
Research Papers

Protecting You/Protecting Me: Effects of an Alcohol Prevention and Vehicle Safety Program on Elementary Students

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ABSTRACT: *This paper describes an evaluation of Protecting You/Protecting Me (PY/PM), a classroom-based, alcohol-use prevention and vehicle safety program for elementary students in first through fifth grades developed by Mothers Against Drunk Driving. PY/PM lessons and activities focus on teaching children about (1) their brains (why their brain is important, how their brain continues to develop throughout childhood and adolescence, what alcohol does to the developing brain, and why it is important to protect their brain); (2) vehicle safety (what to do to protect themselves should they ever ride with an impaired driver); and (3) life skills (decision making, stress management, and media literacy). Fourth- and fifth-grade students from schools in the fourth year of PY/PM implementation were surveyed. Results indicated that, relative to comparison students from matched schools, PY/PM students increased their knowledge of alcohol's effect on development; gained decision-making, stress-management, and vehicle safety skills; and demonstrated changes in attitudes toward underage alcohol use and its harm. Further, students retained lessons learned in previous years and their scores improved with increased exposure to PY/PM. In addition, the findings demonstrate that it is possible to design and implement a program that can improve young children's knowledge regarding alcohol and their developing brains, teach them skills to protect themselves in dangerous situations, increase already high antialcohol attitudes, and change perceptions of alcohol's harmfulness. (J Sch Health. 2005;75(5):171-177)*

The nation has made considerable progress in reducing underage drinking and its consequences. Youth alcohol consumption has decreased in the past 2 decades,¹ and enacting a minimum legal drinking age of 21 years in all states between 1982 and 1987 has saved more than 20,000 lives cumulatively through 2000.² Fatal crashes involving youth drivers in which alcohol was implicated decreased in all regions of the country and in most states.³ However, the number of adolescents who initiated alcohol use before they reached majority nearly doubled from 1990 to 2000.⁴

Although 21 is the legal drinking age across the United States, almost one half (48.6%) of high school seniors reported drinking alcohol at least once in the past 30 days,⁵ and the average age that youth aged 12 to 17 reported they first used alcohol was 13.1.⁶ This fact is a critical concern because research suggests that individuals who begin drinking before age 15 are more likely to become alcohol dependent.^{7,8} Early drinkers are more likely to report having unplanned and unprotected sex,⁹ driving after drinking too much, being involved in a motor vehicle crash,⁹ and being injured while under the influence of alcohol.¹⁰ Underage drinking also is associated with higher rates of suicide¹¹ and sexual assault.¹² Further, research indicates that alcohol

adversely affects adolescent brain development and can lead to mild cognitive impairment and poor school and work performance.¹³

Schools constitute the primary public institutions with access to youth under 20 years of age. Thus, the most common prevention strategy for youth is education—especially school-based prevention.^{14,15} Research has demonstrated the effectiveness of specific school-based strategies,¹⁶⁻¹⁹ and the benefits of school-based drug prevention are thought to exceed the costs.²⁰

Many school-based programs seek to reduce the prevalence of alcohol use by students by preventing consumption before it begins. Some research suggests that targeting middle school-aged children increases program effectiveness¹⁹ and, indeed, most alcohol prevention education programs are tailored toward middle school-aged children.²¹ Yet youth appear to be taking their first drinks at ever younger ages.²² To delay onset of alcohol use, it may be necessary for prevention programs to target elementary school-aged children.

Only recently have alcohol prevention programs begun to target children as young as those in the first and second grades. Yet there are indications that this is a critical age for the development of positive attitudes toward alcohol. Studies indicate that young children begin to acquire an understanding about alcohol at a very early age and often long before they have direct involvement with it.²³⁻²⁵ The formation of attitudes about alcohol is influenced by several factors including siblings and parents, the media, and peers. Because risk factors are present several years before initiation, prevention activities should start in elementary school and be periodically reinforced as students mature and are presented with new social situations and pressures to use alcohol.

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Protecting You/Protecting Me (PY/PM), developed by Mothers Against Drunk Driving, is one of the first alcohol prevention and vehicle safety programs to target children in elementary school, beginning in first grade. The goal of the classroom-based program is to prevent the injury and death of children and youth from underage alcohol use and riding in vehicles with impaired drivers. The PY/PM curriculum consists of 40 lessons (1 lesson per week for 8 weeks each in grades 1 through 5) and an equal number of "ownership activities." Each year's curriculum reinforces the one taught the previous year. Lessons and activities focus on teaching children about their brains (why their brain is important, how their brain continues to develop throughout childhood and adolescence, what alcohol does to the developing brain, and why it is important to protect their brain); vehicle safety (what to do to protect themselves should they ever ride with an impaired driver); and life skills (decision making, stress management, and media literacy).

PY/PM was named a Model Program both by the National Registry of Effective Programs of the Substance Abuse and Mental Health Services Administration²⁶ and by the Office of Juvenile Justice and Delinquency Prevention. The program is designed to be led by high school students^{27,28} and by teachers. This study is the first to report results of the latter. Specific research questions included (1) Do students exposed to PY/PM gain knowledge, skills, and attitudes related to underage alcohol use and safety, as compared to students not exposed to the curriculum? (2) What are the cumulative effects of PY/PM exposure on student knowledge, skills, and attitudes related to underage alcohol use and safety? (3) Do students retain the lessons learned in PY/PM from previous years, at the time of a 1-year follow-up?

METHOD

Design and Sample

The study used a quasi-experimental design. The intervention group included all students in first through fifth

grades in 4 ethnically and economically diverse schools divided equally between Montana and Texas. Each intervention school was matched with a nearby comparison school on school size, racial/ethnic composition, and percentage of students receiving free or reduced-price school lunch. One comparison school in Montana left the study after the third year and was replaced by another local matched comparison school for year 4. Table 1 displays characteristics of the matched pairs of schools.

In intervention schools, the PY/PM program was implemented annually for 4 consecutive years, beginning in academic year 1999-2000. Prior to teaching the first year, participating first- through fifth-grade teachers (N = 73) attended a 1-day training on the PY/PM curriculum that also included information on childhood and adolescent brain development and alcohol prevention theory. Teachers received booster training sessions before year 4.

These results came from the fourth year of the PY/PM program (academic year 2002-2003), in which all fourth- and fifth-grade students were surveyed. Intervention school teachers administered pretests in November and December 2002, prior to teaching PY/PM; posttests were administered 4 to 6 months after completion. Comparison teachers administered surveys at approximately the same time. In administering the surveys, teachers followed a script and were instructed to read each question aloud twice. There were a total of 1,214 students in fourth and fifth grades in intervention and comparison schools (Table 2). A higher percentage of students completed both pretest and posttest surveys in the Montana schools (matched pairs 3 and 4), which did not require active written parental consent.

Overall, 848 students (70%) completed the pretest. The sample was 49% male, and the ethnic distribution was 56% white, 22% Hispanic, 10% African American, 9% Native American, 1% Asian, and 2% Other (primarily biracial). Analysis of pretest data for intervention and comparison students showed that the groups were comparable by gender and age, but the intervention group included more Hispanics (30% vs 12% in the comparison

Table 1
Characteristics of Matched Pairs of Schools, School Year 1999-2000

School Pairs	School Size	% Receiving Free or Reduced-Price Lunch	Race/Ethnicity				
			% White	% African American	% Latino/Hispanic	% Native American	% Other
1 Intervention	567	32	45	8	43	0	4
1 Comparison	641	36	49	8	38	0	5
2 Intervention	631	72	19	45	35	0	1
2 Comparison	365	67	24	45	30	0	1
3 Intervention*	304	46	63	0	2	34	1
3 Comparison*	301	52	66	0	2	31	1
4 Intervention	398	29	90	1	3	4	2
4 Comparison*	438	85	94	1	1	3	1

* Includes both elementary (grades K-4) and intermediate (grades 5-6) schools.

group), more African Americans (14% vs 5%), and correspondingly fewer whites (45% vs 69%). Posttest sample demographics revealed a similar pattern, with more Hispanics and African Americans and fewer whites in the intervention group relative to the comparison group.

Most students completed both a pretest and a posttest (722 students). An attrition analysis comparing students who took both surveys with those who took only the pretest showed no differences in racial composition or gender and no significant differences in scores on pretest measures. School records determined how many years students had attended intervention schools and were thus exposed to PY/PM.

Instruments

Pretest and posttest surveys included questions assessing student knowledge, attitudes, behavior, and intention regarding underage alcohol use, as well as vehicle safety, media literacy, decision making, stress management, and brain development. All constructs were designed to be measured with multi-item scales. The response format for all items was a 4-point, Likert-type scale. Response anchors for all but 2 scales were YES! (strongly agree), yes (agree), no (disagree), and NO! (strongly disagree). The other 2 scales used frequency response anchors (always, never, etc). Items were reverse scored where necessary, and all responses were coded from 1 to 4, with 4 indicating the most desirable response.

A 6-item scale assessed the perceived harm of underage alcohol use. Four items were adapted from the Monitoring the Future National Survey on Adolescent Drug Use,⁵ and 2 items concerning drinking and driving/riding were added. Students were asked, "How much do you think people less than 21 years of age harm themselves if they: try one or two drinks of beer; try one or two drinks of wine; try one or two drinks of liquor; have one or two drinks of alcohol once a month; ride with someone who has one or two drinks of alcohol; drive after having one or two drinks of alcohol?" Posttest Cronbach alpha revealed an internal consistency of $\alpha = .82$.

A 5-item scale measured future drinking and safety intentions. Students were asked, "In the future, do you think

you will: drink beer, wine coolers, liquor; ride in a car with a driver who has had any alcohol; and forget to wear a seat belt when in a car?" Posttest internal consistency was .68.

A 4-item scale, adapted from a scale developed by Hansen²⁹ and recommended for use in the Center for Substance Abuse Prevention Core Measures Initiative,³⁰ measured stress-management skills. Items included the following: Do you handle stress well? Do you know what to do to handle a stressful situation? Do you know how to relax when you feel too much stress? Are stressful situations very difficult for you to deal with? The scale's internal consistency was .71.

To assess decision-making skills, a scale developed by Hansen²⁹ was adapted and the following items used: Do you make good decisions? Do you stop and think about your choices before you make a decision? Do you stop and think about all the things that could happen as a result of your decision? Do you stop and think about others' feelings? Internal consistency for the scale was .71.

Internal consistency of the scales was adequate considering the age of the sample (Cronbach coefficient alpha ranged from .68 to .82). Younger children have short attention spans and tend to respond less consistently.³¹

Using pairs of items, 4 other constructs were measured: (1) attitudes toward underage alcohol use ("Is it okay for teenagers to drink alcohol?" and "Is it okay for teenagers to drink alcohol if they do not drive a car?"); (2) media literacy ("Do commercials on TV tell us what we need to know?" and "Do commercials on TV ever leave out information that could hurt us?"); (3) vehicle safety ("If you ever had to ride in a car with a driver who had been drinking alcohol (beer, wine, or liquor), what would you do: 'Would you talk to the driver?' and 'Would you sit in the front seat to be near the driver in case you needed to help'"); and (4) development ("Are people grown up when they are 18 years old?" and "Drinking alcohol is more dangerous for people under 21 than for people 21 and older.").

Analysis

Analyses addressed 3 research questions: (1) Do students exposed to PY/PM gain knowledge, skills, and

Table 2
Number of Students by School and Grade and Percent Completing Pretest and Posttest

School Pairs	Fourth Graders			Fifth Graders		
	Total N	Pretest (%)	Posttest (%)	Total N	Pretest (%)	Posttest (%)
1 Intervention	111	47	43	136	64	60
1 Comparison	107	38	33	85	54	56
2 Intervention	84	71	63	81	100	89
2 Comparison	40	38	35	36	33	31
3 Intervention	55	89	96	45	84	87
3 Comparison	52	90	90	92	92	91
4 Intervention	60	78	55	63	87	81
4 Comparison	92	73	86	75	88	83
Total	601	63	60	613	77	73

attitudes related to underage alcohol use and safety when compared to students not exposed to the curriculum? (2) What are the cumulative effects of PY/PM (in terms of prior years of curriculum exposure) on student knowledge, skills, and attitudes related to underage alcohol use and safety? (3) Do students retain the lessons learned in PY/PM from previous years at the time of a 1-year follow-up?

For the first 2 research questions, posttest data from fourth- and fifth-grade students collected during year 4 of PY/PM implementation were used. Regression analyses assessed effects of PY/PM intervention status (intervention vs comparison) on responses for the scales in the posttest, adjusting the analyses for the nested nature of the design using the SVYREG procedure in the statistical package STATA.³² This procedure took into account that individual scores were clustered within classrooms, which were clustered within schools.

To test the second research question, similar adjusted regression analyses assessed the relationship between the number of years students were exposed to the PY/PM curriculum and student scores on posttest measures. Analyses included 219 students with 4 years of exposure, 49 students with 3 years of exposure, 77 students with 2 years of exposure, 88 students with 1 year of exposure, and 362 with no exposure.

For the third research question, pretest data collected from fourth- and fifth-grade students during the fourth year of PY/PM implementation were used. This pretest served as a follow-up measure as it was administered almost a full year after the PY/PM exposure in the preceding year. Analyses included 219 students with 3 years prior exposure to the PY/PM curriculum, 49 students with 2 years of exposure, 77 students with 1 year of exposure, and 450 with no exposure. Analyses were adjusted only for students' clustering within schools because no theoretical reason suggested that student classroom status in the fourth year would affect their pretest scores that year.

Preliminary chi-square analyses indicated no gender or age differences by intervention status. However, racial

composition differed across treatment and comparison groups, so race was included as a dummy-coded covariate in all regression analyses.

RESULTS

Prior to hypothesis testing, an overall check of the distributions for each item revealed strong skews toward more desirable responses (a ceiling effect). The modal response for all items was a 3 or 4 on a 4-point scale. No differences existed by intervention status at pretest, but the PY/PM group manifested consistently higher means and stronger negative skews at posttest. Hypothesis-testing analyses further explored the differences.

For the first research question, we hypothesized that intervention students, regardless of number of years of exposure to PY/PM, would attain higher posttest scores than comparison students. A significant PY/PM impact occurred in the hypothesized direction for 6 of the 8 outcome measures (Table 3). The drinking and safety intentions scale was unaffected by the PY/PM intervention, and media literacy was only marginally significant. The impact of PY/PM was in the hypothesized direction on every outcome measure.

For the second research question, we hypothesized that PY/PM's outcomes would be positively associated with students' number of years of exposure to PY/PM. Significant relationships existed in the desired direction for 6 of the 8 scales tested (Table 4). The remaining two, pertaining to media literacy and drinking and safety intentions, were only marginally significant. All correlations were in the predicted positive direction, suggesting that more exposure to PY/PM was associated with more desirable responses on the dependent measures.

For the third research question, we hypothesized that students' exposure to PY/PM would be correlated with their follow-up scores as measured in the beginning of their fourth year of PY/PM (the pretest score in that academic year). Significant and positive correlations occurred between the number of years of PY/PM exposure and

Table 3
Regression of Posttest Outcome Measures on PY/PM Intervention Status

Measure	Comparison Mean	PY/PM Mean	Regression Coefficient*	t (6, 38) [†]	p Value [‡]
Perceived harm of alcohol	2.91	3.13	.22	3.81	.00
Drinking and safety intentions	3.13	3.25	.12	1.41	.16
Stress-management skills	2.70	2.83	.13	2.07	.04
Decision-making skills	3.01	3.11	.10	2.15	.04
Underage drinking attitudes	3.48	3.65	.17	2.40	.02
Media literacy	3.27	3.38	.12	1.88	.07
Vehicle safety skills	3.11	3.56	.45	5.62	.00
Development	3.05	3.50	.45	5.73	.00

* The regression coefficient estimates the mean difference between intervention and comparison groups on a 4-point scale, with a positive number indicating a higher intervention group mean.

† The d.f. are adjusted for the nested design and incorporate race as a dummy-coded covariate. The n sizes differ per scale from 702 to 709, number of teachers = 52, number of schools = 9.

‡ The p value is based on adjusted t tests and rounded to 2 digits.

scores on 5 of 8 outcome measures (Table 5). The decision-making scale was marginally significant. All correlations were in the hypothesized positive direction. Thus, more exposure to PY/PM was associated with better overall responses at follow-up.

DISCUSSION

In this study, students exposed to the PY/PM intervention fared better than students in the comparison group in most of the domains measured. PY/PM students increased their knowledge of alcohol's effect on development and gained practical skills concerning decision making, stress management, and vehicle safety. They also demonstrated changes in attitudes toward underage alcohol use and the harm it causes. Moreover, PY/PM students retained the information gained during the previous year's exposure

and benefited from multiple years of exposure to the intervention.

Although the procedures employed yielded statistically significant results and supported the hypotheses, lower-than-anticipated correlations occurred between PY/PM exposure and the outcome measures. Low correlations could have occurred due to the young age of the participants and the limited variability among their responses. Also, ceiling effects inherent in the items suppressed variance in the dependent measures. Young children's intentions to use alcohol are very low to begin with, and their negative attitudes toward alcohol are high.

One problem with the design concerned the inability to track students longitudinally during their 4-year involvement. The original design called for following individual students over time by relying on an algorithm comprising their initials and birth dates, but students had

Table 4
Regression of Posttest Outcome Measures on PY/PM Prior Exposure

Measure	Correlation (R)	Regression Coefficient*	t (6, 38) [†]	p Value [‡]
Perceived harm of alcohol	.18	.06	3.25	.00
Drinking and safety intentions	.11	.04	1.82	.08
Stress-management skills	.12	.05	2.48	.02
Decision-making skills	.13	.04	3.35	.00
Underage drinking attitudes	.10	.04	2.26	.03
Media literacy	.04	.03	1.76	.09
Vehicle safety skills	.25	.12	6.21	.00
Development	.30	.12	6.07	.00

* The regression coefficient estimates the increase in score (on a 4-point scale) for every additional year of PY/PM exposure.

† The d.f. are adjusted for the nested design and incorporate race as a dummy-coded covariate. The n sizes differ per scale from 672 to 679, number of teachers = 52, number of schools = 9.

‡ The p value is based on adjusted t tests and rounded to 2 digits.

Table 5
Regression of Follow-Up Outcome Measures on PY/PM Prior Exposure

Measure	Correlation (R)	Regression Coefficient*	t (6, 727) [†]	p Value [‡]
Perceived harm of alcohol	.17	.08	4.36	.00
Drinking and safety intentions	.04	.01	.48	.63
Stress-management skills	.09	.04	2.35	.02
Decision-making skills	.08	.03	1.89	.06
Underage drinking attitudes	.05	.03	1.51	.13
Media literacy	.15	.08	4.71	.00
Vehicle safety skills	.16	.11	4.50	.00
Development	.27	.16	7.95	.00

* The regression coefficient estimates the increase in score (on a 4-point scale) for every additional year of PY/PM exposure.

† The d.f. are adjusted for the nested design and incorporate race as a dummy-coded covariate. The n sizes differ per scale from 747 to 753, number of schools = 9.

‡ The p value is based on adjusted t tests and rounded to 2 digits.

difficulty remembering their birthdays and were confused by the instructions to use only their initials. Although this procedure was changed in subsequent years, researchers were unable to match later data to earlier data.

Another limitation of the study involved a natural confounding between years of exposure to the curriculum and geographic mobility. Students who relocated often had fewer years of PY/PM exposure, so effects seen for years of exposure could be due, in part, to differences in mobility, which may represent a risk factor for substance use.^{33,34}

The results showed that increased exposure to PY/PM leads to student gains in several domains. However, the increase in gains across years of exposure was not a steady incline for several scales, perhaps due, in part, to the low number of students exposed to PY/PM 1, 2, and 3 years. Most students were in the comparison group or were exposed to 4 years of the intervention.

Finally, resource limitations precluded collection of systematic data concerning implementation fidelity. Delivery effectiveness could have varied considerably, affected by such characteristics as teacher familiarity with PY/PM and the approach to teaching. A study assessing fidelity to the delivery of PY/PM is currently under way involving videotaping of teachers and analysis of the tapes.

CONCLUSIONS

The study findings are encouraging, although preliminary. Despite challenges presented by gathering data from, and administering information to, a young sample, analyses still detected single-year and cumulative effects for the curriculum. Only recently have school-based, alcohol prevention programs for young children emerged as a potential source of early intervention. This study suggests that it is possible to design and implement a program that can improve young children's knowledge regarding alcohol and their developing brains, teach them skills to protect themselves in dangerous situations, increase already high antialcohol attitudes, and change perceptions of alcohol's harmfulness. Most importantly, students exposed to the program retained the information over time, and an association existed between exposure and increased knowledge, skills, and resistance to underage alcohol use. Further research is needed to determine PY/PM's longitudinal effects with a true randomized control trial in which students are followed over time. ■

References

1. Johnson MB, Voas RB, Lange JE. Characteristics and motivations of U.S. residents who cross into Mexico to drink. Paper presented at: 10th Annual Meeting of the Society for Prevention Research; 2002; Seattle, Wash.
2. National Highway Traffic Safety Administration. *An Implementation Guide for Juvenile Holdover Programs*. Washington, DC: National Highway Traffic Safety Administration, Office of Juvenile Justice and Delinquency Prevention, American Probation and Parole Association; 2001. DOT HS 809 260.
3. O'Malley PM, Johnston LD. Drinking and driving among US high school seniors, 1984-1997. *Am J Public Health*. 1999;89(5):678-684.
4. Substance Abuse and Mental Health Services Administration. *Results from the 2002 National Survey on Drug Use & Health (NSDUH): National Findings*. Rockville, MD: US Dept of Health and Human Services, Office of Applied Studies. Available at: <http://www.oas.samhsa.gov/nhsda/2k2nsduh/Results/2k2Results.htm>. Accessed May 2004.
5. Johnston LD, O'Malley PM, Bachman JG. *Monitoring the Future National Survey Results on Adolescent Drug Use: Overview of Key Findings, 2002*. Bethesda, MD: National Institute on Drug Abuse; 2003.
6. Office of Applied Studies, Substance Abuse and Mental Health Services Administration. *National Household Survey on Drug Abuse, Main Findings, 1996*. Rockville, MD 1999. DHHS, 98-3251.
7. Grant BF, Dawson DA. Age of onset of alcohol use and its association with DSM-IV alcohol abuse and dependence: results from the national longitudinal alcohol epidemiologic survey. *J Subst Abuse*. 1997;9:103-110.
8. Grant B. The impact of family history of alcoholism on the relationship between age at onset of alcohol use and DSM-III alcohol dependence. *Alcohol Health Res World*. 1998;22(2):144-147.
9. Hingson R, Heeren T, Winter MR, Wechsler H. Early age of first drunkenness as a factor in college students' unplanned and unprotected sex attributable to drinking. *Pediatrics*. 2003;111(1):34-41.
10. Hingson R, Heeren T, Levenson S, Jamanka A, Voas RB. Age of drinking onset, driving after drinking, and involvement in alcohol-related motor vehicle crashes—driver characteristics and driver performance sections. In: Laurrell H, Schlyter F, eds. *Alcohol, Drugs and Traffic Safety—T 2000: Proceedings of the 15th International Conference on Alcohol, Drugs and Traffic Safety, May 22-26, 2000*. Vol 3. Stockholm, Sweden: ICADTS; 2000:946-952.
11. Anderson RN. *Deaths: Leading Causes for 1999* (National Vital Statistics Reports, Volume 49, No. 11). Atlanta, Ga: National Center for Health Statistics, National Vital Statistics System, Centers for Disease Control and Prevention. Available at: http://www.cdc.gov/nchs/data/nvsr/nvsr49/nvsr49_11.pdf. 2001.
12. Abbey A, Zawacki T, Buck PO, Clinton AM, McAuslan P. Alcohol and sexual assault. *Alcohol Res Health*. 2001;25(1):43-51.
13. Spear L. Adolescent brain and the college drinker: biological basis of propensity to use and misuse alcohol. *J Stud Alcohol*. 2002;(suppl 14):71-81.
14. Dryfoos JG. *Adolescents at Risk: Prevalence and Prevention*. New York, NY: Oxford University Press; 1990.
15. Bosworth K. *Drug Abuse Prevention: School-Based Strategies That Work*. Washington, DC: Educational Resources Information Center; 1997.
16. Tobler NS, Stratton HH. Effectiveness of school-based drug prevention programs: a meta-analysis of the research. *J Prim Prev*. 1997;18(1):71-128.
17. Botvin GJ, Schinke S, Orlandi MA. School-based health promotion: substance abuse and sexual behavior. *Appl Prev Psychol*. 1995;4(3):167-184.
18. Komro KA, Toomey TL. Strategies to prevent underage drinking. *Alcohol Res Health*. 2002;26(1):5-14.
19. Gottfredson DC, Wilson DB. Characteristics of effective school-based substance abuse prevention. *Prev Sci*. 2003;4(1):27-38.
20. Caulkins J, Pacula R, Paddock S, Chiesa J. *School-Based Drug Prevention: What Kind of Drug Use Does it Prevent?* Santa Monica, Calif: RAND; 2002. MR-1459-RWJ.
21. Drug Strategies. *Making the Grade: A Guide to School Drug Prevention Programs*. Washington, DC: Drug Strategies; 1999.
22. Califano JA Jr. *Teen Tippers: America's Underage Drinking Epidemic*. New York, NY: National Center on Addiction and Substance Abuse, Columbia University. Available at: <http://www.casacolumbia.org/absolutenm/templates/articles.asp?articleid=247&zoneid=31>. Accessed May 2004.
23. Lloyd J. Alcohol and young people: a case for supporting education about alcohol in primary and secondary schools. *Educ Rev*. 1996;48(2):153-163.
24. Noll RB, Zucker RA, Greenberg GS. Identification of alcohol by smell among preschoolers: evidence for early socialization about drugs occurring in the home. *Child Dev*. 1990;61(5):1520-1527.
25. Fossey E. Young children and alcohol: a theory of attitude development. *Alcohol Alcohol*. 1993;28(4):485-498.
26. Substance Abuse and Mental Health Services Administration. *Results from the 2002 National Survey on Drug Use & Health (NSDUH): National Findings*. Rockville, MD: US Dept of Health and Human Services, Office of Applied Studies. 2002. Available at: <http://www.oas.samhsa.gov/nhsda/2k2nsduh/Results/2k2Results.htm>. Accessed May 2004.
27. Bohman T, Barker T, Bell ML, Lewis CM, Holleran L, Pomeroy E. Early intervention for alcohol use prevention and vehicle safety skills:

evaluating Protecting You/Protecting Me. *J Child Adolesc Subst Abuse*. 2004;14(1):17-40.

28. Bell ML, Baker TK, Falb T, Roberts-Gray C. Protecting You/Protecting Me: evaluation of a student-led alcohol prevention and traffic safety program for elementary students. *J Alcohol Drug Educ*. 2005; 49(1):33-53.

29. Hansen WB. *Prevention Programs: Factors That Individually Focused Programs Must Address*. Secretary's Youth Substance Abuse Prevention Initiative; 1997:53-65.

30. Center for Substance Abuse Prevention (CSAP). *Core Measures Initiative, Phase I Recommendations*. Rockville, MD: US Dept of Health and Human Services, Public Health Service, Substance Abuse and Mental Health Services Administration; 1999.

31. Borgers N, de Leeuw E, Hox J. Children as respondents in survey research: cognitive development and response quality. *Bull Methodol Sociol*. 2000;66:60-75.

32. STATA [computer software]. Version 8.2. College Station, Tex: StataCorp; 2004.

33. Hawkins D, Catalano R. Risk and protective factor prevention: what does it mean for community prevention planning? Available at: http://www.mfiles.org/Marijuana/take_action/b3_hc_riskandprotectivefactorprevention.html. Accessed May 2004.

34. Catalano RF, White HR, Hawkins JD, Pandina RJ. Predicting delinquency and marijuana use among adolescents. Paper presented at: Annual meeting of the American Society of Criminology; November 1985; San Diego, Calif.