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Using Statewide Youth Surveys to Evaluate Local Drug Use Policies and Interventions

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Abstract

This article summarizes two studies that use statewide school-based youth surveys to evaluate local initiatives to reduce alcohol and other substance abuse. The Vermont “New Directions” evaluation was conducted to assess the effects of a community-based intervention in 23 Vermont communities to reduce youth substance use. Outcome data were obtained from the Youth Risk Behavior Survey, which is administered to students in grades 8 through 12 every other year in almost all school districts in the state. Based on a quasi-experimental design, results indicated significant declines in cigarette and marijuana use in intervention districts relative to comparison districts during the study period, and led to legislative action to continue funding the initiative. The Oregon “Reducing Youth Access to Alcohol” study is now being conducted in 36 Oregon communities (45 school districts) with a randomized controlled design to evaluate six combined environmental strategies to reduce underage drinking. The strategies include a reward and reminder program and minor decoy operations to reduce commercial alcohol availability, party patrol dispersal and minor in possession arrests to reduce social alcohol availability, traffic emphasis, and media advocacy to increase visibility of policy enforcement activities. The Oregon Healthy Teens Survey has been administered in a large number of Oregon school districts annually since 2000 and is being used to assess intervention effects on alcohol availability, underage drinking and alcohol-related problems such as DUI. These studies illustrate how established statewide youth surveys offer important advantages for evaluating local substance abuse prevention policies and interventions.

Systematic statewide youth surveys in the U.S. began in 1990 as part of the Youth Risk Behavior Surveillance System – now commonly referred to as the Youth Risk Behavior Survey (YRBS) – designed by the Centers for Disease Control and Prevention (CDC, 2006). The YRBS is conducted every two years, and is designed to obtain national and state estimates for the prevalence and incidence of health-related behaviors that could place adolescents at risk for acute or chronic health problems, including alcohol, tobacco, and other substance use. Some states also extend the sampling design of the YRBS in order to provide estimates for individual schools systems or communities. YRBS data thus provide a scientific basis for identifying and addressing public health problems in the adolescent population and monitoring progress towards achieving Healthy People 2010 objectives (U.S. Department of Health and Human Services, 2005). Some states have added their own items to the YRBS that solicit other health-related information from adolescents that is of special interest and relevance to the state and/or participating communities.

Statewide youth survey data provide health researchers with the opportunity to evaluate local policies and programs aimed at reducing adolescent substance abuse and related risk behaviors. This may be accomplished through a natural or planned experiment, wherein the type(s) and/or intensity of policy or program implementation varies across an adequate number of localities within a state. This article describes two studies that were designed to evaluate local policies and programs designed to reduce adolescent substance abuse in Vermont and Oregon. We provide an overview of these studies and discuss the utility of statewide youth surveys as well as their limitations for this type of research.

Vermont “New Directions” Evaluation

Background

In 1997, Vermont was one of five initial states to receive a State Incentive Grant (SIG) from the U.S. Center for Substance Abuse Prevention. This grant supported 23 community coalitions across the state in identifying and implementing a range of youth substance use prevention strategies. Vermont’s SIG, titled “New Directions” (ND), represented a major shift in the state’s approach to substance abuse prevention through its funding of community coalitions rather than individual programs, its emphasis on the use of research-based prevention programs and strategies, and the high level of training, technical assistance, and financial support provided to the coalitions. The project was implemented by the Vermont Department of Health Division of Alcohol and Drug Abuse Programs (ADAP), and evaluated by researchers from RTI International and the Pacific Institute for Research and Evaluation (PIRE).

ND coalitions implemented a variety of programs that include school-based prevention curricula, student assistance programs, mentoring, substance-free alternative activities, and family outreach programs. Coalition activities also included public awareness campaigns and other environmental strategies, and they served to enhance collaboration and networking among community organizations. Although the coalitions required an initial planning period, all were fully engaged by fall of 1999.

Outcome data were provided by Vermont’s biannual Youth Risk Behavior Survey (YRBS). This survey, which is completed by students in grades 8 through 12, is administered in the spring of every odd-numbered year in over 90% of the middle and high schools in Vermont. Because all students in each participating school and community are asked to complete the survey, it provides an assessment of how community-wide rates in substance youth among eighth to twelfth grade students are changing. Although past experience shows that reducing overall prevalence rates at the population level is a formidable challenge, this is the ultimate goal of the federal initiative under which the SIG program was developed and is consistent with a public health approach to substance abuse prevention.

Design and Measures

The design allowed for an overall assessment of the effects of the ND program in Vermont by comparing changes in outcome measures based on successive cross-sectional student survey data from all public schools within Supervisory Unions (SUs) served by ND coalitions with corresponding changes experienced in non-ND schools. The period over which changes were assessed was from 1999 to 2001. Although some coalitions began implementing ND-sponsored prevention activities prior to the 1999 YRBS administration, full scale implementation was not underway in most coalitions until the fall of 1999, thus justifying the use of the spring 1999 survey as the baseline from which subsequent changes were measured. Changes were measured by comparing prevalence rates for students in grades 8 through 12 in 1999 relative to prevalence rates for the same grade levels in 2001. Outcome measures include self-reported past month and/or lifetime use of selected substances, and several risk and protective factor known to be

predictive of substance use. In addition to the overall comparisons, it was also noted that coalitions varied widely in the levels of change they experienced in the outcome measures. Subsequent analyses were then conducted to identify coalition characteristics most highly associated with the degree of change observed for selected substance use prevalence measures.

Findings

Changes in the prevalence rates of the substance use behaviors examined were first assessed for the time period from 1997 to 1999, a period over which most measures experienced a decrease. As expected given the timing of the intervention, there were generally only small and non-significant differences between the ND and non-ND communities in the degree of change in any of the outcome measures during this time period. Between 1999 and 2001, however, declines in the prevalence rates were more pronounced for the ND communities. The strongest effects were for marijuana and cigarette use. The changes from 1999 to 2001 in the percent of students using various substances are summarized in Table 1.

The table shows that the New Directions communities, collectively, experienced greater reductions in substance use between 1999 and 2001 than the remainder of the state for all nine substance use measures that were examined. For example, past 30-day marijuana use declined 2.7 percentage points more in the ND communities than the rest of the state. Although the net percentage point declines are not large, ranging from 0.5 to 2.7, they are more impressive when expressed as the added percent reduction from the baseline rate observed in ND communities. For example, the additional 2.7 percentage point drop in marijuana use represents a 9.2 percent decline (relative the baseline value of 29%) in the prevalence of this behavior, above and beyond whatever decline was observed in the non-ND communities. The greater declines observed in these communities were statistically significant for past 30-day use of marijuana and cigarettes ($p < .05$), and lifetime use of these same substances ($p < .10$).

Further analyses found a similar pattern of encouraging findings for measures regarding unfavorable attitudes towards substance use and perceived risk of using substances. Apparent program effects were also fairly uniform across grade levels, with relative declines in the upper grades being as strong or stronger than the declines observed for 8th and 9th grade students. This finding is noteworthy because it suggests that the observed effects are not due primarily to the middle school curricula implemented by the coalitions, because by 2001 they would have affected only 8th and 9th grade students. Rather, the reductions in substance use observed across the grade levels likely reflect pervasive effects across ages as a result of the multi-faceted and community-wide approach adopted by the coalitions.

Coalitions varied widely in the changes they experienced in student substance use rates, as reflected in the following coalition-specific findings for past 30-day marijuana use. Figure 1 shows absolute change between 1999 and 2001 in the percent of students reporting use of marijuana in the past 30 days for each coalition. The dashed lines represent the average percentage point change experienced in all non-ND communities. The figure visually indicates the strong performance of the majority of coalitions relative to the rest of the state during the 1999 to 2001 period, when coalition activities were fully underway. Similar patterns were obtained for past 30-day use measures for cigarettes and alcohol.

Given the large variations across the coalitions in their levels of substance use change, additional analyses were conducted to determine if certain types of coalitions achieved greater reductions than others. These analyses focus specifically on changes experienced between 1999 and 2001. A set of coalition characteristics potentially related to the degree of change experienced within each coalition was identified. Measures of each characteristic were used to form subgroups of coalitions that were relatively high or low on each. These subgroups were

then compared using the subgroup averages in the level of change from 1999 to 2001 observed for each outcome measure. Findings from these analyses are summarized in Table 2.

In summary, the community-level changes in levels of student substance use observed collectively across the ND coalitions, relative to the remainder of the state, were very encouraging, especially as they were observed against a backdrop of generally declining rates in student substance use. These findings suggest that collaborative community-based efforts implemented within a supportive framework such as New Directions can have an impact on the prevalence of these behaviors.

The findings from the subgroup analyses suggest that most of the kinds of activities engaged in by the coalitions did, in fact, contribute to the overall reductions in student substance use achieved by ND coalitions, and that the greater the penetration and/or intensity of these activities, the stronger the reductions in student substance use. This conclusion serves to support the evidence for the overall impact of the New Directions Project, as it helps to establish a dose-response relationship between the types of activities supported by ND and the desired outcomes. It also supports the comprehensive approach adopted by most ND coalitions, as it suggests that each of a number of different strategies, implemented within a supportive and collaborative community context, contributed to the reductions in substance use that were achieved.

One important limitation of this study was the absence of a randomized design. Because ND communities were not randomly selected, it is possible that other characteristics of these communities were at least partly responsible for the differences in outcomes observed between these communities and the rest of the state, rather than their ND-sponsored activities *per se*. The same limitation applies to the findings from the subgroup comparisons. Additional details regarding the study design and findings, as well as its implications and limitations, may be found in Flewelling et al. (2005).

Oregon “Reducing Youth Access to Alcohol” (RYAA) Evaluation

Study Design Overview

The Oregon RYAA evaluation is funded by the National Institute on Alcohol Abuse and Alcoholism, and is being conducted by PIRE’s Prevention Research Center in collaboration with the Oregon Research Institute (ORI), the Oregon Liquor Control Commission (OLCC), and the Oregon Department of Human Services (ODHS), Addictions and Mental Health Division. The purpose of the study is to examine the effects of six combined environmental strategies to reduce youth access to alcohol, underage drinking and alcohol-related problems such as drinking and driving. The six strategies are as follows:

1. A *reward and reminder program* developed by ORI that reinforces the law prohibiting alcohol sales to minors by having youths age 18 to 20 visit each outlet and attempt to purchase beer. Youth give clerks who sell alcohol to them a reminder of the Oregon law and will then leave. Youth give clerks who decline their purchase attempts an envelope containing a gift certificate worth \$5 to \$10 and a note of thanks for obeying the law. Clerks who refuse to sell are sometimes invited to pose for a picture that can be used in strategic media advocacy. Store owners or managers are also notified about the outcomes of purchase attempts.
2. Increased enforcement of alcohol sales laws through the use of *compliance checks* in intervention communities by the OLCC. Compliance checks, sometimes called “minor decoy operations”, involve the use of underage buyers working as confederates of law enforcement agents to test alcohol retailers’ practices concerning alcohol sales to minors. Retailers who sell to the minor decoys are cited by the OLCC.

3. Increased enforcement of laws prohibiting third-party provision of alcohol to minors by means of a *shoulder tap program* implemented by local law enforcement. Shoulder tap programs utilize underage adolescents who, working as confederates of local law enforcement, invite adults outside retail outlets to buy alcohol for them, in return for a financial incentive or an offer to share with them some of the alcohol purchased. Adults who agree to make a purchase are issued a warning. Those who do not make a purchase are given a congratulatory letter similar to that in the reward and reminder intervention. Repeat offenders are cited.
4. Increased enforcement of laws prohibiting adult provision of alcohol to minors and underage drinking at private parties, focusing on *party dispersal or party patrols*. Party patrols use law enforcement officers to disrupt one of the highest risk settings for alcohol availability and misuse, by conducting weekend patrols of areas known to be regular drinking locations and by increasing law enforcement's responsiveness to reports by community members of teenage drinking parties.
5. *Traffic surveillance and contacts with young drivers*, especially in relation to events (e.g., high school football games) that may contribute to teenage drinking and driving. Local enforcement officers give citations if warranted for underage possession of alcohol in automobiles and DUI, but also make frequent contacts with young drivers and alert them to the stepped up emphasis of local enforcement of underage drinking laws.
6. *Strategic media advocacy* is being used to publicize all aspects of the project and increase public support for the interventions. Specifically, local media are being used to disseminate information about the scope of underage drinking, its attendant problems, and the local interventions. Media events, often in conjunction with meetings of community leaders, are also being used to publicize the results from the reward and reminder program, the compliance checks, purchase surveys, and shoulder taps.

Thirty-six Oregon communities are participating in the study, half (18) of which were randomly assigned to implement the interventions for a duration of two years. Due to limited resources, the intervention communities are being phased in and out of the intervention activities in three groups of six over a four-year period. Trainings of local law enforcement officers are provided in the spring of each year. The study is now in its third year, and intervention activities are now underway in the first two groups of communities.

A conceptual model for the Oregon RYAA evaluation is provided in Figure 2. It is hypothesized that the combined intervention activities will reduce commercial and social alcohol availability to underage youth and will change community norms regarding the acceptability of underage drinking. These community-level factors will affect adolescents' normative beliefs related to alcohol use, their alcohol expectancies, personal attitudes toward alcohol use, and subjective availability of alcohol. These psychosocial factors will in turn affect adolescents' drinking behavior and their risk for alcohol-related problems such as drinking and driving. The traffic emphasis intervention is expected to have a direct effect on drinking and driving.

Two types of data collection are being used to assess the targeted intermediate and behavioral outcomes. Annual alcohol purchase surveys are being conducted by ORI to assess compliance with underage sales laws by local alcohol outlets (i.e., community-level commercial alcohol availability). Other intermediate and behavioral outcomes of interest are being ascertained through an annual youth survey known as the Oregon Healthy Teens Survey.

Oregon Healthy Teens Survey (OHTS)—The OHTS began in 2000 and is conducted annually in a random sample of middle and high schools or schools in the CDC YRBS sample

(ODHS, 2005). The OHTS is administered in 8th and 11th grade classrooms by ORI staff or trained teachers during the spring semester, and takes one class period to complete. The OHTS is anonymous and typically has an overall response rate $\geq 80\%$ (ODHS, 2005). Completed OHTS survey forms are scanned and electronic datasets are stored on a secure server at ORI.

The OHTS includes questions related to the intermediate and behavioral outcomes in Figure 2, some of which were included specifically for the RYAA evaluation study. Survey questions related to each type of outcome are described below.

Alcohol Use and Heavy Episodic Drinking: Respondents are asked, “During the past 30 days, on how many days did you have... (a) at least one drink of alcohol, (b) at least one drink of alcohol at a party, (c) at least one drinking of alcohol on school property?” Seven possible responses range from “0 days,” to “all 30 days.” They are also asked, “During the past 30 days, on how many days did you have five or more drinks of alcohol in a row, that is, within a couple of hours?” Seven possible responses range from “0 days” to “20 or more days.”

Alcohol-Related Problems: Students are asked, “In the past 12 months, how often have you... (a) missed school or class because of drinking alcohol, (b) gotten sick to your stomach because of drinking alcohol, (c) not been able to remember what happened while you were drinking alcohol, (d) later regretted something you did while drinking alcohol, and (e) worried that you drank alcohol too much or too often?” Five possible responses range from “0 times” to “10 or more times”.

Drinking and Driving: Students are asked, “During the past 30 days, how many times did you... (a) drive a car or other vehicle when you had been drinking alcohol, (b) ride in a car or other vehicle driven by a teenager who had been drinking, and (c) ride in a car or other vehicle driven by a parent or other adult who had been drinking alcohol?” Five possible responses ranged from “0 times” to “6 or more times”.

Commercial and Social Alcohol Availability: Respondents are asked, “During the past 30 days, how many times did you get alcohol (beer, wine, or hard liquor) from each of the following sources: (a) grocery stores, (b) convenience stores, (c) gas stations, (d) through the Internet, (e) liquor store, (f) bar, nightclub, or restaurant, (g) friends 21 and older, (h) friends under 21, (i) from home without permission, (j) from a parent, (k) from a brother or sister, (l) by asking a stranger to buy it for you, (m) at a party?” Eight response options range from “None,” to “15 or more times”.

Subjective Availability: Students are asked, “If you want to get some beer, wine, or hard liquor (for example, vodka, whiskey or gin), how easy would it be for you to get some?” Possible responses are “Very hard,” “Sort of hard,” “Sort of easy,” and “Very easy”.

Normative Beliefs: To assess *descriptive norms*, respondents are asked how many of their four best friends have tried alcohol (beer, wine, or hard liquor) in the past year, with response options ranging from 0 to 4. To assess *prescriptive norms*, they are asked, “How wrong do your parents feel it would be for you to drink beer, wine, or liquor regularly?” and “How wrong do adults in your community feel it would be for you to drink beer, wine, or liquor regularly?” Possible response options for these questions are “Very wrong,” “Wrong,” “A little bit wrong,” and “Not wrong at all”.

Personal Attitudes/Alcohol Expectancies: Students are asked “How wrong do you think it is for someone your age to drink alcohol (beer, wine, or hard liquor) regularly?” with the same response options noted above for normative beliefs. Students are also asked, “How much do you think people risk harming themselves (physically or in other ways) if they take one or two

drinks of an alcoholic beverage nearly every day?” Possible response options are “No risk,” “Slight risk,” “Moderate risk,” and “Great risk”.

Perceived Enforcement of Alcohol Policies: Respondents are asked whether each the following statements is “Very much true,” “Pretty much true,” “A little true,” or “Not true at all”. “If someone your age drank beer, wine, or hard liquor in your neighborhood, he or she would be caught by the police.” “If someone your age tried to purchase alcohol at a store in your neighborhood, he or she would be asked for ID or proof of age.” “If there were a party in your neighborhood where people your age were drinking, the police would come and break it up.” “If someone your age asks people over the age of 21 in your neighborhood to buy alcohol for them, no one would buy it for them.”

Demographics: Students are also asked to report their age, gender, and race/ethnicity.

Preliminary Analyses with OHTS—Data Thus far, OHTS data have been used to investigate relationships between school district-level measures of commercial alcohol availability and perceived law enforcement and student-level measures of alcohol sources and alcohol use. For example, Dent et al. (2004) used aggregate measures of commercial alcohol availability and perceived law enforcement based on student responses to relevant questions on the OHTS. Their findings suggest that community-level commercial alcohol availability and law enforcement (i.e., getting caught by police when drinking in neighborhood) are associated with underage alcohol use, heavy drinking, and drinking and driving in the expected directions. Their study also suggests that adolescents living in communities with less commercial alcohol availability may be more likely to use social alcohol sources (i.e., substitution effects).

More recently, Paschall et al. (2007) used alcohol purchase survey data to estimate school district-level commercial alcohol availability (i.e., district alcohol sales rate) and examine its relationship with student-level measures of alcohol use, use of alcohol sources, and subjective availability (perceived ease of obtaining alcohol). The district-level sales rate was positively associated with students’ self-reported use of commercial alcohol sources and subjective availability, but was not significantly associated with students’ use of social alcohol sources or their past-30-day alcohol use and heavy episodic drinking. Multi-level regression analyses did, however, provide support for an indirect association between the district-level alcohol sales rate and these past-30-day behaviors. Analysis results also indicated a substantially stronger association between students’ use of social alcohol sources and their drinking behavior relative to use of commercial alcohol sources and subjective alcohol availability.

Use of OHTS Data for the RYAA Evaluation

As noted above, the OHTS has been administered annually in RYAA study communities since 2000. Thus, we will have up to eight consecutive years of youth survey data to use for the RYAA evaluation. We plan to use a multi-level modeling approach to examine changes in targeted outcomes over time in intervention communities relative to controls. We will also examine possible mediating mechanisms specified in Figure 2. Results of these analyses will be published in scientific journals and will be shared with the Oregon Liquor Control Commission and the Oregon Department of Health Services. Thus, the RYAA study will further demonstrate the utility of the OHTS for evaluating local alcohol policies and enforcement activities, and will provide support for continued implementation of the OHTS in future years.

Discussion

As indicated by the Vermont New Directions evaluation and the ongoing Oregon RYAA evaluation, annual statewide youth surveys provide consistent measures of psychosocial factors and substance use behaviors that may be targeted and affected by local initiatives designed to prevent or reduce adolescent alcohol, tobacco, marijuana and other drug use. Psychosocial and behavioral measures included in surveys such as the YRBS and OHTS are generally considered to have good reliability and validity. The cost savings of this approach can be substantial, allowing greater allocation of resources for other study activities (e.g., hiring and training program staff, program implementation). Thus, researchers can capitalize on statewide youth surveys such as the YRBS and OHTS to evaluate community-based prevention policies and programs through natural experiments and quasi-experimental or controlled studies.

These New Directions and RYAA studies further demonstrate that state health departments and other government agencies are willing to assist researchers in the utilization of statewide youth survey data and in the design of the survey itself for the purpose of evaluating local policies and programs that may affect adolescent substance use. Statewide youth surveys thus provide researchers with a basis for working with government agencies and school systems and helping them to identify the most cost-effective drug abuse prevention policies and programs.

Statewide youth surveys may also be less than perfect for research and planning purposes. For example, it sometimes is not possible to include questions in the survey that may be the most sensitive to local policy or program effects or that may help to demonstrate the mechanisms by which policies and programs affect adolescent substance abuse. Questions pertaining to the negative consequences of substance use are less commonly included in student surveys than measures of use, even though reductions in both consumption and negative consequences may be desired effects of preventive interventions. Statewide youth surveys may be implemented at a time that is not ideal in relation to the timing of local intervention activities, which may lead to poor estimation of local policy and program effects. Survey administration methods may not be uniform across schools and school districts, and non-response rates may vary, both of which may contribute to sampling or survey item response biases. Additionally, some schools or school districts may choose not to participate in a statewide youth survey in some years; this can be unpredictable and may introduce attrition bias into the study. Because adolescents who have dropped out of school do not participate in the surveys, the survey data may give an incomplete picture of substance use and related health issues among youth in the communities surveyed. Additionally, the validity and reliability of self-report measures of substance use behaviors and consequences may be questioned due to potential error from poor recall or socially desirable responses.

Those limitations notwithstanding, it is clear from the examples provided in this paper as well as many other examples, that establishing regularly implemented student surveys in states and communities provides useful benefits to planning, research and evaluation efforts. Many communities have come to see the value of student survey data in helping to raise public awareness of youth substance use and other health issues, and also to facilitate their efforts to obtain program funding from federal grants and other sources. The use of scannable forms and other more recent technologies, such as web-based and computer-assisted surveys, can help facilitate administration of the surveys and reduce their costs. Communities and school systems are often initially reluctant to participate in such surveys for a number of reasons, including fear of negative publicity, but once established the perceived benefits of routine administration of student surveys almost always exceed the perceived risks and costs.

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Figure 1.
Change in Prevalence of Past-30-Day Marijuana Use Among Students in Grades 8–12 from 1999–2001, by Coalition.

Figure 2.
Conceptual model for Oregon Reducing Youth Access to Alcohol study

Table 1

Percent of Students Grades 8–12 in ND and Non-ND Communities Reporting Various Types of Substance Use, 1999 and 2001.

Substance Use Measure	New Directions		Non-New Directions		Net change ^I 1999 to 2001
	1999 N=13891	2001 N=13965	1999 N=11041	2001 N=10719	
Marijuana past 30 days	29.5	26.4	29.6	29.2	-2.7*
Alcohol past 30 days	44.1	40.8	45.9	43.5	-0.9
Binge drank past 30 day	27.3	24.4	29.2	26.8	-0.5
Cigarettes past 30 days	31.3	22.2	31.4	24.7	-2.4*
Ever used marijuana	46.3	42.8	47.5	45.3	-1.3+
Ever used alcohol	71.2	68.1	73.3	70.9	-0.7
Ever smoked cigarettes	53.2	43.0	54.8	46.1	-1.5+
Ever used inhalants	17.6	15.0	16.6	15.1	-1.1
Ever used other drugs	23.2	20.0	22.9	20.5	-0.8

^I Net percentage point change in the ND areas after adjusting for the amount of change in the non-ND areas.

* p<.05

+ p<.10

Table 2

Summary of findings from additional subgroup analyses to identify characteristics associated with coalition outcomes.

Characteristic	Finding
Specific middle school substance abuse curriculum used.	Ten coalitions implemented Life Skills Training (LST) as their primary school-based strategy, 6 implemented Project Northland, 2 choose Project Alert, and 5 did not implement a research-based substance use prevention curriculum in their middle schools. In comparing across these subgroups, coalitions that implemented Project Northland experienced greater declines in the majority of substance use measures examined relative to the other coalitions. (Note: for this characteristic only, outcome measures were based on eighth grade students only).
Implementation levels of various <u>universal</u> prevention strategies (as measured by the percentage of eligible students served and the number of years offered)	Greater declines in most substance use prevalence measures were associated with higher implementation levels for student assistance programs, environmental strategies, and alternate activity programs.
Implementation levels of <u>selected</u> and <u>indicated</u> prevention strategies	Levels of program implementation for indicated and selective programs such as mentoring and family-based programs, which typically involved very small numbers of "high risk" participants, were largely unrelated to changes in substance use prevalence.
Size of the population served by the coalition	Declines in substance use prevalence were greatest among coalitions that served relatively small populations (and which, therefore, received greater resources per capita to support their activities).
How long the coalition has been in existence	How long the coalition had been in existence did not appear to influence the level of substance use change from 1999 to 2001.
Coalition coordinator characteristics, such as experience, education, and turnover	Slightly greater declines in use were experienced by coalitions whose coordinators did not change and who had relatively more years of experience in substance use prevention. Coordinator education did not appear to make much of a difference.