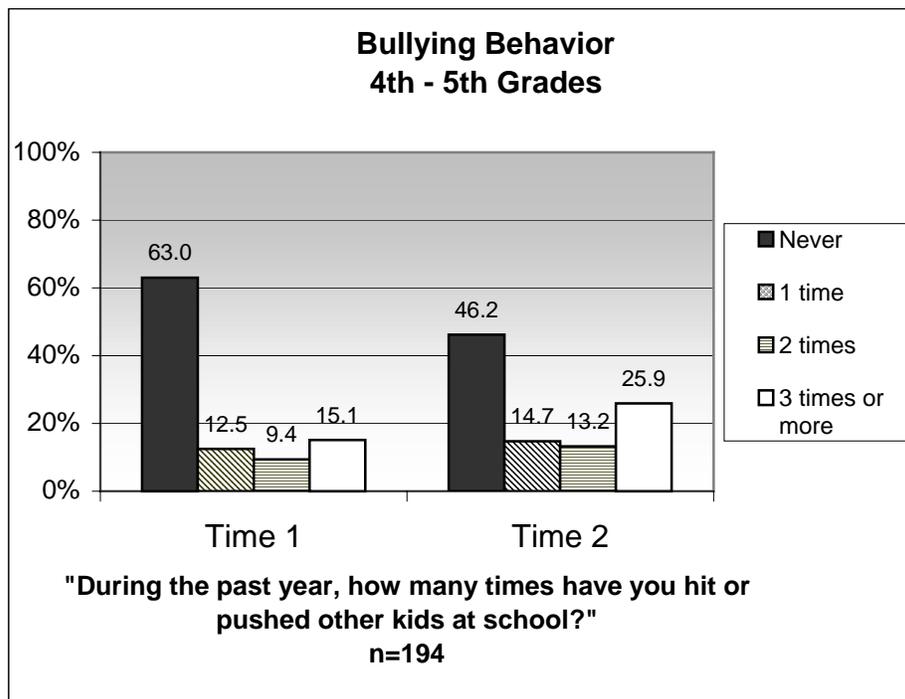
Figure 8. Percent of self-reported lifetime drug use of students in grades 4-5, Time 1-2.



Violence and Bullying Behavior

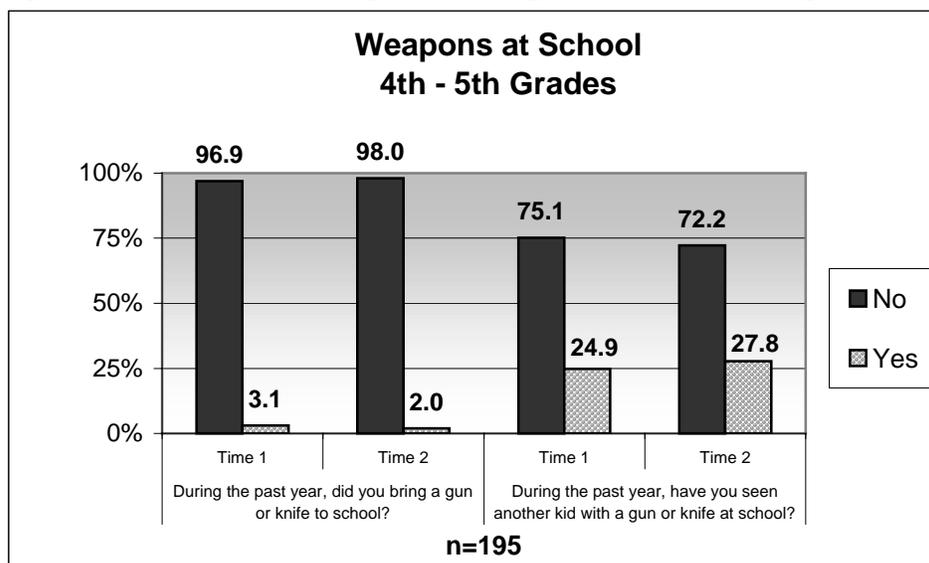
Measures such as violence and bullying behavior and internal and external assets can be used to examine children in these grades. Two questions on the CHKS are used to measure behavior related to bullying and violence. Bullying behavior increased over time, with a smaller percentage of children indicating that they never bullied at Time 2 than Time 1 (Figure 9). This increase could be due to many factors including those related to development, more honesty in answering survey questions in Time 2, school environment, or the short amount of time available for implementing programs in the first year. More data over a longer time may yield different results.

Figure 9. Percent of 4th and 5th graders who report bullying, Time 1-2



Conversely from Time 1 to Time 2 (Figure 10), there was a small increase in the number of children reporting that they had not brought a gun to school in the last year. A slight increase occurred in the percentage of children who saw weapons in school during the year.

Figure 10. Percent of 4th-5th graders who possessed or saw weapons at school, Time 1-2.



4th and 5th Grades: External and Internal Assets

CHKS uses the idea of “external and internal assets,” sometimes described as “protective factors,” to understand developmental outcomes for youth. Internal assets include empathy, problem solving, and goals and aspirations. External assets quantify student’s perceptions of caring relationships, high expectations, and opportunities for meaningful participation across four broad environments: school, family, community, and peer.

As a general rule for understanding, youth who report low levels of internal and external assets also report higher levels of risky behaviors. Conversely, reports of high levels of assets correspond with lower reported involvement in risky behaviors. Prevention programming seeks to increase protective factors, while also reducing risk factors amenable to change, with the long-term goal of decreasing youth involvement in problem behaviors such as substance use. To learn about program impact on “high risk youth,” who are defined as those scoring lowest on the asset scales, comparison is made between Time 1 and Time 2 student reports.

The preliminary results of the SPIRIT Initiative suggest that the programs are having a positive impact in the very early stages on 4th and 5th graders as shown by decreased a percentage of low scoring students across all assets at Time 2. Changes in the external asset, “school environment,” are of particular note as the need to increase school bonding relates to all of the SPIRIT goals (Figure 11 below).

Figure 11. Percent of 4th and 5th graders reporting low external assets, Time 1-2.

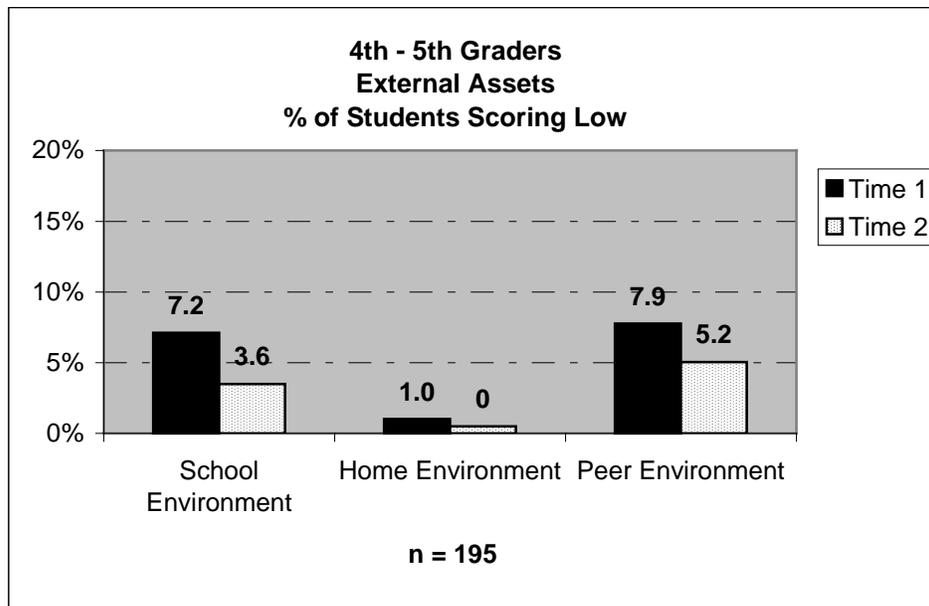
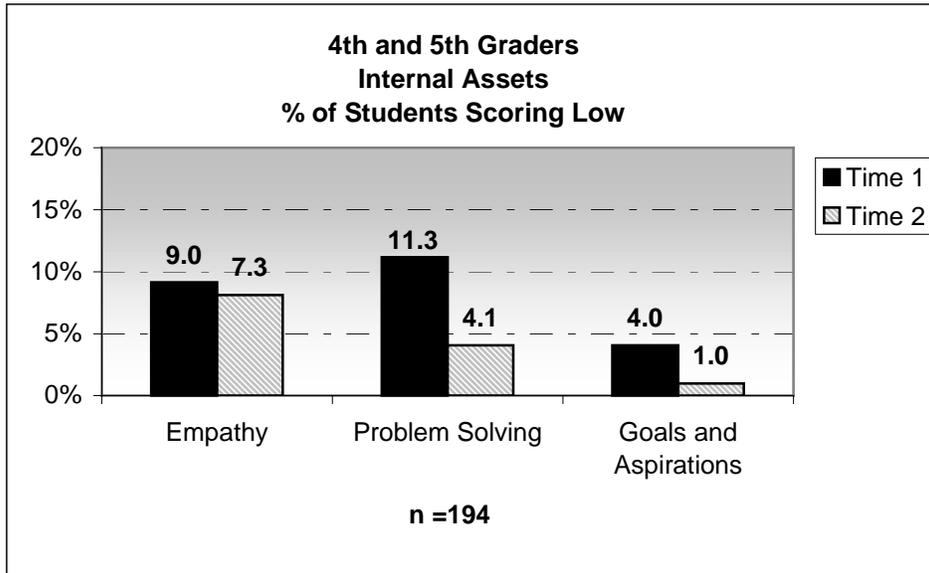


Figure 11 shows that a smaller percentage of students scored low at Time 2 on school, home and peer environments. This means that students perceived more meaningful participation and caring relationships at school and at home. Questions such as the following are used to measure external assets: “Do you do things to be helpful at school?”; “Do you get to make rules or choose things to do at home?”

These same differences were seen in the percentage of students scoring low on internal assets from Time 1 to Time 2 (Figure 12). There was an improvement in problem solving, empathy, and goals and aspirations.

Figure 12. Percent of 4th and 5th graders scoring low on internal assets, Time 1-2.



Kindergarten through 5th Grades: School Level Data

School level data for elementary grade students were available for absences and disciplinary incidents. Grades were not available for students at the elementary level. Figure 13 displays the percentage of students who had absences in Time 1 (2001-2002) to Time 2 (2002-2003). Absences remained constant in the mid-range while decreasing slightly in the lowest range (0) and top most range (10+).

Figure 13. Percent of absences for elementary school students, Time 1-2.

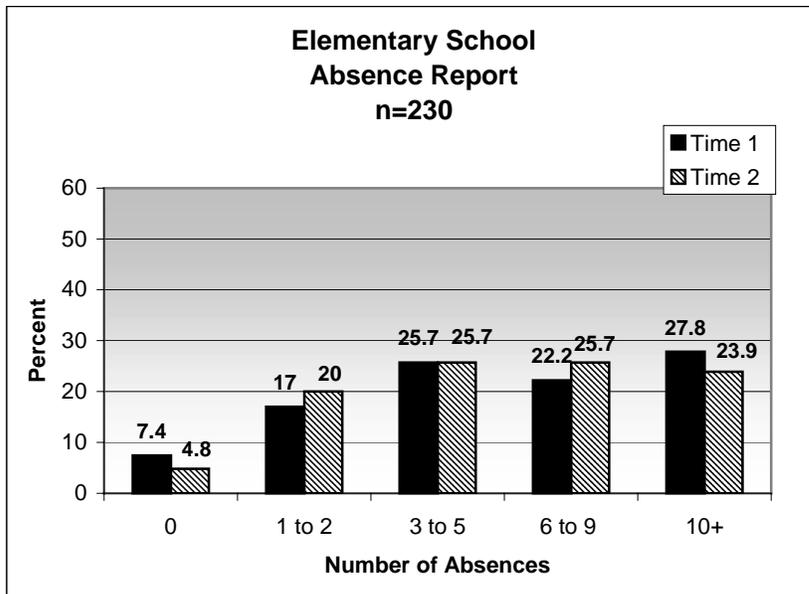


Figure 14. Disciplinary incidents for elementary school students, Time 1-2.

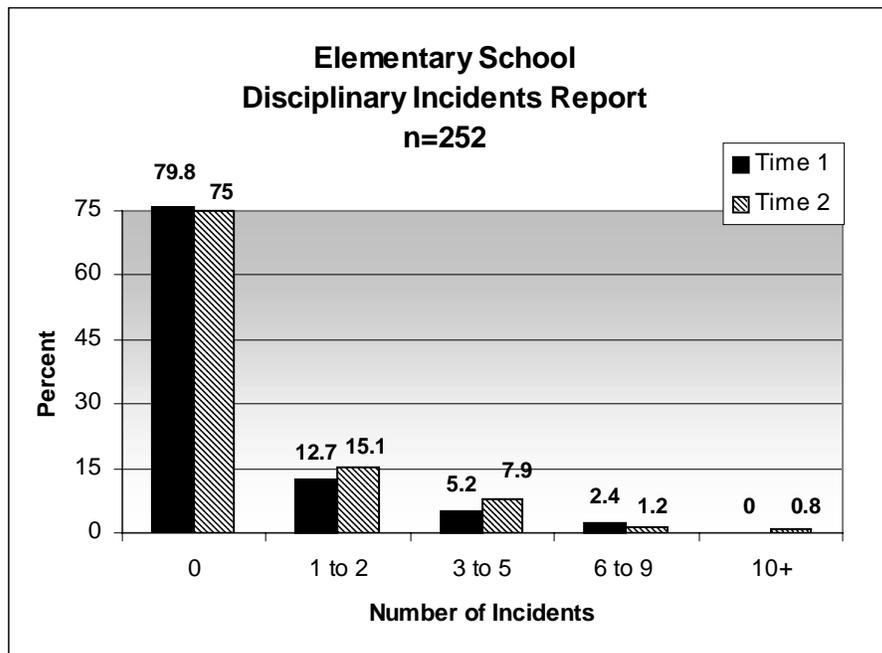


Figure 14 shows that there was a slight increase in disciplinary incidents at Time 2 for students in elementary school.

6th through 12th Grades

Two surveys were used for students in 6th through 12th grade: the Missouri Student Survey and the Supplemental Survey. The Missouri Student Survey was adapted from the Student Survey of Risk and Protective Factors and Prevalence of Alcohol, Tobacco, and Other Drug Use, developed by the Social Development Research Group (SDRG) at the University of Washington. The original student questionnaire was developed for use in a Substance Abuse and Mental Health Service Administration (SAMHSA), Center for Substance Abuse Prevention (CSAP) sponsored project.

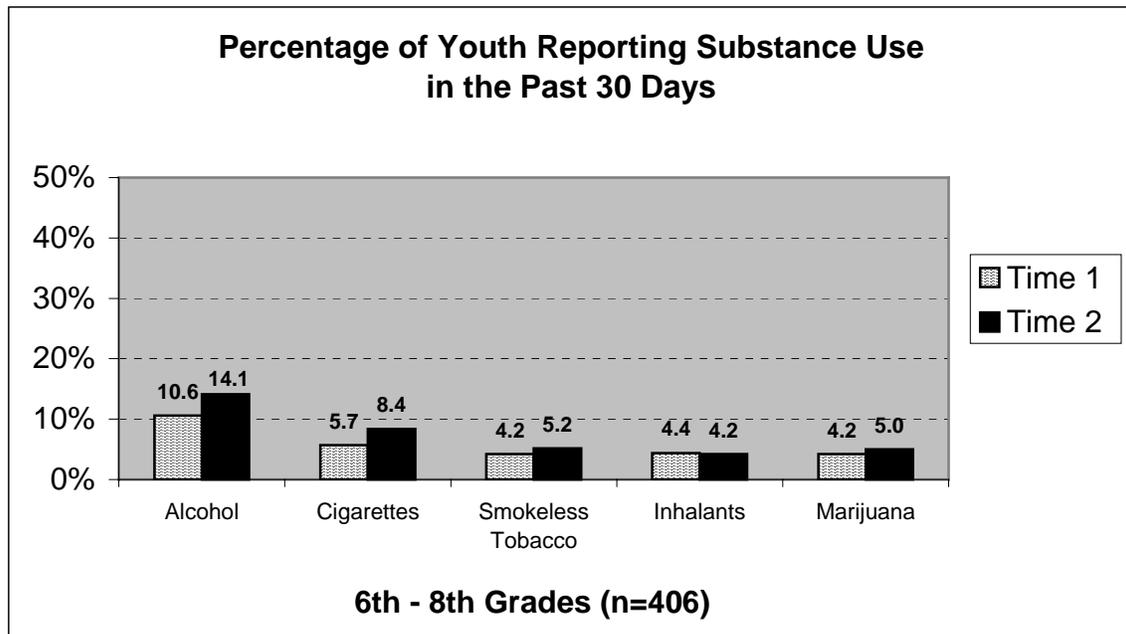
The survey instrument was tested in a six-state consortium substance abuse prevention needs assessment. This instrument has, since its development, been adapted and widely used. The focus of the survey is on health risk behaviors—such as violence and alcohol, tobacco, and other drug use—that can result in injury and/or impede positive development among youth. The survey also includes risk and protective factors, which are attitudes and opinions that research has shown to be highly correlated with these health risk behaviors.

The Supplemental Survey measures additional attitudes and behaviors related to substance use, and contains the Hansen’s Decision-Making Scale and Stress Management Scale, and the Rosenberg Self-Esteem Scale.

6th – 12th Grades Substance Use

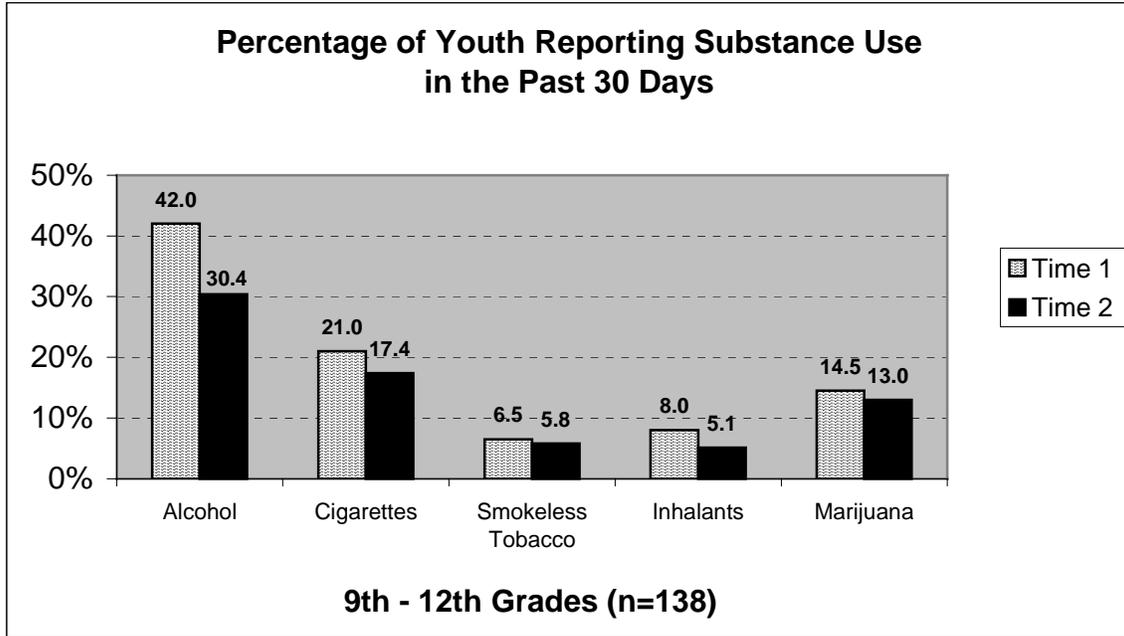
Although the differences were slight, a greater percentage of students in 6th through 8th grade reported using substances in the 30 days prior to Time 2 than Time 1 (Figure 15). Alcohol and cigarettes were the most commonly reported substances.

Figure 15. Percent of 6th-8th graders reporting substance use in past 30 days, Time 1- 2.



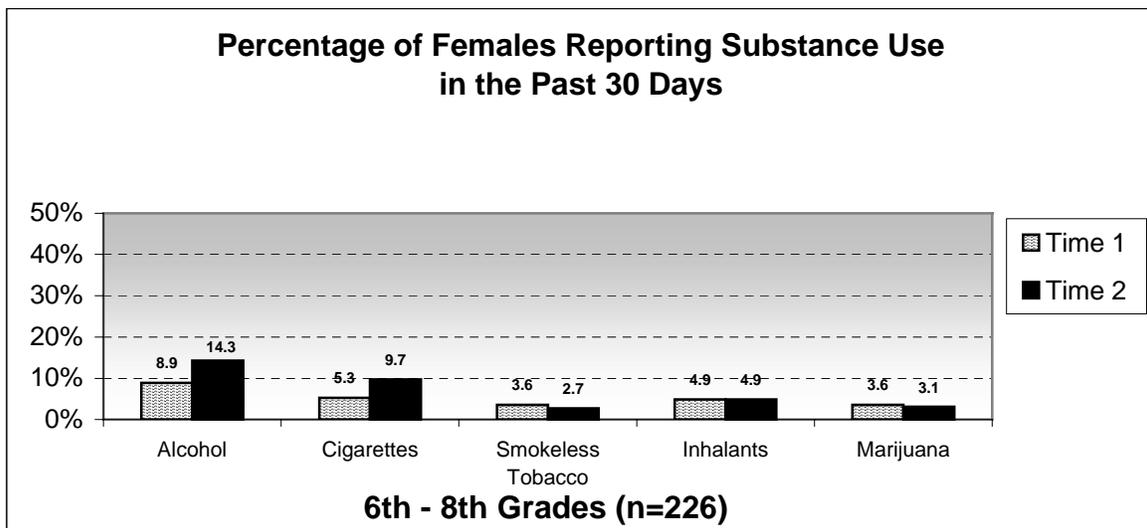
For students in 9th through 12th grades, however, the percentages reversed, as Figure 16 below demonstrates. In fact, there was nearly an 11% drop in alcohol use, and a 5% decrease in both cigarette use and binge drinking for students in the upper grades.

Figure 16. Percent of 9th-12th graders reporting substance use in past 30 days, Time 1- 2.



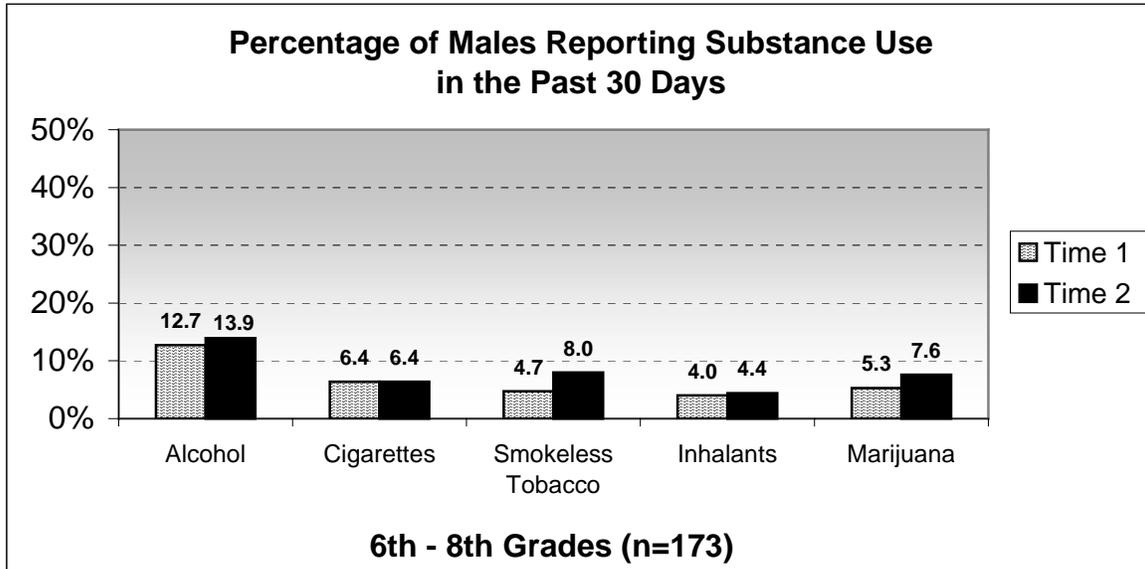
As noted in Figure 17, the alcohol and cigarette usage of females in 6th to 8th grade increased slightly, but other substance use stayed about the same.

Figure 17. Percent of female 6th-8th graders reporting substance use in past 30 days, Time 1- 2.



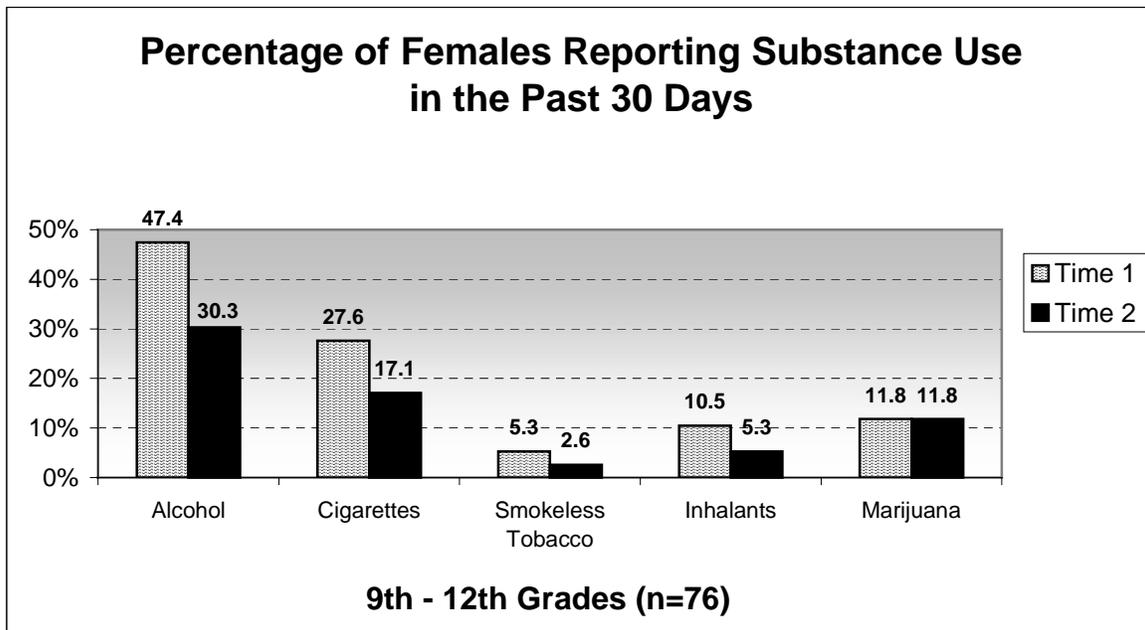
For male students in 6th through 8th grades, smokeless tobacco and marijuana use increased slightly, but use of other substances stayed about the same (Figure 18).

Figure 18. Percent of male 6th-8th graders reporting substance use in past 30 days, Time 1- 2.



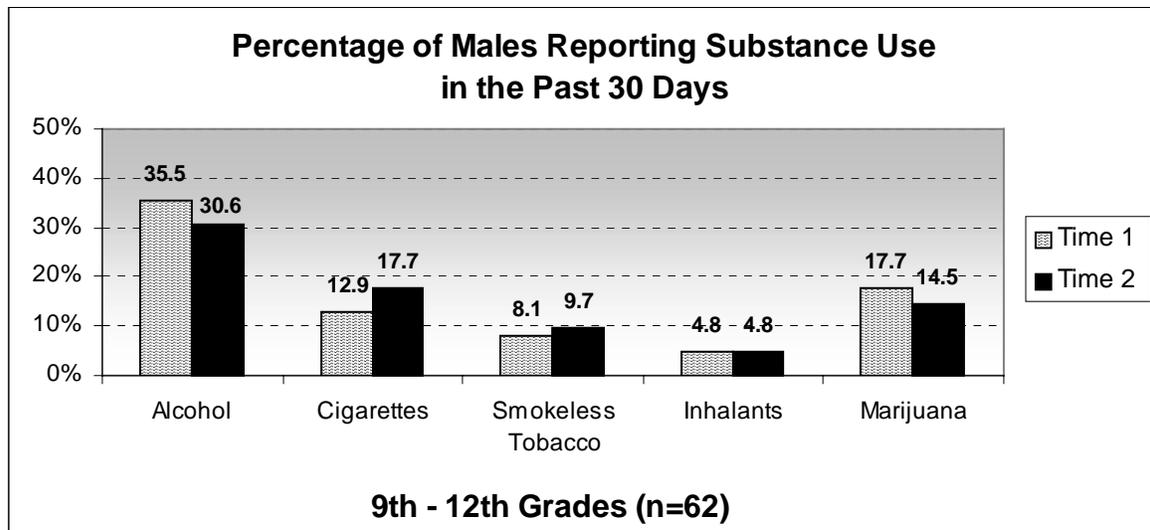
From Time 1 to Time 2, 9th through 12th grade female students reported decreases in 30-day usage in all but one of these five substances: alcohol, cigarettes, smokeless tobacco, inhalants, and marijuana (Figure 19).

Figure 19. Percent of female 9th-12th graders reporting substance use in past 30 days, Time 1- 2.



There was little difference in 9-12th grade substance use reported by male students from Time 1 to Time 2 (Figure 20 below).

Figure 20. Percent of male 9th-12th graders reporting substance use in past 30 days, Time 1-2.

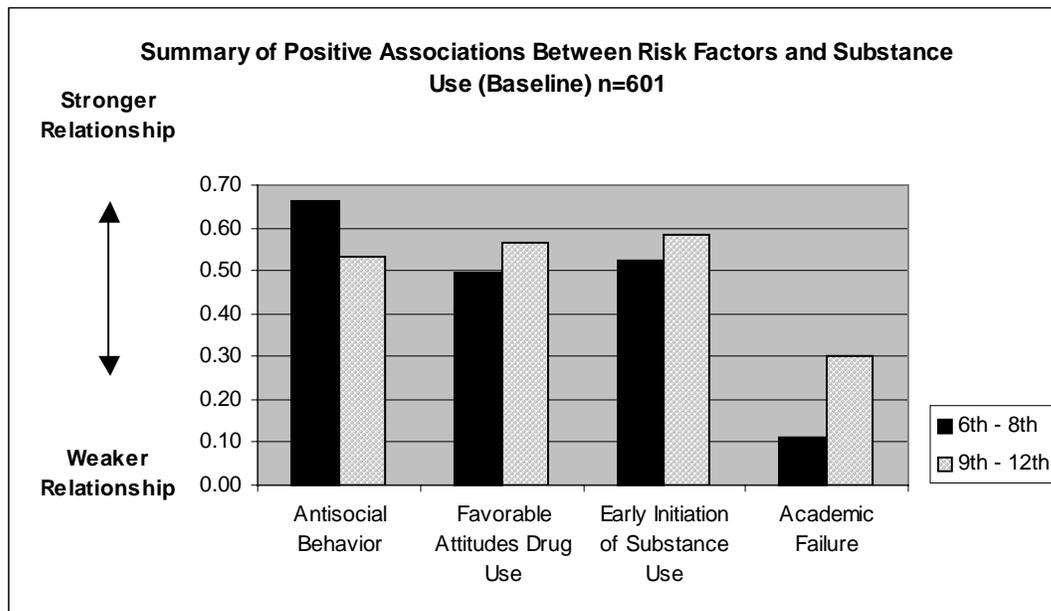


6th – 12th Grades: Risk and Protective Factors

A preliminary analysis was conducted of the association between 30-day substance use and risk and protective factors. Between Time 1 and 2, the strongest correlations between substance abuse and risk factors were found for the following risk factors: antisocial behavior; favorable attitudes towards drug use; perceived risk of drug use; and friends substance use. The strength of these associations remained essentially the same for gender and the various grade levels.

Figure 21 shows the correlation between substance use and the risk factors that are being targeted as outcome measures in SPIRIT.

Figure 21. Summary of positive association between risk factors and substance use, Time 1.



The importance of correlations is that it helps to identify the behaviors of youth who are vulnerable to substance use, and thus on the behaviors we should focus on to justify SPIRIT.

6th through 12th Grades: Supplemental Survey results

The **Rosenberg Self-Esteem Scale** was used to assess “self-esteem” among SPIRIT students participating in the evaluation. The scale includes 10 questions, measured on 4-point Likert scales, where 1 = strongly disagree and 4 = strongly agree. All questions relate to global-self worth and perception of oneself. A low score (below 2.5) indicates a low level of self-esteem. An initial analysis of changes across Time 1 and Time 2 scores showed that there were no differences among Spirit Students. In both Time 1 and Time 2, students scored an average of 3.1 (std deviation = .5).

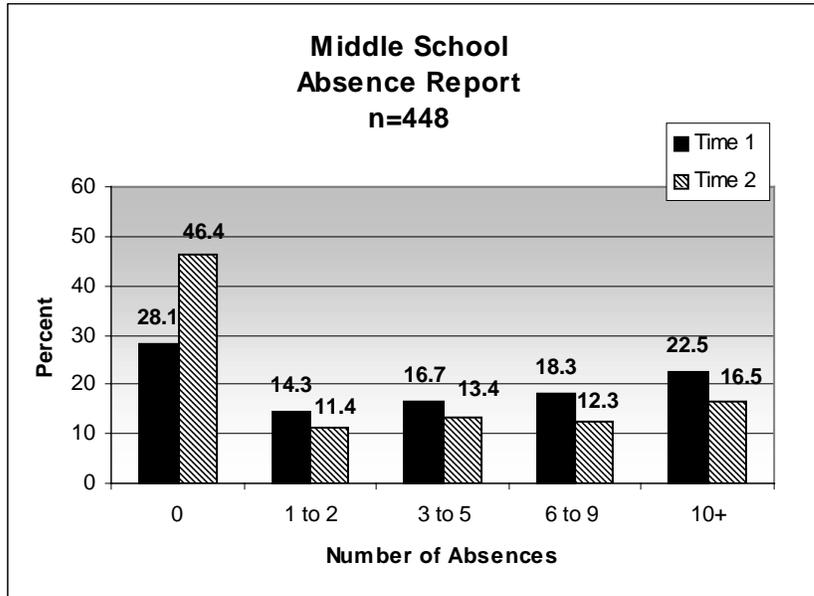
The **Decision Making Skills Scale** was used to assess students’ perceived abilities to make thoughtful decisions and empathize with others. The scale includes 4 questions, measured on a 4-point Likert scale, where 1 = Never and 4 = All the time. A high score (above 2.5) indicates the ability to follow steps typical of healthy decision making, such as thinking of consequences before engaging in a behavior. An initial analysis of changes across Time 1 and Time 2 scores showed that there were slight differences among SPIRIT Students. In Time 1, students scored an average of 2.0, compared to 2.1 in Time 2 (std deviation = .6).

The **Stress Management Skills Scale** was used to measure skills needed to manage stress. The scale includes 4 questions, measured on a 4-point Likert scale, where 1 = strongly disagree and 4 = strongly agree. A low score (below 2.5) indicates inability to handle stress or stressful situations. An initial analysis of changes across Time 1 and Time 2 scores showed that there were no differences among Spirit Students. In both Time 1 and Time 2, students scored an average of 2.7 (std deviation = .6).

6th through 12th Grades: School Level Data

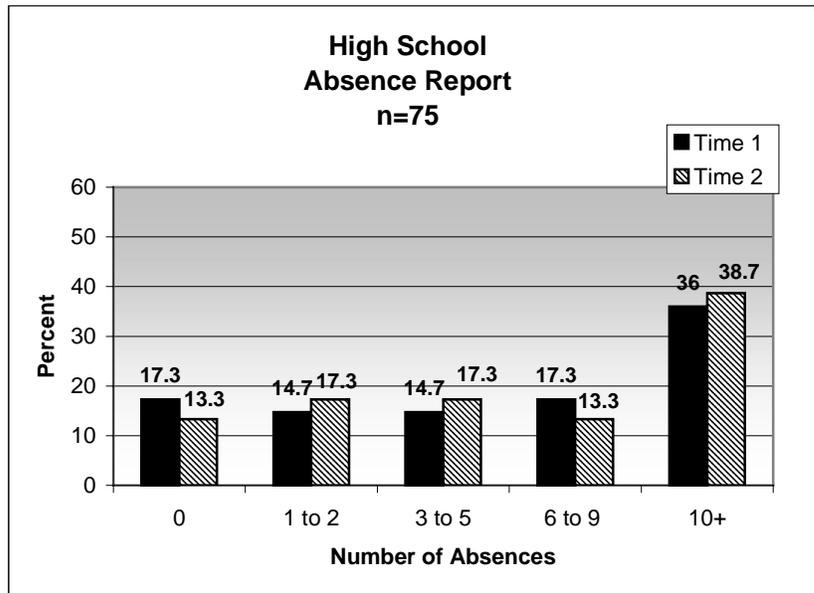
Figure 22, below, demonstrates that a large percentage of middle students who had no absences increased from Time 1 (2001-02) to Time 2 (2002-03).

Figure 22. Percent of absences reported for middle school students, Time 1-2.



The percentage of students with absences in high school changed slightly from Time 1 to Time 2. Fewer high school students reported 0 absences in Time 2. However, a considerable high percentage of students reported 10 or more absences in Time 1 and Time 2.

Figure 23. Percent of absences reported for high school students, Time 1-2.



The majority of students in middle school did not have disciplinary incidents during either year. The average number of disciplinary incidents per year for middle school students increased from 1.2 (Time 1) to 2.9 (Time 2). The opposite was true for high school students. Over the same time period, the average number of disciplinary incidents for high school students was 5.7 for Time 1 (2001-02) and 5.2 for Time 2 (2002-03).

Figure 24 below shows the percentage of students with disciplinary incidents in middle school. Again, the majority of students had no disciplinary incidents, although the percentage decreased in Time 2. The overall number of incidents increased at Time 2. The percentage of high school students with 1-2 disciplinary incidents increased while the percentage with 0 incidents decreased (Figure 25).

Figure 24. Disciplinary incidents for middle school students, Time 1-2

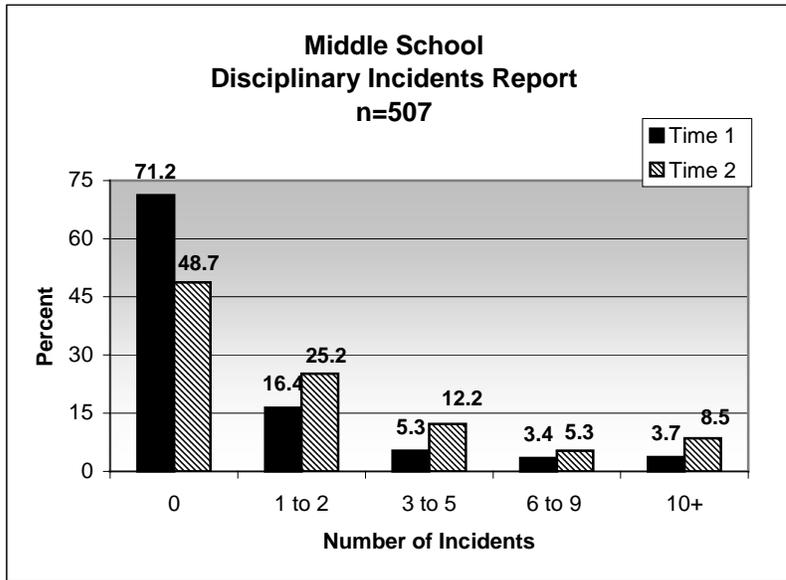
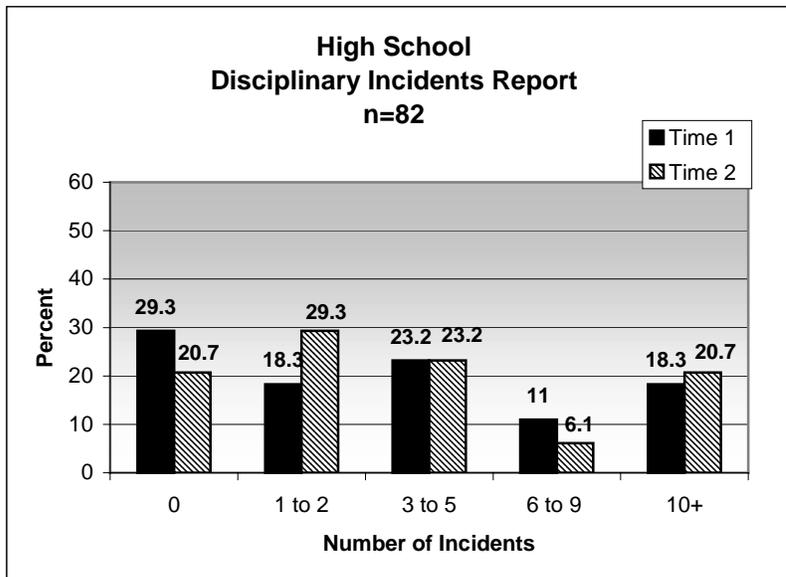
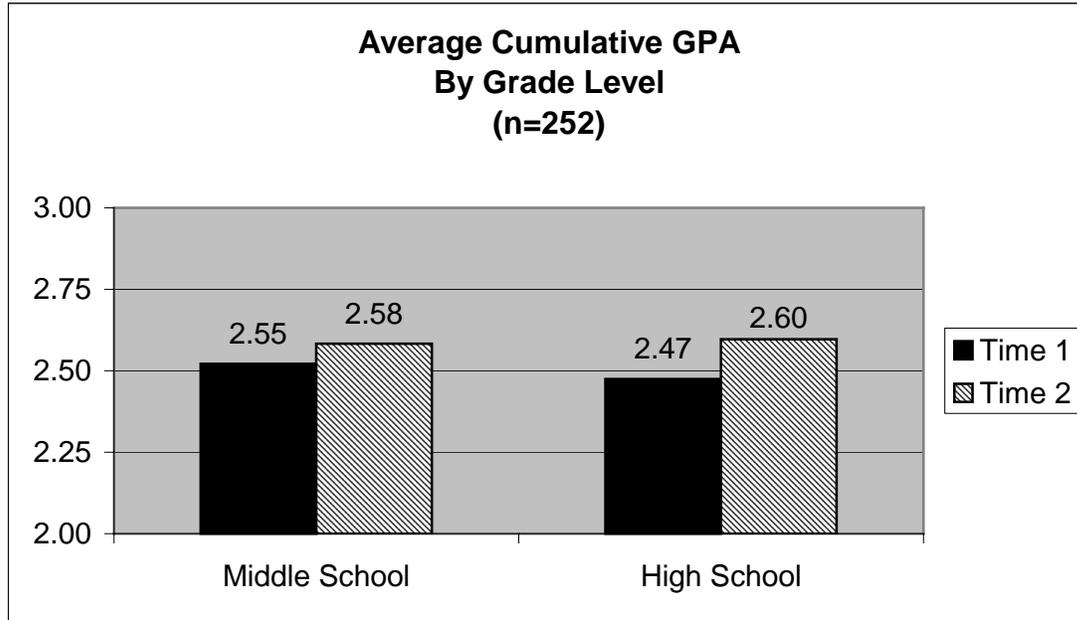


Figure 25. Disciplinary incidents for high school students, Time 1-2



The cumulative grade point average (GPA) increased slightly for both middle and high school during Time 2 compared to Time 1. These changes are displayed in Figure 26 below. One school district is not represented here because the metric used in this district is different and, therefore, cannot be compared at this time.

Figure 26. Average cumulative GPA by grade level, Time 1- 2.



Conclusion

It is premature to draw any conclusions from the first year of SPIRIT implementation. Because it was a pilot year, there were problems in implementation and in obtaining data for the evaluation. Schools and providers, however, have been very cooperative in assisting us with the evaluation.

Although the first year of SPIRIT has had challenges, there are some positive findings in both individual and school data that we will follow with interest over the course of the next two years. Some to watch are the decrease in substance use by 9th through 12th graders, and the slight increase in grade point averages for middle and high school students.

A more complete analysis using fidelity data to determine the amount of time students had in interventions is forthcoming. These data will add richness to what we are learning.