Published in final edited form as:
Prev Sci. 2012 June ; 13(3): 267–277. doi:10.1007/s11121-011-0261-2.

Heterogeneous Friendship Affiliation, Problem Behaviors, and Emotional Outcomes among High-Risk Adolescents

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Abstract

Adolescent friendship groups are often heterogeneous and thus involve exposure to both deviant and nondeviant influences. This longitudinal study examined whether the addition of nondeviant peer influences in early high school protected against the negative socialization effects of deviant affiliation on both concurrent and future smoking, alcohol problems, and depressive symptomatology. Adolescents (9^{th} and 10^{th} grade students, $N = 1,128$) completed self-report questionnaires at both a baseline and 24-month assessment. Nondeviant affiliation consistently reduced the effects of deviant influences on smoking and alcohol problems but not on depressive symptoms. Findings reinforce the complexity of adolescent friendship influences and the notion that distinct mechanisms may drive the associations between deviant affiliations and behavioral and emotional outcomes throughout adolescence. Implications for prevention are also discussed.

Keywords

Adolescents; Peer Influences; Smoking; Alcohol; Depressive Symptoms

Peer influences are one of the strongest, consistent predictors of adolescent problem behaviors (see Brechwald & Prinstein, 2011, for a review). For example, affiliation with deviant peers has been independently linked to increased cigarette smoking and alcohol use (e.g., Dishion & Owen, 2002; Duncan, Duncan, & Strycker, 2006; Li, Barrera, Hops, & Fisher, 2002; Simons-Morton, Haynie, Crump, Eitel, & Saylor, 2001), as well as other problem behaviors (e.g., Brendgen, Vitaro, & Bukowski, 2000a; Padilla-Walker & Bean, 2009). A smaller body of research has also linked involvement with deviant peers to depressive symptoms (Brendgen et al., 2000a; Connell & Dishion, 2006; Fergusson, Wanner, Vitaro, Horwood, & Swain-Campbell, 2003; Padilla-Walker & Bean, 2009; Vitaro, Brendgen, & Wanner, 2005). Adolescent peer groups, though, are complex. Studies reveal that peer groups might be more heterogeneous and comprised of individuals who participate in both deviant and nondeviant behaviors (Crosnoe & Needham, 2004; Haynie, 2002; Prinstein, Boergers, & Spirito, 2001). The aim of the present study was to examine whether nondeviant peer influences might weaken the association between deviant influences in early high school and both concurrent and future cigarette smoking, alcohol problems, and depressive symptomatology. Adolescence, particularly entry into high school, is a high-risk time for smoking and alcohol use (Johnston, O'Malley, Bachman, & Schulenberg, 2009) as well as increases in depressive symptoms (Garber, Keiley, & Martin, 2002; Larson, Moneta, Richards, & Wilson, 2002). Examining the joint, long-term influence of deviant and

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nondeviant peer influences on these related outcomes may elucidate more targeted prevention implications for high-risk youth.

Peer influences become increasingly salient as adolescents mature and begin to rely heavily on their peers for emotional support and identity development (Smetana, Campione-Barr, & Metzger, 2006). Two prominent models of peer influences on adolescent substance use have emerged and been compared in the literature: social influence and social selection (see Kobus, 2003, for a review). Social influence models assert that deviant peers directly and indirectly influence adolescents to participate in substance use and other deviant behaviors through peer pressure, modeling, and behavioral reinforcement. Social selection models posit that adolescents seek out deviant friends based on their own pre-existing deviant tendencies. These theories are not mutually exclusive (e.g., Dishion & Owen, 2002), yet research has highlighted the distinct importance of social influence mechanisms. Through experimental and statistical control of social selection possibilities, research emphasizes the comparative strength and unique importance of social influence mechanisms on adolescent smoking (Hoffman, Monge, Chou, & Valente, 2007), general substance use, and other problem behaviors (Cook, Deng, & Morgano, 2007; Haynie, 2002).

Deviant Peer Influences and Depression

Adolescence is also a high-risk time for the development of depressive symptoms (Garber et al., 2002; Larson et al., 2002). Furthermore, depressive symptomatology is strongly associated with increases in both cigarette smoking and alcohol use in adolescence (Costello, Swendsen, Rose, & Dierker, 2008; Kassel, Weinstein, Skitch, Veilleux, & Mermelstein, 2005), suggesting that risk factors for substance use, such as peer influences, might be important for understanding emotional outcomes as well.

Research has more recently begun to examine the impact of deviant peer affiliations on adolescent depressive symptomatology. For example, studies show that affiliation with deviant peers in adolescence is associated with higher levels of depressive symptoms (e.g., Brendgen et al., 2000a; Connell & Dishion, 2006; Vitaro et al., 2005) as well as an enhanced risk for suicidal ideation and attempts among depressed youth (Fergusson, Beautrais, & Horwood, 2003). Brendgen and colleagues (2000a) compared adolescents with deviant friends, adolescents with nondeviant friends, and those with no friends, and found that adolescents who affiliated with deviant peers consistently reported the most delinquent behavior (e.g., alcohol and drug use, theft, and other norm-breaking behaviors). These same adolescents also reported higher levels of depressive symptoms than those with nondeviant peers and similarly high levels of symptoms as youth with no friends. Brendgen et al.'s (2000a) findings controlled for confounding factors (i.e., adolescents' own delinquent behavior) that might place adolescents at risk for the development of both deviant peer affiliations and depression.

Connell and Dishion (2006) also found that deviant peer affiliation in 10 to 14 year-olds consistently covaried with depressed mood over a nine-month period, controlling for youth's own delinquent behavior. Similarly, Vitaro et al. (2005) examined trajectories of deviant peer affiliation from late childhood through early adolescence and their respective delinquent and depressive outcomes. They found that "late affiliates", those who first began to affiliate with deviant peers during early adolescence, reported a rapid increase in depressive symptoms not observed prior to this time. Such a pattern of depressive symptoms was not reported among those who never affiliated with deviant friends or among those who reported deviant affiliations prior to adolescence. Thus, there may be something unique about new or enhanced exposure to delinquent peers during this highly sensitive time that enhances risk for depressive outcomes.

Based on research by Marcus (1996), Brendgen and colleagues (2000a) suggested that emotional maladjustment might occur because deviant friendships are lower quality and might thus be ill-equipped to provide necessary emotional support. Others have similarly suggested that deviant friendships might be more chaotic and less rewarding (Connell & Dishion, 2006). Connell and Dishion (2006) emphasize that the association between deviant peer affiliation and depression is not simply an artifact of adolescents' own substance use and other delinquent behaviors, but rather a unique, and understudied, developmental pathway.

Positive Effects of Nondeviant Peers

Many adolescents affiliate with both deviant and nondeviant peers and are thus exposed to counteracting social influences (Crosnoe & Needham, 2004; Haynie, 2002; Prinstein et al., 2001). Consistent with existing research in this domain, we operationalized nondeviant peers as those involved in conventional behavior, including both avoiding negative behavior (i.e., substance use) and doing well in school. Cook et al. (2007) found that affiliating with peers who engage in more positive behaviors, such as avoiding drug use and earning good grades, can lead to adaptive outcomes in multiple domains, including decreased general substance use (i.e., composite of cigarettes, alcohol, and marijuana), increased academic success, and improved emotional functioning. Cross-sectional studies have also shown that affiliating with positive peers in high school, defined as those involved in or encouraging involvement in school and religious activities, was associated with lower levels of depressive symptoms (Fredricks & Eccles, 2005; Padilla-Walker & Bean, 2009). Scholars suggest that such positive peer influences can improve adolescent outcomes by modeling and reinforcing such conventional behaviors as academic achievement and enhancing emotional functioning by providing strong social support (Fredricks & Eccles, 2005).

Research indicates that nondeviant peers protect against emotional and behavioral maladjustment independently, but they may also mitigate or circumvent the negative effects of deviant peer influences. For example, Brendgen, Vitaro, and Bukowski (2000b) showed that competing social influences can alter adolescents' behavioral trajectories. They found that adolescents' stable affiliation with delinquent friends at a baseline measurement, or integration into problematic peer groups one year later, prospectively predicted similarly high levels of deviant behavior two years after baseline (Brendgen et al., 2000b). Conversely, stable affiliation with non-delinquent friends, and a change from deviant to nondeviant networks from baseline to one year, was associated with similarly low levels of deviant behavior at two years. Adolescents with deviant peers appear to benefit greatly from additional nondeviant peer influences.

Adolescents who affiliate with deviant friends can also benefit from concurrent nondeviant influences (Haynie, 2002; Hussong, 2002). Haynie (2002) found that adolescents with heterogeneous friendship groups demonstrated significantly better behavioral outcomes than those with only delinquent influences. Hussong (2002) found that even if adolescents had substance-using best friends, their own risk for using substances greatly decreased if their broader peer networks reported lower levels of use. These findings indicate that adolescent exposure to nondeviant influences might lessen the deleterious behavioral, and perhaps emotional, consequences of deviant social involvement.

The Present Study

The current study examined the joint influences of deviant and nondeviant early high school friendship affiliation on behavioral and emotional outcomes both concurrently and longitudinally, two years later. Because mid-adolescents (i.e., ages 13-15) are particularly susceptible to peer influences (Sumter, Bokhorst, Steinberg, & Westenberg, 2009), we

targeted this age group to identify protective factors against negative peer socialization. We hypothesized that additional nondeviant peer influences would reduce the negative effects of deviant friendship affiliation on smoking, alcohol problems, and depressive symptoms, both concurrently and longitudinally, at a two-year follow-up. Specifically, we predicted that among those with higher levels of deviant affiliation, those with higher levels of nondeviant affiliation would demonstrate overall better outcomes than those with lower levels of nondeviant affiliation.

Methods

Overview of Design, Participant Recruitment, and Description

Data for this study come from the baseline and 24-month assessment waves of a large longitudinal study investigating the social and emotional contexts of adolescent smoking patterns. The cornerstone of the longitudinal study was the establishment of a cohort of adolescents comprised primarily of youth who had ever smoked.

Participants were recruited from 16 Chicago-area high schools. The sample was derived in a multi-stage process. All 9^{th} and 10^{th} graders at the schools ($N = 12,970$) completed a brief screening survey of smoking behavior. Invitations were mailed to eligible students and their parents. Students were eligible to participate in the longitudinal study if they fell into one of four levels of smoking experience: 1) never smokers; 2) former experimenters (smoked at least one cigarette in the past, have not smoked in the last 90 days, and have smoked fewer than 100 cigarettes in their lifetime); 3) current experimenters (smoked in the past 90 days, but smoked less than 100 cigarettes in lifetime); and 4) regular smokers (smoked in the past 30 days and have smoked more than 100 cigarettes in their lifetime).

We mailed recruitment packets to 3,654 eligible students and their parents. These recruitment targets included all youth in the “current experimenter” and “regular smoker” categories plus random samples from the “never smoker” and “former experimenter” categories. Youth were enrolled into the longitudinal study after written parental consent and student assent was obtained. It is important to note that all youth and parents had to agree to potentially participate in all components of the main, larger program project study including multiple longitudinal questionnaire assessments, an ecological momentary assessment study, a family observation study, and a psychophysiological laboratory assessment study. Of the 3,654 students invited, 1,344 agreed to participate (36.8%). Of these, 1,263 (94.0%) completed the baseline measurement wave. Our baseline sample of 1,263 youth included 213 never smokers, 304 “former experimenters,” 594 “current experimenters,” and 152 “regular smokers.” Agreement to participate did not vary by smoking history, race/ethnicity, or parental smoking, but girls were slightly more likely to agree to participate than boys.

The sample for the current study included 9^{th} and 10^{th} grade students from the total sample ($N = 1,128$) who provided questionnaire data on peer influences at baseline in addition to smoking, alcohol problems, and depressive symptoms at the baseline and 24-month assessments. Mean age of the participants at baseline was 15.63 (range 13.90-17.50); 58.1% were females, and the racial/ethnic composition was: 56.7% White, 16.8% Black, 16.6% Hispanic, 4.4% Asian or Pacific Islander, 0.2% American Indian or Alaskan Native, and 5.3% Other. Independent sample t-tests revealed that those excluded from this sample ($n = 135$) reported higher daily smoking rates at baseline ($M = 1.34$, $SD = 2.80$) than those included in the sample ($M = 0.84$, $SD = 1.85$), $t(148) = 2.02$, $p = .046$, and lower levels of nondeviant friendship affiliation ($M = 2.14$, $SD = 1.10$) than included participants ($M = 2.36$, $SD = 1.13$), $t(1260) = -2.14$, $p = .033$. In addition, there were more males in the excluded sample ($n = 75$) than females ($n = 60$), χ^2 (1, $N = 1263$) = 9.11, $p = .003$. Groups did not differ significantly on other relevant variables.

Measures

Demographic information was assessed via questionnaire and included age, grade, gender, ethnicity (Hispanic/Latino or not) and race (White, Black, American Indian/Alaskan Native, Asian, or Native Hawaiian/ Other Pacific Islander).

Support and belonging to risky peer networks was assessed with a modified Social Network Inventory for Tobacco Smokers (SNITS). The SNITS is a 16-item inventory that measures whether participants receive either emotional or belonging support from individuals who smoke (Mermelstein, Cohen, Lichtenstein, Baer, & Kamarck, 1986). This inventory was modified to include other behaviors of peers (alcohol use, trouble at school, level of academic achievement). Items ask about friends who provide either emotional support or companionship and whether these friends engage in problem (e.g., cigarette smoking, alcohol use, and getting into trouble) or non-problem (e.g., low levels of alcohol use, getting good grades in school) behaviors. Response options range from 0 (0 people) to 5 (5 or more people). Factor analyses using an oblimin rotation on SNITS data identified two unique factors: 1) problem behavior items (deviant) and 2) non-problem behavior items (nondeviant). These two scales have good internal reliability (coefficient alpha = .85 and .71, respectively). At baseline, the average level of deviant peer affiliation was 1.43 (SD = 1.12) and nondeviant was 2.36 (SD = 1.13). Bivariate correlations indicated a moderate amount of stability between corresponding baseline and 24-month affiliations (Deviant: r = .38; Nondeviant: r = .36). Neither the association between baseline deviant and 24-month nondeviant friendship (r = −.03) nor the association between baseline nondeviant and 24-month deviant friendship (r = .05), was significant.

Current smoking was assessed by asking the participants to “Think about the past 30 days. On the days you smoked cigarettes, about how many cigarettes did you smoke each day?” Although participants were oversampled for ever having smoked cigarettes, only 43.2% of the sample reported any smoking in the past month at baseline. Among those who did smoke, 287 participants (25.5% of the sample) reported smoking only one cigarette per day or less on days smoked. Due to the highly positively skewed nature of the distribution, we recoded this outcome into a dichotomous variable. We created one group of non-smokers (those who reported zero cigarettes per day in the past 30 days) and one group of smokers. At baseline, 43.2% of the sample reported smoking, and at 24 months, 42.1% reported smoking. Because even low levels of smoking during adolescence increase risk for future smoking (Mermelstein et al., 2002), such recoding maintained the theoretical significance of this variable and is consistent with standard definitions of current smoking among adolescents (e.g., Johnston et al., 2009).

Level of problem alcohol use was measured using a 5-item scale asking participants: 1) “When did you last drink alcohol?” (response options range: 1 – “I have never drank alcohol” to 8 – “Today”); 2) “When you drink alcohol, how much do you usually have at one time, on average?” (response options range: 1 – “I don’t drink alcohol” to 8 – “More than 6 drinks”); 3) “What is the greatest amount of alcohol you’ve ever had at one time?” (response options range: 1 – “I don’t drink alcohol” to 8 – “More than 6 drinks”); 4) “During the past year, how often have you gotten drunk?” (response options range: 1 – “0 times” to 5 – “more than 10 times”); and 5) “During the past year, how often have you gotten into trouble because of drinking alcohol?” (response options range: 1 – “0 times” to 5 – “more than 10 times”). Items 4 and 5 were transformed to match the 1 to 8 scale of the other items. Responses for each item (ranging from 1-8) were averaged from scale scores. Coefficient alpha for this scale was high (coefficient alpha = .86). At baseline, the average level of problem alcohol use was 3.60 (SD = 1.68). At 24 months, the average was 4.31 (SD = 1.72).

Depressive symptoms were assessed via the Center for Epidemiological Studies Depression inventory (CES-D; Radloff, 1977). The CES-D assesses the frequency of depressive symptoms experienced in the past week, from 0 (rarely or none of the time) to 3 (most or all of the time). Research supports the validity and utility of the CES-D to measure depressive symptoms in high school adolescents (Lewinsohn, Rohde, & Seeley, 1998), and suggests that the clinical cutoff for adolescents is 22 for males and 24 for females, versus the adult cutoff of 16 (Lewinsohn et al., 1998; Radloff, 1977). Coefficient alpha in the current sample = .89. Adolescents in the present sample averaged CES-D scores of 16.93 (SD = 9.87) at baseline and 15.06 (SD = 9.47) at 24 months.

Results

Analytic Approach

We conducted moderated logistic regression analyses to predict smoking and separate standard moderated regressions to predict alcohol problems and depressive symptomatology. Centered scores representing baseline deviant affiliation and nondeviant affiliation, as well as the interaction between these two variables, were used to predict all outcomes. Based on previous research identifying gender differences in adolescent susceptibility to peer influences (Sumter et al., 2009), gender was included as a control in all regressions and also examined with deviant and nondeviant affiliations in a three-way interaction to predict all outcomes. Given the study's primary focus on the interactive nature of deviant and nondeviant influences, only the three-way interactions with gender were of important theoretical significance. None of the three-way interactions were significant and thus, the moderating role of gender will not be discussed further. When examining the influence of baseline friendship on 24-month outcome variables, we controlled for the respective baseline smoking, alcohol, or depressive outcomes, so as to identify how peers influenced *changes* in that outcome over the 24 months. Consistent with previous research (Brendgen et al., 2000a; Connell & Dishion, 2006), we also controlled for the potential confounding factor of baseline deviant behavior (i.e., smoking status and alcohol problems) when predicting depressive outcomes. To further interpret all interactions, we tested the simple slopes of deviant affiliation on the outcome variable of interest at high and low levels of nondeviant affiliation (Aiken & West, 1991).

Smoking

Baseline—Results indicated that higher levels of deviant affiliation at baseline increased odds of smoking at baseline, and higher levels of nondeviant affiliation at baseline decreased the risk of smoking at baseline (see Table 1). Consistent with hypotheses, these main effects were qualified by a significant interaction between deviant and nondeviant affiliation. For both those high and low in nondeviant affiliation, higher deviant affiliation was associated with increased odds of smoking, b = 0.61, SE = 0.08, p < .001, OR = 1.85, 95%CI [1.59, 2.15], and, b = 1.01, SE = 0.10, p < .001, OR = 2.73, 95% CI [2.24, 3.33], respectively. As predicted, this relationship was significantly weaker for those higher in nondeviant affiliation as compared to lower in nondeviant affiliation (see Figure 1).

Twenty-four months—Longitudinal results at 24 months paralleled those at baseline and demonstrated that higher levels of deviant affiliation at baseline were associated with an increased likelihood of smoking two years later, and higher nondeviant affiliation at baseline was associated with reduced risk of smoking two years later (see Table 2). Consonant with hypotheses, these main effects were also qualified by a significant interaction between deviant and nondeviant affiliation. Results showed that for those higher in nondeviant affiliation, there was no relationship between deviant affiliation and smoking, b = 0.07, SE = 0.08, *ns*, OR = 1.07, 95% CI [0.92, 1.25]. Conversely, for those lower in nondeviant

affiliation, a positive association remained between deviant affiliation and 24-month smoking, $b = 0.32$, $SE = 0.09$, $p = .001$, $OR = 1.38$, 95% CI [1.15, 1.65] (see Figure 2).

Level of Problem Alcohol Use

Descriptive data of alcohol use—At baseline, 87.9% ($n = 991$) of the sample reported ever trying alcohol, 62.0% ($n = 699$) reported being drunk at least once in the previous year, 75.1% ($n = 847$) reported ever consuming *at least* two drinks at one time, and 34.3% of the total sample ($n = 387$) reported ever consuming more than six drinks at one time. At 24 months, 91.0% of the sample ($n = 1027$) reported ever trying alcohol, 74.4% ($n = 839$) reported being drunk at least once in the previous year, and 84.6% ($n = 954$) reported ever consuming *at least* two drinks at one time. By 24 months, 57.9% of the total sample ($n = 653$) reported ever consuming more than six drinks at one time.

Baseline—Higher levels of deviant affiliation at baseline were associated with higher levels of problem alcohol use at baseline, $b = 0.66$, $t(1123) = 15.95$, $p < .001$, and higher levels of nondeviant affiliation at baseline were associated with lower levels of problem use at baseline, $b = -0.20$, $t(1123) = -5.04$, $p < .001$. As predicted, these main effects were qualified by a significant interaction between deviant and nondeviant affiliation, $b = -0.17$, $t(1123) = -5.29$, $p < .001$. Results revealed that for both those higher and lower in nondeviant affiliation, higher deviant affiliation was associated with higher problem use, $b = 0.46$, $t(1123) = 9.05$, $p < .001$, and, $b = 0.85$, $t(1123) = 14.38$, $p < .001$, respectively. However, as predicted, this relationship was significantly weaker for those higher in nondeviant affiliation as compared to lower in nondeviant affiliation (see Figure 3).

Twenty-four months—Longitudinal results showed that higher levels of nondeviant affiliation at baseline were associated with increases in problem alcohol use over two years, $b = 0.14$, $t(1122) = 3.75$, $p < .001$. Conversely, there was no association between deviant affiliation and increases in problem alcohol use, $b = -0.03$, $t(1122) = -0.69$, *ns*. As predicted, the nondeviant main effect was qualified by an interaction between deviant and nondeviant affiliation, $b = -0.07$, $t(1122) = -2.22$, $p = .027$. Results showed that for those with higher levels of nondeviant affiliation, higher deviant affiliation was associated with a decline in levels of problem alcohol use, $b = -0.10$, $t(1122) = -2.16$, $p = .031$. Among those lower in nondeviant affiliation, there was no relationship between deviant affiliation and later levels of problem alcohol use, $b = 0.05$, $t(1122) = 0.80$, *ns* (see Figure 4).

Depressive Symptomatology

Baseline—Higher levels of deviant affiliation at baseline were associated with higher depressive symptoms at baseline, $b = 0.98$, $t(1121) = 3.37$, $p = .001$, and higher levels of nondeviant affiliation at baseline were associated with fewer depressive symptoms at baseline, $b = -1.69$, $t(1121) = -6.59$, $p < .001$. The interaction between deviant and nondeviant affiliation was not significant, $b = 0.13$, $t(1121) = 0.65$, *ns*.

Twenty-four months—Longitudinal results indicated that only higher levels of deviant affiliation at baseline were associated with higher depressive symptoms two years later, $b = 0.65$, $t(1120) = 2.35$, $p = .019$. In contrast, there was no main effect of nondeviant affiliation, $b = -0.21$, $t(1120) = -0.86$, *ns*, or deviant by nondeviant interaction, $b = 0.01$, $t(1120) = 0.04$, *ns*.

Discussion

This study examined whether the addition of nondeviant peers protected against the negative socialization effects of deviant affiliation on both concurrent and future smoking, alcohol

problems, and depressive symptoms among adolescents. The present study advances the literature in two ways. First, based on the heterogeneity of adolescent peer influences (e.g., Crosnoe & Needham, 2004), we sought to further explore how varying levels of nondeviant affiliation would alter the association between deviant peer involvement and both smoking and alcohol problems over time. Second, we aimed to extend preliminary evidence of an association between deviant peer affiliation and depression (e.g., Connell & Dishion, 2006) by examining how this multifaceted framework of peer influences was associated with emotional outcomes as well. Our findings varied by outcome. Specifically, our protective hypotheses were supported for both smoking and alcohol problems, albeit in slightly unique ways. In contrast, there was no evidence that adolescents with heterogeneous friendship affiliations showed better depressive outcomes than youth with primarily deviant influences.

Smoking

As expected, our results corroborate and extend cross-sectional research demonstrating the protective effects of nondeviant influences on delinquent behavior (e.g., Haynie, 2002). Findings showed that nondeviant influences lessened both the concurrent and long-term impact of deviant influences on smoking-specific outcomes. Specifically, the association between deviant affiliation and smoking was significantly weaker at baseline and no longer present at 24 months among those high compared to low in nondeviant affiliation. Our results provide support for the protective role of counteracting social influences on behavioral outcomes throughout adolescence (e.g., Brendgen et al., 2000b). Findings also highlight the salience of deviant exposure on behavior during middle adolescence. Additional nondeviant affiliation reduced but did not eliminate the risk of baseline smoking. Early high school is a peak time for smoking trials (Johnston et al., 2009). Such elevation in use, coupled with the enhanced susceptibility of antisocial conformity during this time, might intensify even minimal deviant influences.

Perhaps more compelling is that joint nondeviant influences eliminated the risk of smoking at 24 months. Studies examining patterns of adolescent smoking behavior show that both experimenters (i.e., those who try smoking but do not progress) as well as late adopters (i.e., those who begin smoking regularly later in adolescence) demonstrate complex (Audrain-McGovern et al., 2004; Chassin, Presson, Pitts, & Sherman, 2000) and relatively low-risk profiles (Costello, Dierker, Jones, & Rose, 2008) when compared to higher-level smokers. Audrain-McGovern et al. (2004) and Chassin et al. (2000), for example, found that experimenters showed similarities to higher level smokers, such as having smoking and substance-using friends, but also beneficial differences, including achieving higher rates of college attendance. Audrain-McGovern et al. (2004) also found that late adopters reported both exposure to smoking peers as well as involvement in academic and extracurricular activities. Such contrasting trajectories could explain why we observed a null finding among this heterogeneous group when examining smoking over time. Our study is limited by examining smoking as a dichotomous construct. Future research might examine how this complex framework of friendship maps more directly onto multiple smoking trajectories.

Level of Problem Alcohol Use

As hypothesized, the relationship between deviant affiliation and baseline levels of problem alcohol use was weaker for those higher as compared to lower in nondeviant influences. This parallels our cross-sectional smoking results and shows that joint nondeviant influences reduce, but do not entirely circumvent, the effects of deviant influences on problem alcohol use. Such consistency across domains suggests that the enhanced susceptibility to antisocial influences during this time may potentiate the risk for myriad negative behaviors that cluster in adolescence (Feldstein & Miller, 2006). The presence of the protective effect highlights the benefits of concurrent nondeviant exposure and corresponds with social influence

models asserting that counteracting peer influences may lead to participation in both deviant and nondeviant behaviors (e.g., Brendgen et al., 2000b) or reduce involvement in substance use and deviancy (e.g., Hussong, 2002).

The longitudinal benefits of heterogeneous social influences on changes in levels of problem alcohol use slightly diverged from cross-sectional findings. That is, there was no association between deviant affiliation and 24-month alcohol problems among those lower in nondeviant influences. Li et al. (2002) found similar results when examining the effects of only deviant peer influences on alcohol use. They found that deviant influences in early adolescence predicted contemporaneous use but not changes over time for those who began the study (at age 14) reporting high levels of alcohol use (Li et al., 2002). As a whole, our sample was using alcohol early and at high rates. Specifically, 2006 data (the same year our baseline data was collected) from the Monitoring the Future Study (MTF; Johnston et al., 2009), found that 34.5% of the nationally representative sample of 10th graders reported being drunk in the previous year. Over half of the 9th and 10th graders in our sample (62.0%) reported being drunk in the previous year at baseline. As reported in Li et al. (2002), this finding might suggest that early deviant influences on alcohol problems diminish over time for this early- and highly-using group. It is also possible that the lack of association between baseline deviant affiliation, without joint nondeviant exposure, and alcohol problem escalation might be more indicative of maintenance (rather than continued escalation) of high levels of problematic use throughout high school.

In addition, deviant affiliation was associated with lower levels of problem alcohol use over 24 months among those higher in nondeviant influences. De-escalation of alcohol use throughout adolescence has been established in only a few studies examining adolescent trajectories of alcohol use (McMahon & Luthar, 2006; Stice, Myers, & Brown, 1998). Stice et al. (1998), for example, found that high school adolescents who de-escalated from heavy to moderate alcohol use (from baseline to a nine-month follow-up) reported lower baseline levels of peer alcohol use than those who consistently maintained heavy alcohol use. In the current study, nondeviant peers might provide enough reinforcement of more conventional behavior to alter the trajectory of these dually-influenced adolescents. Our findings suggest that levels of problem alcohol use might lessen with early positive peer intervention.

Depressive Symptomatology

Our results replicated the few extant studies establishing that deviant affiliation during adolescence is associated with elevated levels of concurrent depressive symptomatology (e.g., Brendgen et al., 2000a; Connell & Dishion, 2006) and increases in depressive symptoms over time (Vitaro et al., 2005). Cross-sectional findings were also consistent with research showing that nondeviant influences are associated with better emotional adjustment (e.g., Padilla-Walker & Bean, 2009). Over time, however, the benefits of nondeviant affiliation appeared to dissipate. Although the majority of adolescents do experience elevations in depressive symptoms upon entry into adolescence (Garber et al., 2002), these affective declines tend to stabilize by middle adolescence (Larson et al., 2002). More persistent mood disruptions and volatility tend only to be experienced by adolescents who face numerous aversive life events, such as problems in school and home (Arnett, 1999). It is possible that early nondeviant affiliations maintain their protective influence over time by promoting mood stability.

More notable is the fact that joint nondeviant affiliation did not protect against the effects of deviant influences on depression. In contrast to the direct models of behavioral influence, the robust deviant affiliation-depression link may occur more indirectly. Fergusson, Wanner, and colleagues (2003) confirmed that intervening factors, including substance use and other risk-taking behaviors, do help explain the link between deviant affiliation and depression.

Consistent with this theory, Costello, Swendsen, et al. (2008) found that one of the primary factors distinguishing the elevated depressive trajectories (from early adolescence through early adulthood) from those without depressive symptoms was baseline delinquent behavior. Even when controlling for adolescents' own deviant behavior, we and others (e.g., Brendgen et al., 2000a; Connell & Dishion, 2006) still found a link between deviant affiliation and depressive outcomes. This suggests that additional consequences of early high-school friendship affiliations may have detrimental effects on emotional adjustment throughout adolescence; the benefits of nondeviant influences may not be strong enough to circumvent this emotional trajectory.

Deviant affiliation is not only linked with substance use but also with problems in school and at home (Fergusson, Wanner, et al., 2003). Vitaro et al. (2005) found that individuals with deviant influences during late childhood and early adolescence experienced lower quality parent-child relationships than those reported by nondeviant trajectories. They proposed that the emotional outcomes of adolescents who first affiliate with deviant peers during early adolescence, "late affiliates", might be more affected by problematic parent-child relationships than other deviant trajectories. Additionally, others speculate that deviant friendships may adversely impact adolescents' emotional well-being due to their chaotic nature (Connell & Dishion, 2006) and may not provide quality social support (Marcus, 1996). The benefits of nondeviant peers, including promoting academic involvement, modeling more conventional behavior (i.e., avoiding substance use), and potentially providing higher quality social support, might not counteract the robust negative influence of deviant peers on multiple life domains. Future research might consider examining some such explanatory factors, like parent-child and peer relationship qualities, not explored in the current study.

Implications, Limitations, and Future Directions

This study extends extant research examining the link between friendship affiliation and behavioral and emotional outcomes during adolescence both by using a longitudinal design as well as examining a multifaceted framework of adolescent friendship influences. Nonetheless, study limitations should be noted. First, our measures were entirely self-report. Yet, adolescent perceptions of friends' behavior are important predictors of adolescents' own behavior (Kobus, 2003) and have proven to be an even stronger influence than friends' actual reports on adolescent outcomes (Iannotti & Bush, 1992). Second, we were not able to examine causal relationships between friendship affiliation and our outcome measures; thus, these influences must be interpreted cautiously. Third, our cross-sectional analyses at baseline are limited by the inability to control for prior smoking, alcohol use, or depressive symptoms. As such, social selection effects may still be relevant explanations for our cross-sectional findings. In addition, our study sample was at high risk for problem behaviors, having oversampled for ever smoking, which may be both a strength and limitation. As a strength, we were able to observe more substantial rates of substance problems than more normative samples and still had an even distribution across the full range of problem behaviors. For example, 43.2% of our sample reported smoking in the previous 30 days at baseline, as compared to the 14.5% of a representative sample of 10^{th} graders in the 2006 data from MTF (Johnston et al., 2009). As a limitation, we must be cautious about generalizing our findings to more normative populations. It is also important to note that we examined the influence of friends who provided support and companionship. Although findings are consistent with a range of peer influence studies, they may not generalize to all peer contexts. In addition, although baseline deviant and nondeviant friendship affiliation were both significantly correlated with their respective 24-month levels, these associations were only moderate in size. As such, we may be missing some changes in friendship characteristics (i.e., deviant and nondeviant behavior) throughout high school. Even with

this potential fluctuation, our longitudinal results lend support to the assertion that these early influences may have lasting effects on behavioral and emotional outcomes.

In conclusion, results strongly support the utility of further examination of the complexities of adolescent friendship groups. Our research found that joint nondeviant friendship influences in early high school can mitigate the deleterious influences of deviant friendships on adolescent smoking and drinking. Conversely, affiliating with deviant peers in early high school, regardless of any additional nondeviant influences, has lasting negative effects on depressive outcomes for adolescents. Our results suggest that increasing involvement of high-risk youth with more positive peers can have long-term benefits on behavioral outcomes; alternate strategies are likely needed for improving depressive outcomes. Unfortunately, many interventions to reduce problem behaviors among high-risk youth have been largely unsuccessful (Gifford-Smith, Dodge, Dishion, & McCord, 2005). Gifford-Smith et al. (2005) assert that including nondeviant peers into programming may improve intervention outcomes. Our research corroborates this assertion and shows that even within the presence of deviant influences, joint exposure to positive peer influences can have protective behavioral benefits. Perhaps shifting prevention efforts toward the promotion of positive influences as opposed to deterring negative behavior might enhance the effectiveness of prevention strategies.

Acknowledgments

This research was supported by a grant from the National Cancer Institute (P01CA98262). We gratefully acknowledge the contributions of P01 team members.

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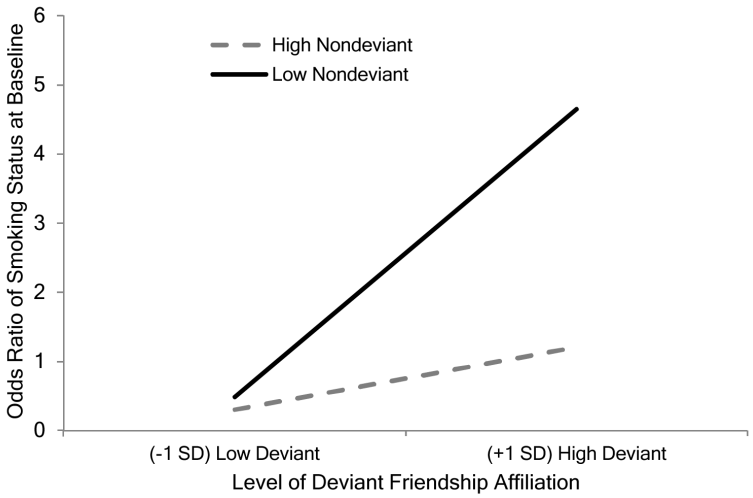

Figure 1.
Simple slopes of deviant affiliation at baseline on the odds of baseline smoking status at high and low levels of nondeviant affiliation.

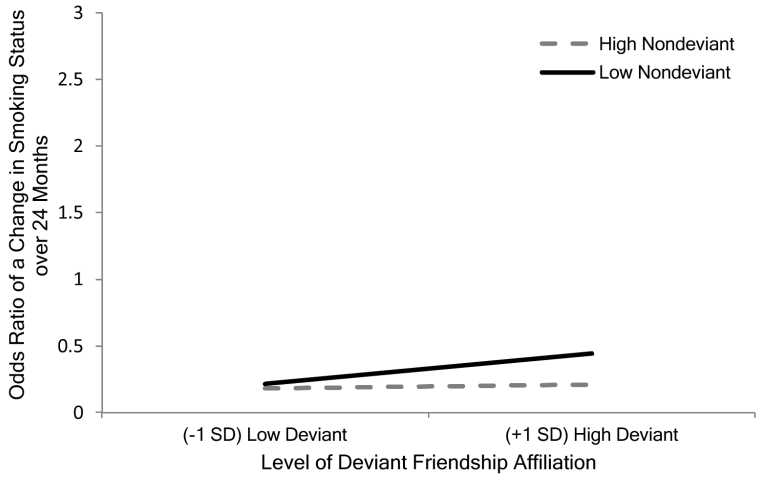

Figure 2.
Simple slopes of deviant affiliation at baseline on the odds of a change in smoking status over 24 months at high and low levels of nondeviant affiliation.

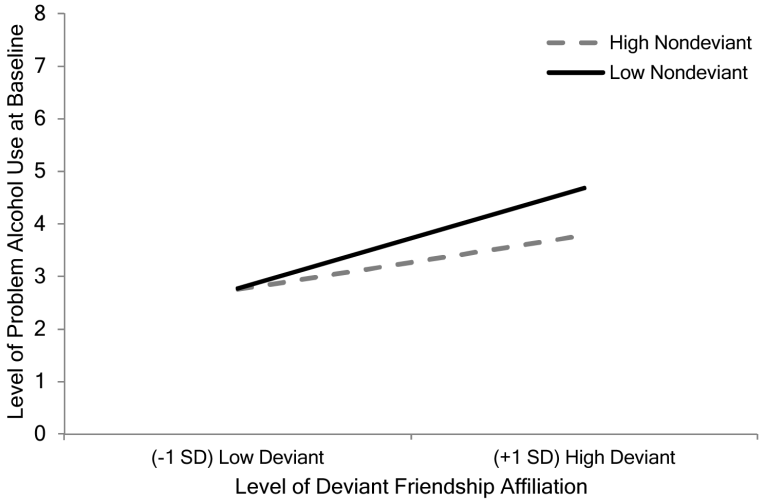

Figure 3.
Simple slopes of deviant affiliation at baseline on baseline level of problem alcohol use at high and low levels of nondeviant affiliation.

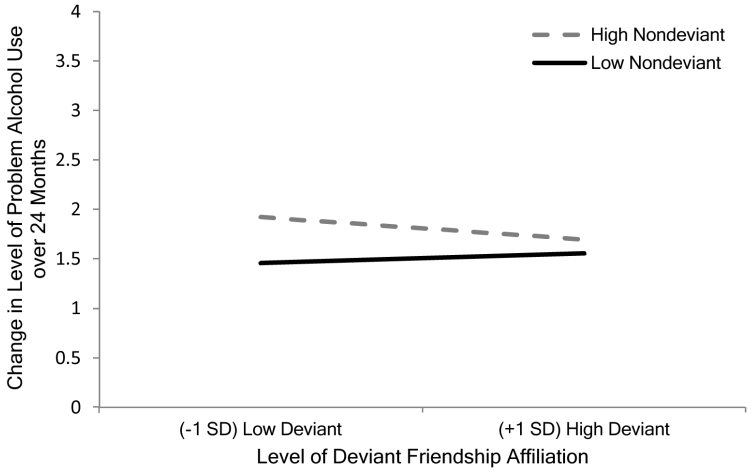

Figure 4.
Simple slopes of deviant affiliation at baseline on the change in level of problem alcohol use over 24 months at high and low levels of nondeviant affiliation.

Table 1

Results of Logistic Regression Predicting Baseline Smoking Status

	b	*SE*	p-value	Odds Ratio	95% CI	
					LL	UL
Gender	−0.15	0.13	*ns*	0.86	0.66	1.12
Deviant	0.81	0.07	< .001	2.25	1.97	2.57
Nondeviant	−0.41	0.06	< .001	0.67	0.59	0.75
Deviant × Nondeviant	−0.17	0.05	.001	0.84	0.76	0.93

Smoking coded as 0 = no and 1 = yes. Model $\chi^2 = 191.75$, $df = 4$, $p < .001$.

Table 2

Results of Logistic Regression Predicting 24-Month Smoking Status

	b	*SE*	p-value	Odds Ratio	95% CI	
					LL	UL
Gender	0.32	0.13	.017	1.38	1.06	1.79
Baseline Smoking	1.42	0.14	< .001	4.12	3.13	5.41
Deviant	0.19	0.07	.003	1.21	1.07	1.38
Nondeviant	−0.21	0.06	.001	0.82	0.72	0.92
Deviant × Nondeviant	−0.11	0.05	.026	0.89	0.81	0.99

Smoking coded as 0 = no and 1 = yes. Model $\chi^2 = 184.60$, $df = 5$, $p < .001$.

Prev Sci. Author manuscript; available in PMC 2013 June 01.