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Peer and Parent Influences on Smoking and Drinking Among Early Adolescents

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Social influences can promote or discourage adolescent substance use. The authors surveyed 4,263 sixth- to eighth-grade students to assess the effect of peer and parent influences on adolescent substance use. The authors conducted separate multiple logistic regression analyses for smoking and drinking, controlling for grade, sex, and race. Positive independent associations with smoking and drinking were found for direct peer pressure and associating with problem-behaving friends. Independent negative associations with smoking and drinking were also found for parent involvement, parent expectations, and parent regard. In an analysis of interactions, peer pressure was positively associated with drinking for girls but not for boys and problem-behaving friends was positively associated with drinking for both boys and girls. The findings are consistent with the hypothesis that associating with deviant peers promotes and that authoritative parenting protects against smoking and drinking.

Experimentation with smoking and drinking increases dramatically during adolescence. Nationally, less than 10% of 6th graders report smoking or drinking in the past 30 days.¹ However, 19.1% of 8th graders and 33.5% of 12th graders report smoking and 24.6% of 8th graders and 51.3% of 12th graders report drinking in the past 30 days.¹ Early experimentation with these substances is associated with both immediate and lasting problems, including abuse and dependence, which can result in profound, long-term health and social consequences.²⁻⁴ Therefore, a number of national health objectives address the prevention of adolescent smoking and drinking.⁵

A variety of factors have been found to be associated with adolescent smoking^{6,7} and drinking.^{8,9} Peer influence is one of the factors most commonly linked to adolescent substance use.^{7,8} Peer influences to smoke or drink may be direct or indirect. Direct peer pressure may occur in the form of encouragement, dares, or actual offers of the substances. Indirect peer influences can occur when youth associate with peers who drink or smoke,

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increasing the availability of these substances, providing role models, establishing substance use as normative, and creating the perception that using these substances might increase social acceptance. Most school-based approaches to substance use prevention include objectives that address peer influences. For example, peer pressure resistance training is one of the main activities of the popular DARE substance abuse prevention program.¹⁰ Relatedly, an objective of Project Smart, one of the few well-evaluated substance abuse prevention programs that has been shown to be effective, is to prevent the establishment of perceived social norms that smoking and drinking are prevalent and acceptable behaviors among youth.¹¹

Parenting practices are thought to be another important source of social influence on adolescent substance use.¹²⁻¹⁵ There is evidence that teens whose parents smoke are more likely to smoke,^{7,16} presumably because cigarettes are readily available at home and possibly because parents model smoking behavior and lack credibility as advocates of nonsmoking. Authoritative parenting practices, in which parents are both demanding and responsive to their adolescent children, appear to protect youth against substance use.¹⁷⁻¹⁹ High parent expectations, involvement, and monitoring have been found to be negatively associated with substance use.^{14,20,21} However, research on parenting practices is limited, and parenting variables have been measured in a variety of ways. Thus, it is unclear which dimensions of parenting might be most important in protecting youth from substance use and other risk-taking behaviors. Also, few studies have included multiple measures of parenting and peer influences on smoking and drinking.^{13,22-24}

The purpose of this article is to examine the extent to which peer and parent influences are associated with smoking and drinking in a population of middle-school students. This research adds to the literature on adolescent smoking and drinking by assessing both direct and indirect peer influences and several dimensions of peer and parent influences in multivariate analyses.

METHOD

Subjects

The sixth-, seventh-, and eighth-grade students in all seven middle schools in a Maryland school district were recruited for the study. The schools are located in a suburb of Washington, D.C., that includes two small cities, with a large and rapidly growing population located nearer to Washington and a sparse, rural population farther away from the city. The county is predominantly white but includes a relatively large minority of African Americans. Active student consent and passive parent consent procedures²⁵ were employed after review and approval of the study protocol by the Institutional Review Board of the National Institute of Child Health and Human Development and authorized representatives of the school district.

Procedure

Participating students completed a questionnaire in class or during a makeup session. Two trained proctors administered data collection in each class of 20 to 30 students. As required by the school district, classroom teachers remained in the classroom, responsible for student discipline, but were instructed not to circulate around the room or other-

wise be involved in the conduct of the survey. To protect confidentiality, students completed and turned in a cover page, which included their name, survey identification number, birth date, and home room teacher's name, that was kept separate from the questionnaires. The actual questionnaires had only a numerical identifier matching the one on the cover page.

Instrument/Measures

The questionnaire consisted of items concerning substance use, background factors, and peer and parent influences.

Smoking and Drinking

Smoking was assessed by asking, "How many times have you smoked a cigarette, even a puff, in the past 30 days?" Response categories were 0, 1-2, 3-9, 10-19, and 20 or more. Drinking was assessed by asking, "How many times have you had alcoholic beverages (beer, wine, liquor) to drink in the past 30 days?" Response categories were 0, 1-2, 3-9, 10-19, and 20 or more. These questions are similar to those commonly asked in substance abuse surveys.¹ Substantial evidence indicates that self-reports produce reliable and valid estimates of substance use when procedures to ensure confidentiality are employed, as in this study.^{26,27}

Independent Variables

Background Variables. Questionnaire items assessed demographic and contextual factors, including gender, race, school attended, mother's education (12th grade or less vs. some college), and family structure (two parents living at home vs. one). Also, we asked whether any adults living at the student's home smoke cigarettes.

Peer Influences. We measured direct peer influence (peer pressure) by asking the respondent to indicate in separate questions if in the past year a friend had encouraged him or her to smoke or drink. Indirect peer influence on smoking was assessed by questions that asked how many of the respondent's five closest friends smoke and how many drink alcohol.

Parenting Practices. Six items on parent involvement, focusing on how much the parent knows (*knows almost nothing, knows a little, knows a lot*) about the teen's friends, activities, and interests, were adapted from the work of Hetherington et al.²⁸ We developed a six-item index of parent expectations that included questions about how upset parents would be if they found out the student smoked, drank alcohol, got in a physical fight, got in trouble at school, did poorly on a test, or was disrespectful toward an adult (*not at all, a little, somewhat, extremely upset*). The four items on parent monitoring (e.g., "I have a parent who checks up to see whether I have done what they told me to do"), five items on support (e.g., "I have a parent who helps me with things"), and seven items on psychological autonomy (e.g., "I have a parent who likes me the way I am") were adapted from research on parenting style.^{29,30} A four-item index of parent-child conflict (e.g., "I have a parent with whom I am often angry") was adapted from work by Robin and Foster.³¹

Analyses

Drinking and smoking in the past 30 days served as the dependent variables for all analyses. Due to the typically low prevalence of smoking and drinking among early adolescents, the dependent variables were dichotomized into no use or any use in the past 30 days. Based on the response distributions, interval-level, independent variables were categorized into high or low (median split) or high, medium, and low groups. This procedure allows for the calculation of odds ratios (ORs) for several levels of each independent variable. Each of the independent variables significantly associated with the outcomes in bivariate regression analyses (the 95% confidence intervals [CIs] did not include 1.0) was examined through multivariate logistic regression analyses using SAS Proc GenMod. Grade, gender, and race were controlled for in the multivariate analyses. School was not significant in the bivariate analyses and, therefore, was not included in the multivariate analyses. Independent variables not contributing significantly to the multivariate models were eliminated one at a time. Race and gender interactions were then tested in separate multivariate models.

RESULTS

Sample Characteristics

After 417 special education students with reading difficulties were excluded, 4,668 students were eligible to participate. The parents of 302 students refused to allow their children to participate, and 103 students were absent on both the initial and makeup dates for the survey. Consequently, 4,263 (91.3%) participants completed the survey. Of the participants, 49.1% were boys and 50.9% were girls, 67.1% were white, 23.5% were African American, and 7.2% were of another race (1.7% Hispanic, 2.4% American Indian, 2.0% Asian/Pacific Islander, 0.5% multiracial, 0.6 other).

Prevalence

Of the 4,263 study participants, 360 (8.4%) did not complete the 30-day smoking item and 386 (9.1%) did not complete the 30-day drinking item. Nonrespondents were significantly more likely to be male (11%-12%) than female (6%-7%), African American (12%-13%) than white (6%-7%), and in the sixth or seventh grade (9%-10%) than in the eighth grade (6%-7%). The prevalence of smoking and drinking in the past 30 days is shown in Table 1 by grade, sex, and race for the 3,903 study participants who reported their smoking status and the 3,877 study participants who reported their drinking status. Overall smoking prevalence was 10.4% and increased from 3.8% in the sixth grade to 9.1% in the seventh grade and 17.8% in the eighth grade ($p = .001$). Similarly, drinking prevalence was 12.6%, increasing from 6.5% in the sixth grade to 11.1% in the seventh grade and 19.6% in the eighth grade ($p = .001$). Prevalence did not vary significantly by gender or race. Only 7.2% of teens who reported not smoking in the past month reported drinking, whereas 57% of smokers also reported drinking ($p = .001$). Among nondrinkers, 5.0% reported smoking in the past month compared with 48% of drinkers who reported smoking in the past month ($p = .001$).

Table 1. Prevalence of Smoking and Drinking in the Past 30 Days by Grade, Sex, and Race

Variable	Smoking		Drinking	
	<i>n</i>	%	<i>n</i>	%
Total ^a	3,903	10.4	3,877	12.6
Grade ^{b,c}				
Sixth	1,254	3.8	1,243	6.5
Seventh	1,304	9.1	1,285	11.1
Eighth	1,345	17.8	1,349	19.6
Sex ^d				
Male	1,843	10.4	1,831	12.1
Female	2,025	10.5	2,015	13.1
Race ^e				
White	2,663	11.2	2,653	13.0
African American	889	9.5	876	11.6
Other	295	10.6	294	12.2

a. Does not include 360 participants who did not report smoking and 386 study participants who did not report drinking.

b. Significant grade differences for smoking, $\chi^2(2) = 140.0, p = .001$.

c. Significant grade differences for drinking, $\chi^2(2) = 103.9, p = .001$.

d. Sex missing on 35 study participants for smoking and 31 study participants for drinking.

e. Race missing on 56 study participants for smoking and 54 study participants for drinking.

Bivariate Analyses

Among demographic variables, only grade was significant in bivariate analyses, whereas school, sex, race, and socioeconomic status (mother's education) were not. Descriptive information about the psychosocial variables is included in Table 2, along with the results of the unadjusted logistic regression analyses. Internal consistency of the scales was good, with alpha coefficients above .8, except for parent monitoring. Only minor variations in internal consistency were found by race, with whites lower than "other" on peer pressure (.83 vs. .90) and parent expectations (.80 vs. .88) and "other" lower than whites on parent support (.82 vs. .87) and lower than whites and African Americans on parent monitoring (.63 vs. .70).

Also shown in Table 2, all unadjusted ORs were significant for both smoking and drinking. ORs above 1.0 and a lower boundary of the 95% CI greater than 1.0 are significant positive associations. ORs below 1.0 and an upper boundary of the 95% CI less than 1.0 are significant negative associations. Peer pressure, problem-behaving friends, and conflict were positively associated with smoking and drinking, whereas parent involvement, expectations, support, monitoring, and regard were negatively associated with smoking and drinking. The variable problem-behaving friends provided the greatest associations with both smoking and drinking. For the three-level variables, ORs were greater for the higher level compared with the low (referent) than for the medium level compared with the low (referent).

Multivariate Analyses

Separately for smoking and drinking, peer variables initially were analyzed in one block and parent variables in another. Variables significant in the block analyses were

Table 2. Characteristics of the Independent Variables ($N = 4,263$ total across all grades) and Unadjusted Odds Ratios for Smoking

Variable	Number of Items	α	Mean	SD	Range	(Referent) ^a	Smoking Past 30 Days ($n = 3,868$)		Drinking Past 30 Days ($n = 3,877$)	
							Odds ^b Ratio	95% Confidence Interval	Odds ^b Ratio	95% Confidence Interval
Peer pressure	8	.84	1.66	2.59	0-16	(Low)	1.00		1.00	
						High	7.13	5.36, 9.50	4.49	3.57, 5.65
Friends' problem behavior	7	.86	0.55	7.05	0-35	(Low)	1.00		1.00	
						Medium	4.77	2.53, 8.98	2.18	1.46, 3.25
						High	33.29	18.60, 59.57	12.27	8.66, 17.38
Parental involvement	6	.81	15.95	2.53	6-24	(Low)	1.00		1.00	
						Medium	0.27	0.21, 0.35	0.35	0.28, 0.45
						High	0.11	0.08, 0.16	0.20	0.16, .026
Expectations	6	.82	19.76	3.59	6-24	(Low)	1.00		1.00	
						Medium	0.25	0.19, 0.33	0.31	0.26, 0.39
						High	0.11	0.08, 0.15	0.14	0.10, 0.18
Parent support	5	.86	17.14	3.00	5-20	(Low)	1.00		1.00	
						Medium	0.37	0.27, 0.51	0.48	0.36, 0.63
						High	0.27	0.22, 0.38	0.33	0.26, 0.41
Parent monitoring	4	.68	13.84	2.00	4-16	(Low)	1.00		1.00	
						High	0.29	0.23, 0.38	0.35	0.28, 0.43
Parental regard	7	.89	23.18	4.33	7-28	(Low)	1.00		1.00	
						Medium	0.36	0.28, 0.47	0.41	0.32, 0.51
						High	0.20	0.15, 0.27	0.29	0.23, 0.38
Parent-adolescent conflict	4	.83	8.41	3.27	4-16	(Low)	1.00		1.00	
						Medium	1.62	1.18, 2.22	1.62	1.23, 2.15
						High	3.36	2.53, 4.47	3.05	2.36, 3.94

a. Variables were dichotomized or trichotomized based on the response distribution.

b. Unadjusted odds ratios.

added to the final model, which retained grade, sex, and race as control variables. The analyses for smoking also included the variable an adult at home smokes. Parent monitoring, parent support, and parent-teen conflict were not significant in the blocked analysis and were dropped from further analyses through the process of backward elimination. Peer pressure, problem-behaving friends, parent expectations, parent involvement, and parent regard (as well as adult at home smokes in the smoking analysis) were included in the multiple logistic regression analyses, shown in Table 3.

The goodness of fit of the model was determined by calculating the deviance of the model, defined as twice the difference between the maximum attainable log likelihood and the log likelihood of the model divided by the degrees of freedom. A deviance/degree-of-freedom score of 0 would indicate a perfect model fit, whereas a score of greater than 1.0 would indicate that the model explained little of the variance. Adding the significant variables from parent block to the control and peer variables reduced the deviance/degrees-of-freedom score from 0.51 to 0.47 for the final model of smoking and from 0.64 to 0.61 for the final model of drinking, indicating reasonably good fit and that the parent variables contribute to the goodness of fit of the regression model.

In the final models, several demographic, peer, and parent variables were significant. Among demographic variables, eighth graders were more likely to smoke or drink than sixth graders and girls were more likely to drink than boys. African Americans were less likely to smoke and drink than whites. Also, those with a parent at home who smokes were more likely to smoke.

Peer pressure was positively associated with smoking and drinking. Students who had been offered a cigarette (peer pressure) were 1.78 times as likely to smoke, and those who had been offered alcohol were 1.48 times as likely to drink, as students who had not been offered these substances. Those with one friend who smoked were 2.73 times as likely to smoke and those with two or more friends who smoked were 9.46 times as likely to smoke as those with no friends who smoked. However, those with one friend who drank were not significantly more likely to drink, but those with two or more friends who drank were 4.52 times as likely to drink as those with no drinking friends.

Several parent variables were negatively associated with smoking and drinking in the final analytic models. Compared with low parent involvement, those whose parents were highly involved were 0.4 times as likely to smoke (OR = 2.5 times less likely to smoke) and 0.6 times as likely to drink (OR = 1.67 times less likely to drink). Compared with those whose parents had low expectations, study participants with parents with high expectations were 0.39 times as likely to smoke (OR = 2.56 times less likely to smoke) and 0.32 times as likely to drink (OR = 3.13 times less likely to drink). Compared with those whose parents provided low regard, those whose parents provided high regard were 0.63 times as likely to smoke (OR = 1.59 less likely to smoke) and 0.75 as likely to drink (OR = 1.33 times less likely to drink). Except for regard and drinking, the magnitude of the ORs was greater for the high-versus-low comparison than for the medium-versus-low comparisons.

Whereas no significant interactions were found for smoking, significant sex by peer pressure and sex by problem-behaving friends interactions were found for drinking. These significant interactions did not affect by more than 0.1 the ORs for the other variables in the multivariate model or the estimates of the fit of the original multivariate models. The OR for girls with high peer pressure compared with girls with low peer pressure was 1.97 (95% CI = 1.33, 2.82), whereas the OR for boys with high peer pressure compared with boys with low peer pressure was not significant (OR = 1.07, 95% CI = 0.74, 1.03). Associating with problem-behaving friends was a significant risk factor for both

Table 3. Final Multiple Logistic Regression Models for Smoking and Drinking in the Past 30 Days

Variable (referent)	Smoking (<i>n</i> = 3,451) ^a		Drinking (<i>n</i> = 3,615) ^a	
	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval
Grade				
(Sixth)	1.00		1.00	
Seventh	1.47	0.96, 2.26	1.03	0.75, 1.43
Eighth	2.36	1.58, 3.55	1.40	1.03, 1.91
Sex				
(Male)	1.00		1.00	
Female	1.16	0.90, 1.50	1.32	1.06, 1.49
Race				
(White)	1.00		1.00	
Black	0.65	0.47, 0.89	0.68	0.52, 0.90
Other	1.24	0.77, 2.00	1.03	0.68, 1.57
Peer pressure				
(Never)	1.00		1.00	
Ever	1.78	1.25, 2.54	1.48	1.12, 1.97
Problem friends				
(Zero)	1.00		1.00	
One	2.73	1.34, 5.55	1.40	0.91, 2.15
Two or more	9.46	4.77, 18.77	4.52	2.98, 6.86
Parent involvement				
(Low)	1.00		1.00	
Medium	0.54	0.40, 0.73	0.64	0.49, 0.83
High	0.40	0.27, 0.60	0.60	0.44, 0.83
Parent expectations				
(Low)	1.00		1.00	
Medium	0.52	0.38, 0.70	0.54	0.41, 0.70
High	0.39	0.27, 0.57	0.32	0.23, 0.44
Parental regard				
(Low)	1.00		1.00	
Medium	0.75	0.56, 1.01	0.71	0.54, 0.92
High	0.63	0.43, 0.94	0.75	0.55, 1.00
Adult at home smokes				
(No)	1.00	1.12, 1.87		
Yes	1.45			
Deviance statistic ^b	0.48		0.61	

a. Complete data on all variables.

b. Two times the difference between the maximum log likelihood and the log likelihood of the model divided by the degrees of freedom.

boys and girls, but the OR was greater for girls than for boys. The OR for girls with several problem-behaving friends compared with girls with few problem-behaving friends was 7.63 (95% CI = 4.17, 13.97), whereas the OR of boys with several problem-behaving friends compared with boys with few problem-behaving friends was 2.81 (95% CI = 1.68, 4.68).

DISCUSSION

The purpose of this study was to examine social influences on adolescent smoking and drinking. This is one of the few studies to include multiple measures of peer and parent influences. Notably, the rate of participation in this study was high. However, the students who refused to participate or were absent (8.7%) may have been different from the participants in important ways. Moreover, the participants who did not answer the questions on smoking (8.4%) or drinking (9.1%) differed on demographic variables and may have been more likely to smoke or drink compared with students who participated and responded fully, causing an underestimation of the true prevalence and strength of associations. Due to the cross-sectional study design, the findings cannot be assumed to be causal. Also, because the sample was drawn from a single, convenient school district, generalization to other populations is limited.

Prevalence

The prevalence of smoking and drinking in our sample was similar to that reported in a national sample.¹ In our sample, girls were more likely than boys to drink and eighth graders were more likely to smoke and drink than sixth graders. Also, African Americans were less likely than whites to drink or smoke, consistent with other research.³²

Peer Influences

Direct and indirect peer pressure was positively associated with smoking and drinking in adjusted analyses. Although direct offers of cigarettes or alcohol were independently associated with smoking and drinking, the magnitude of these associations was considerably less compared with associating with substance-using friends. Peer influence has frequently been found to be associated with smoking⁷ and drinking,⁸ and prospective studies have confirmed that adolescents who associate with deviant peers are more likely to initiate substance use.³³⁻³⁷ Teens may start smoking or drinking when their friends do because their friends encourage them, cigarettes and alcohol are available from them, and they would expect approval from these friends for using these substances. Also, teens attracted to smoking and drinking may seek out and befriend others who also use these substance. Our findings underscore the powerful influence affiliation with substance-using peers can have on smoking and drinking.

The relationships between peer influences and drinking varied by sex. Notably, peer pressure was significantly associated with drinking among girls but not among boys. Relatedly, the risk of drinking was several times greater for girls with problem-behaving friends compared with boys with problem-behaving friends. This is consistent with other research suggesting that girls may be more susceptible than boys to peer influences to smoke^{36,37} or drink.³³

Parent Influences

The findings also are consistent with the conceptualization of authoritative parenting practices, which holds that adolescents respond best to parenting practices that are both demanding and responsive.³⁸ The findings are consistent with other studies that have demonstrated that the teens whose parents are involved, have high expectations for their behavior, and hold them in high regard are less likely to initiate substance use.^{19-24,35,39} It

should be noted that we measured only teens' perceptions of parent behaviors. Obtaining data on these variables directly from parents would be desirable but has proven to be difficult in population studies, as parents are hard to reach and measure accurately.⁴⁰ In contrast, teen reports of parent behavior are relatively easy to collect and vary widely. Moreover, it can be argued that teens' perceptions of their parents' attitudes and behavior may be more important influences on their behavior than parents' often optimistic perceptions of their parenting behavior.

We assessed the dimension of parent demandingness with teen-reported measures of monitoring, support, expectations, and involvement. Parent monitoring was not significantly associated with smoking or drinking, although research by Steinberg et al., using a measure that overlaps with our measures of monitoring and involvement, found that poorly monitored teens were likely to use drugs and then seek out drug-using peers.²⁰

The variable parent expectations was inversely associated with both smoking and drinking. This variable measures teens' perceptions of how concerned their parents would be if they found out about their substance use or other misconduct. Teens' positive expectations have been found in other studies to predict the onset of smoking^{35,39} and drinking.^{39,40} Theoretically, the perception by teens that their parents would disapprove if they found out they smoked or drank would affect teen behavior by altering teens' outcome and efficacy expectations^{41,42} and subjective norms⁴³ about substance use. Accordingly, teens who perceive that their parents hold high expectations for them would perceive that the likely outcomes of smoking and drinking would be less positive and less acceptable compared with teens who perceive that their parents are not very concerned about them smoking or drinking.

Parent involvement was negatively associated with smoking and drinking. This finding is similar to that of Cohen et al., who reported that teens whose parents spend more time with them and communicate with them more frequently were less likely to smoke or drink.¹⁴ Parents who are knowledgeable about their teens are likely to spend time with them, communicate well, and monitor their activities. These findings are consistent with other research that suggests that parents' interest and involvement in their teenage children's school life, friendships, and activities may protect against precocious substance use.⁴⁴ Our measure of parent involvement, which focused on how much a parent knows about the teen's friends, activities, and interests, overlaps the authoritative parenting dimensions of demandingness and responsiveness.

We measured three variables linked to parent responsiveness, including parent support, regard, and parent-teen conflict. Parent-teen conflict and support were not significantly associated with substance use in multivariate analyses, but parent regard was. Teens who perceived that their parents provided higher regard by indicating that they like them, respect them, take them seriously, listen to them, and give reasons for rules and decision that involve them were less likely to smoke or drink. This finding underscores the importance to early adolescents of how they perceive their parents to regard them. Theoretically, parental expectations should be more salient to adolescents who perceive themselves to be held in high regard by their parents.³⁸

It is noteworthy that the final multiple logistic regression models were similar for smoking and drinking. Some but not all smokers also drank, and many drinkers also smoked. Nevertheless, the same social influences that lead to smoking also lead to drinking among teens in our sample. The findings can be explained in terms of opportunity, expectations, and perceived norms. Teens with friends who smoke or drink would have

greater access to these substances through their friends and perceive them to be relatively positive and normative. Similarly, teens with parents who do not establish clear behavioral expectations, keep themselves informed about their teen's life, and demonstrate their regard for their teen are more likely to experiment with substance use. Our research suggests there is little difference in the types of social influences on early initiation of smoking and drinking. It may be that the actual choice of drug, tobacco, or alcohol among inclined youth is mainly a matter of opportunity. It could also be that social influence variables not measured in this research might be associated differentially with smoking or alcohol.

The evidence is firm that peer influences, particularly affiliation with deviant peers, is an important influence on substance use. Relatedly, there is a growing literature on the complex relationship between parent practices, peer influences, and substance use.^{13-24,33-37} For example, Duncan et al. demonstrated that inadequate parental monitoring, parent-child conflict, and associating with deviant peers were significant predictors of smoking, drinking, and marijuana use.³⁴ In another recent prospective study, Distefan et al. found that associating with friends who smoke and low parental concern about smoking (similar to our measure of parental expectations) predicted smoking onset.³⁵ However, the lack of standard measures of parenting practices makes it difficult to compare findings across studies or to make firm conclusions about which dimensions of parenting may be most important to adolescent behavior.

This is one of the first studies to report that both peer and parent influence variables are independently associated with smoking and drinking. We found that the variable problem-behaving friends provided larger adjusted ORs than other variables, suggesting that this peer influence may be more important than direct peer or parent influences. However, peer and parent influences on substance use may be interrelated in ways that cannot be described in this research because the cross-sectional design and ordinal nature of the data preclude path and other exploratory correlational analyses. Possibly, parents who are involved, have high expectations, and grant their teens substantial regard may also effectively influence their teens' selection and cultivation of friends, compared with other parents. Confirmation of this hypothesis, however, requires additional research of a prospective design. Our results are consistent with the hypothesis that deviant peers are a risk factor and that authoritative parents are a protective factor in smoking and drinking.

Implications for Practice

The finding that peer influences are associated with substance use confirms the importance of social skills training approaches to intervention. While no studies have shown that peer group affiliation can be systematically altered, numerous studies have shown that teens' social skills can be improved, and improved social skills protects teens from early initiation of smoking and drinking.⁴⁵ Our data suggest that social skills training may be even more important for girls than for boys. The finding that authoritative parenting practices are associated with substance use suggests the importance of directing interventions toward parents. It is important that authoritative parenting behaviors, such as frequent, open communication and an attitude of acceptance of the teen, are within the capabilities of most parents. As such, they hold considerable potential as objectives for parent education. The challenge is to find effective ways of reaching the parents of early adolescents and educating them about authoritative parenting practices.

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