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Multiple Identification and Risks: Examination of Peer Factors Across Multiracial and Single-Race Youth

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Abstract

Multiracial youth are thought to be more vulnerable to peer-related risk factors than are single-race youth. However, there have been surprisingly few well-designed studies on this topic. This study empirically investigated the extent to which multiracial youth are at higher risk for peer influenced problem behavior. Data are from a representative and longitudinal sample of youth from Washington State ($N = 1,760$, mean age = 14.13, 50.9% girls). Of those in the sample, 225 youth self-identified as multiracial (12.8%), 1,259 as White (71.5%), 152 as Latino (8.6%), and 124 as Asian American (7.1%). Results show that multiracial youth have higher rates of violence and alcohol use than Whites and more marijuana use than Asian Americans. Higher levels of socioeconomic disadvantage and single-parent family status partly explained the higher rates of problem behaviors among multiracial youth. Peer risk factors of substance-using or antisocial friends were higher for multiracial youth than Whites, even after socioeconomic variables were accounted for, demonstrating a higher rate of peer risks among multiracial youth. The number of substance-using friends was the most consistently significant correlate and predictor of problems and was highest among multiracial youth. However, interaction tests did not provide consistent evidence of a stronger influence of peer risks among multiracial youth. Findings underscore the importance of a differentiated understanding of vulnerability in order to better target prevention and intervention efforts as well as the need for further research that can help identify and explain the unique experiences and vulnerabilities of multiracial youth.

Keywords

multiracial youth; youth behaviors; peer factors; youth risks

The number of multiracial children and youth in the United States has grown dramatically in the past three decades (Lee & Bean, 2004); and with notable increases in rates of racial-ethnic intermarriage in recent years, this number is expected to continue to grow (Herman, 2004). Although not all multiracial individuals acknowledge multiple heritages, an increasing number of youth identify as belonging to more than one racial-ethnic group. In

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this article, multiracial youth are defined as those who self-report more than one race, regardless of their actual heritage. In 2002, 2.5% of Americans identified as multiracial, and the number was twice as high for children (Lee & Bean, 2004). It is projected that, by the year 2050, as many as 20% of Americans could identify as multiracial (Lee & Bean, 2004).

Studies show that multiracial youth are at higher risk than their single-race counterparts for a range of problem behaviors during adolescence. For example, multiracial youth report more health and mental health problems, school difficulties, substance use (smoking, drinking, and other drugs), and violent behaviors than do Whites, Black, Latino, or Asian American youth, even after accounting for background differences in socioeconomic status (Campbell & Eggerling-Boeck, 2006; Choi, Harachi, Gillmore, & Catalano, 2006; Cooney & Radina, 2000; Udry, Li, & Hendrickson-Smith, 2003). The scale of the demographic change and the higher rate that are engaged in problem behaviors calls for serious attention to this growing population of Americans.

To tailor prevention and intervention to the needs of multiracial youth, it is essential to understand the etiological factors that place them at higher risk for problems than other groups of youth. Several such factors have been suggested. For example, multiracial youth may face more difficulties in establishing peer relations, which can elevate their risk for associating with peers engaged in problem behaviors and for a potentially stronger impact of negative peers on subsequent development (Gibbs, 1987, 2003; Herring, 1992; Root, 2001). Establishing meaningful social relationships with peers is one of the major developmental tasks during adolescence, and peer groups and cliques are created through active exclusion and inclusion of peers (Prinstein & Dodge, 2010). Race-ethnicity is among the most powerful determining factors of peer group formation (Brown, Herman, Hamm, & Heck, 2008; Doyle & Kao, 2007; Espenshade & Radford, 2009), often superseding other major social categories such as class or gender (Quillian & Campbell, 2003). Drawing on theories such as the classic “marginal man” (Stonequist, 1937), research has suggested that, owing to their ambiguous racial status and consequent difficulty in finding peer groups to which they feel connected, multiracial youth have less control in choosing peers (Gibbs, 2003). In trying to “fit in” to peer groups, they end up associating with antisocial and deviant peers and, having experienced peer relationship difficulties, may be more vulnerable to peer influence (Herring, 1992; Wardle, 2000). Although this scenario is plausible, many of the ideas are largely speculative and lack empirical support. In addition, more recent studies assert that today’s society in general is much more accepting of multiracial individuals than in the past (Lee & Bean, 2004), and multiracial youth seem at least as popular as single-race minority counterparts (Quillian & Redd, 2009). These findings, therefore, discount the prevailing premise of higher social marginality and susceptibility to peer risks among multiracial youth.

Growing attention to multiracial youth has focused on racial identity and identification, racial stratification, and the rates and patterns of youth outcomes, but not peer influences. In research on peers and adolescents, it is often impossible to find results specific to multiracial youth because many coding schemes do not provide an option to identify as multiracial, forcing respondents to choose one racial category (Herman, 2004). Even when they can choose, they are either not included as a distinct group in analyses (e.g., Newman, Lohman, & Newman, 2007) or lumped together with other groups (e.g., Graham, Bellmore, & Mize, 2006). Some exceptions exist (e.g., Brackett et al., 2006; Choi, et al., 2006; Doyle & Kao, 2007; Quillian & Redd, 2009), but they examine mainly race-related questions, such as the racial makeup of friendship networks or experience of racism in peer groups. Thus, there is very limited knowledge of whether multiracial youth actually report higher peer-related risks and whether peer risks have a stronger influence among multiracial youth. This is problematic because peers may be the most powerful developmental context for children

during the middle and high schools years (Brown, 2004), thus potentially the most critical etiology of adverse outcomes that should be targeted in interventions to help multiracial youth.

Peer Risks and Youth Behavior Problems

The influence of peers during adolescence is well recognized (J. R. Harris, 1995). The establishment of close and stable friendships in a dyadic or small-group relationship and the sense of belonging to a group (e.g., a clique or “crowd”) become more salient during the teen years (Brown, 2004). The emergence and growth of youth problem behaviors is frequently embedded within peer groups (Dishion, McCord, & Poulin, 1999). Steinberg (2010) reports that problem behaviors are often escalated in group settings: Youth are significantly more likely to commit negative behaviors with peers than when alone. Peers also exert power in driving youth behaviors outside of the peer context (Rubin, Bukowski, & Parker, 2006). Associations with antisocial peers have unique effects on the development of youth problem behaviors above and beyond other risk influences, and youth who enter adolescence with a high number of risk factors are particularly vulnerable to negative peer influences (Dishion et al., 1999).

Youth actively include and exclude others when forming and maintaining peer groups, and these social processes can be highly damaging to youth subject to group sanctions and exclusions (Dishion et al., 1999; J. R. Harris, 1995). Peer pressure is also often subtle. Thus, even without a clear indication of overt external peer pressure, youth may do whatever it takes to conform to a set of expectations of a group they want to join. Although peer pressure is often thought of as a unidirectional process, rarely is that the case. That is, peers typically influence one another (Rubin et al., 2006), and hence, peer influence may be a better indicator of a youth’s desire to participate in and conform to the group that he or she want to belong to than an indicator of explicit and external pressure from peers (J. R. Harris, 1995).

If the prevailing portrayal of the vulnerability to negative peers among multiracial youth is accurate, it is possible that multiracial youth try harder to fit in and are more vulnerable to peer pressure because they are more sensitive to the prospect of being rejected by their peers (Gibbs, 2003). If this is the case, then multiracial youth should report a higher rate of yielding to rather than refusing to adopt peer problem behaviors. In addition, youth engage in problem behaviors because they perceive that their peers will reward these behaviors; for example, they think that their friends will regard them as cool if they smoke, drink, and fight (Catalano & Hawkins, 1996). Assuming such vulnerability, one can expect that multiracial youth would report a higher rate of perception of peer rewards for antisocial behaviors and that such perception would have a stronger effect on how they behave. This article examines these two peer-related risks—youth yielding to peer pressure and a perception of being rewarded by peers for antisocial behaviors—and examines whether these risks are more prevalent and a stronger influence on problem behaviors among multiracial youth. If the dominant hypothesis of high vulnerability among multiracial youth is correct, multiracial youth also should select a higher number of antisocial or substance-using friends and be more influenced by them than single-race youth. This higher rate of negative peers should also explain higher rates of problems among multiracial youth. This article examines whether multiracial youth report a higher number of close friends who are antisocial or using substances and whether the developmental influence of having such friends on problem behaviors is stronger among multiracial youth.

One of the characteristics of peer relations during adolescence is that relationships are constantly changing. For example, fewer than one-half of close friendships survive for more

than one year, and it is unusual for a peer group to remain completely intact over a period of one year (Brown, 2004). Despite the instability of peer relationships, youth usually socialize with peers who share their attitudes and behavior patterns (Brown, 2004). Thus, the characteristics and quality of peers are significant indicators of youths' attitudes and behaviors at any given time. However, if youth discontinue antisocial relationships in favor of prosocial peer relationships (or vice versa), it can change the trajectories of youth behaviors. For example, among youth who were associated with antisocial peers in previous years, behavior problems decreased or did not continue when they ended such affiliations during the transition to middle school (Berndt, Hawkins, & Jiao, 1999). This suggests that peer influences may be more immediate than long term (Brown, 2004). Although it is imperative to elucidate factors and mechanisms that precede problems in order to prevent them, it is equally important to identify concurrent correlates of problems because, with the changes in peers, it is possible that earlier peer-related risks may no longer influence youth behaviors in later years. At the same time, peer effects have been shown to be enduring and longitudinal (Rubin et al., 2006). Accordingly, this study examines both concurrent and longitudinal relationships between peer-related risk factors and youth outcomes by modeling peer-related variables to predict youth outcomes at the same time period and one year later. Because youth are most influenced by their close relationships, it is important to examine the characteristics of close friends, not just those of a large and vague peer group of the same age or grade (Brown, 2004). Therefore, we examine the numbers of close friends who are antisocial or use substances and how they help explain youth outcomes.

Present Study and Hypotheses

This study attempts to provide empirical evidence for whether multiracial youth report higher rates of peer-related risk factors and whether the impact on problem behavior of those risk factors is stronger among multiracial youth than single-race youth. The study hypotheses were formulated based on a limited number of studies available and largely speculative premises in the literature. Thus, the nature of hypotheses-testing in this article is exploratory. This study first hypothesizes that multiracial youth will report higher rates of problem behaviors than single-race youth even after adjusting for age, gender, socioeconomic status, and immigrant status. The problem behaviors examined in the study are antisocial behaviors, violence, and use of four substances in the year prior to the survey (alcohol, tobacco, marijuana, and other illegal drugs). Second, it is hypothesized that multiracial youth relative to single-race youth will report a higher level of peer risk factors as measured by yielding to peer pressure, peer rewards for antisocial involvement, the number of close friends using substances, and the number of close friends who are antisocial. It is further hypothesized that these peer risk factors will be significant correlates and predictors of youth problems, and the relationships between peer risks and youth problem behaviors will be stronger for multiracial youth than single-race youth.

As noted, although research on peers and their impact on child development has greatly advanced (Rubin et al., 2006), research on peer effects among multiracial youth lacks depth, scope, and specificity. The present study, therefore, aims to expand our current understanding by investigating peer-risk variables that are not explicitly race-related but have been used in existing peer research to explain youth behaviors. These include yielding to peer pressure, perceived peer rewards for antisocial involvement, and the number of friends who are antisocial or using substances. The present study is one of the first to document group differences on these peer-risk variables across multiracial and single-race youth. This study is also one of the first to test whether multiracial youth are more susceptible to these negative peer variables.

METHODS

Overview of Project and Study Samples

The data are from the International Youth Development Study (IYDS), a longitudinal cohort study consisting of 5,769 students and their parents followed over a two- to three-year period in two states (Washington, United States, and Victoria, Australia). The age span is from 10 to 16 years. The first data collection was conducted in 2002. Current analyses use data only from the U.S. sample given that the race-ethnicity categories were constructed somewhat differently in the Australian sample. Therefore, we describe the sampling procedure only of the U.S. arm of the IYDS.

Sampling Procedure

The survey used a two-stage cluster sampling approach for school recruitment. Schools were randomly selected in the first stage, and a target classroom within each school was randomly selected in the second stage. Within grade level, public and private schools containing Grades 5, 7, or 9 were randomly selected using a probability proportionate to grade-level size-sampling procedure (Kish, 1965). To achieve a desired sample of 1,000 students in each grade, 60 schools with students at each of the three grade levels were randomly selected and one class was randomly selected at each school. For each grade level, replacement schools were also selected to be contacted should recruitment be unsuccessful (McMorris, Hemphill, Toumbourou, Catalano, & Patton, 2007).

Permission to recruit was first sought from school districts containing sampled schools and then from principals. One-third of districts declined to participate in the study, eliminating more than 120 of the eligible pool of schools. Schools (and districts) refused because of anticipated parental objections to the survey content, involvement in other research efforts, and staff unwillingness to give up instruction time. To reach the recruitment goal, replacement schools were added. In all, 155 classes in 153 schools agreed to participate. This constituted 42% (155/368) of the eligible classes selected and 73% of the 212 classes in participating schools in the district.

Representativeness of IYDS School Samples

To investigate the representativeness of the samples, the IYDS schools were compared to overall state statistics for Washington State in 2002, as well as with the schools that refused to participate (McMorris et al., 2007). IYDS schools were proportionally very similar to the gender and race-ethnicity of the student population and to students receiving free or reduced price lunch. However, private schools were slightly underrepresented because they tend to be smaller in size than public schools. Compared with schools that refused to participate, IYDS schools were more likely to be located in urban areas, had higher proportions of students who receive free/reduced lunches, and had higher numbers of Hispanic students.

Study Sample Characteristics

We excluded fifth graders because of the low prevalence of problem behaviors examined within the younger cohort. Thus, data for the current study are from Grades 7 and 9. The original data were collected in 2002 (Wave 1) from 947 seventh graders and 975 ninth graders, with a total sample of 1,922. The students were followed and re-surveyed one year later (Wave 2 in 2003), with a 99% retention rate. To arrive at the analytic sample, we excluded monoracially identified Blacks/African Americans ($n = 58$) and Native Americans ($n = 62$) because of small sample sizes. We counted those as multiracial who marked another race category in addition to the excluded categories. At the end of the survey, students were asked how honest they were in the survey. We dropped those who responded

that they were not honest in their responses ($n = 42$). After these exclusions, all students participated in both waves of data collection.

The total sample used for this project was 1,760, with a mean baseline age of 14.13 ($SD = 1.1$). About one-half were girls ($n = 896$, 50.9%). Among the students, 225 (12.8%) identified as multiracial, while 1,535 (87.2%) identified a single race-ethnicity. The single-race group was further divided into White/European American ($n = 1,259$, 71.5% of the total sample), Latino ($n = 152$, 8.6%), and Asian American ($n = 124$, 7.1%). Among the multiracial sample, 88 (39%) were Latino and White, 31 (13.8%) were Native American and White, 28 (12.4%) were Asian American and White, and the rest (78, or 34.6%) were other combinations [10 Black and White, 10 Latino and Native American, and other groups with lower than n of 6].

One-fourth (25.3%) of multiracial families, 15.6% of Whites, 54% of Latinos, and 16.1% of Asian Americans were considered poor (earning less than \$30,000 a year). Among multiracials, 32.4% lived in single-parent households, while 21.5% of Whites, 23.7% of Latinos, and 16.1% of Asian Americans lived in single-parent households. Finally, the proportions of children of immigrants (with at least one immigrant parent) were 22.7% for multiracials, 6.0% for Whites, 63.2% for Latinos, and 63.7% for Asian Americans.

Measures

Self-identification of race-ethnicity—The survey asked respondents to self-identify their race-ethnicity. They were asked first whether they were Hispanic. They were then asked to check all that applied among the following options: American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, Black or African American, and White or European American. A race variable was subsequently computed to categorize those students who self-reported as a single race into each group of Asian Americans, Blacks, Latinos, Native Americans and Whites, and to categorize those students who indicated more than one racial-ethnic category as multiracial. Single-race Latinos were those who responded affirmatively to the Hispanic question and left the racial background question blank.

Yielding to peer pressure—Two questions were used to construct this variable. Participants were presented scenarios such as “You are at a store with a friend. Your friend steals a magazine and says ‘Go ahead, take one while nobody’s around.’ What would you do?” Response options were (1) “Ignore her/him,” (2) “Grab a magazine and leave the store,” (3) “Tell her/him to put the magazine back,” (4) “Act like it’s a joke, and ask her to put the magazine back.” Another scenario examined youth reactions to peer pressure over drinking alcohol at a party. Response options were (1) “Drink it,” (2) “Tell your friend ‘No thanks, I don’t drink’ and suggest that you and your friend go and do something else,” (3) “Just say ‘No, thanks’ and walk away,” and (4) “Make up a good excuse, tell your friend you had something else to do, and leave.” If the response was to do as they were pressured to do (i.e., grab a magazine and leave the store or take a drink), we coded as “Yes.” These two scenarios have been constructed similarly in studies assessing a lack of refusal skills (Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002; Glaser, Van Horn, Arthur, Hawkins, & Catalano, 2005). Youth responses to the scenarios enable us to construct a measure of yielding to peer pressure. In addition, we examined the frequency of responses in each scenario by self-selected race-ethnicity to ensure that youth of different race-ethnic groups did not significantly vary in how they responded to these scenarios. The results did not reveal any meaningful differences in response patterns. For example, the response of “Grab a magazine and leave the store” was lowest in all groups, while “Tell her/him to put the magazine back” and “Act like it’s a joke” were most common in all groups. In response to a

pressure to drink, “Just say ‘No thanks,’ and “Make up a good excuse” were most common, followed by “Drink it” in all groups.

Peer rewards for antisocial behaviors—We used four items to measure a youth’s perception of peer rewards for antisocial behaviors by asking whether friends would perceive him or her as cool for smoking cigarettes, drinking alcohol regularly, using marijuana, or carrying a weapon. Response options ranged from (1) “No or very little chance,” (2) “Little chance,” (3) “Some chance,” (4) “Pretty good chance,” and (5) “Very good chance.” We used the average of the four items. The reliability (Cronbach alpha) ranged from .82 to .90 when examined in the full sample, seventh graders, and ninth graders respectively.

Substance-using friends—We used four items to assess how many of their close friends smoked cigarettes, tried alcohol, used marijuana, or used other illegal drugs during the year prior to the survey. Responses ranged from (0) “None of my friends,” (1) “1 of my friends,” (2) “2 of my friends,” (3) “3 of my friends,” and (4) “4 of my friends.” The responses were averaged to create the scale. The reliability alpha coefficients ranged from .83 to .84

Antisocial friends—We relied on five items that asked how many of their close friends have been suspended from school, arrested, carried a weapon, stolen something worth more than \$10, or attacked someone with the idea of seriously hurting them. Response options for the items were also (0) “None of my friends,” (1) “1 of my friends,” (2) “2 of my friends,” (3) “3 of my friends,” and (4) “4 of my friends.” The responses were also averaged to create the scale. The reliability alpha coefficients ranged from .71 to .72

Antisocial behaviors—We assessed youth antisocial behaviors with five items that asked about the frequency of suspension from school, arrest, carrying a weapon, stealing something worth more than \$10, or attacking someone with the idea of seriously hurting them. We adapted these items from several sources, including the Seattle Social Development Project, the Communities That Care Survey, and the National Youth Survey (see Arthur et al., 2002; Glaser et al., 2005; Jolliffe et al., 2003). The response options were (1) “Never,” (2) “1 or 2 times,” (3) “3 to 5 times,” (4) “6 to 9 times,” (5) “10 to 19 times,” (6) “20 to 29 times,” (7) “30 to 39 times,” and (8) “40+ times.” Nearly 70% of youth reported no incidence of committing any of the behaviors. Furthermore, because only a few youth ($n = 51$, 3.1%) reported committing the behaviors more than one or two times, we first dichotomized each item so that responses were either 0 for no incidence or 1 for any incidence of the behavior. We then summed the items. This scale ranged from 0 to 5 since there are five binary items. Because the distribution remained markedly skewed (e.g., 65.2% reporting no antisocial behaviors and 3.2% reporting committing two or more antisocial behaviors), we further dichotomized the scale into a binary variable, 0 for no antisocial behavior and 1 for any antisocial behavior. These items measured behaviors that are not common among youth. Because of their infrequency, we considered it more appropriate to recode them into binary responses, even though the response options were ordinal, to accurately reflect the actual distribution of the variables. In addition, commonly used multivariate statistical methods (e.g., multiple regressions or estimates using maximum likelihood) assume a normal distribution of the outcome variables. Therefore, it was considered inappropriate to use such methods with variables with a skewed distribution. The adopted approach conforms with other studies studying uncommon youth behaviors (Choi & Lahey, 2006; McNulty & Bellair, 2003).

Violence—We assessed youth violent behavior with one item asking whether respondents have ever beaten up someone so badly that he or she needed to see a doctor or nurse. The

response options were identical to those of the antisocial behavior items. As with the antisocial behavior variable, the violence item was also significantly skewed (94.4% responded no to this item) and, accordingly, we recoded it as either 0 for no incidence or 1 for any incidence of the behavior.

Substance use—We assessed youth substance use in the year prior to the survey for tobacco, alcohol, marijuana, and other drugs (illegal drugs and anything that they sniffed, breathed, or inhaled to get high). Response options for tobacco use were (1) “Never,” (2) “Once or twice,” (3) “Once in a while but not regularly,” (4) “Regularly, but less than every day,” (5) “Almost every day or every day.” Response options for alcohol, marijuana, and other drugs were identical to those of the antisocial behavior and violence items. Again, even when youth reported using substance, frequency of use was quite low (i.e., mostly “once or twice”). Thus, we dichotomized each item such that responses were either 0 for no use of the substance or 1 for any use of the substance.

We first examined the substance use items individually and found significant differences in the rates across substances. For example, tobacco and alcohol were more commonly used than marijuana and other illegal drugs. The substances used are also often studied separately to identify distinct etiology. However, these substances can be combined to examine substance use as a larger construct. In this study, a composite scale of substance use revealed a satisfactory reliability alpha of .71. The distribution of the composite scale of substance use was less skewed than antisocial behaviors and violence scales. However, it remained non-normal with the proportion reporting no substance use comprising almost half the sample. Thus, we created a binary substance use scale. We used both composite and binary substance use scales in the analyses.

Age and gender—We used respondents’ reported age at the time of interview as a control variable for differences in youth outcomes associated with age (Hsia & Spruijt-Metz, 2003). We also controlled for gender differences in youth outcomes (Moffitt, Caspi, Rutter, & Silva, 2001).

Socioeconomic status—In comparing racial-ethnic differences, it is imperative to account for socioeconomic status, as race-ethnicity often confounds with it. We used parental marital status and family income as controls. We coded parental marital status as 0 for single-parent households, and we coded family income as 0 if household income was less than \$30,000, with alternative categories coded 1. Parent reports were obtained through phone interviews at Wave 1 (McMorris et al., 2007).

Immigrant status—Immigrant status is another important variable in comparative analyses by race-ethnicity. Children of immigrants report significantly improved outcomes, such as better school performances and lower rates of problem behaviors than their nonimmigrant counterparts (Harker, 2001; K. M. Harris, 1999; Rumbaut, 2008). Immigrant status was computed from the place of birth of the parents and the youth. It was coded as 0 if the youth was foreign born (immigrant, first generation), coded as 1 if the youth was U.S. born but at least one parent was foreign born (second generation), and coded as 2 if both the youth and parents were U.S. born (third or later generation). This measure is identical to other studies (Harker, 2001). Consistent with the national demographics, this sample showed disproportionate numbers of first- and second-generation of immigrants among Latino and Asian Americans (Table 1). The immigrant status variable was used as a dummy variable in the analyses, with the first-generation immigrant group (coded 0) as the reference category.

Plan of Analysis

We first documented the unadjusted prevalence of youth problems by each racial-ethnic group: multiracial, White, Latino, and Asian American. Regression analyses (described below) determined the statistical significance of the racial-ethnic group differences. In addition, to examine whether multiracial youth reported higher levels of peer-related risks, we compared the means of peer risk factors in independent *t*-tests between multiracial and other groups—but not among Whites, Latino, and Asian Americans.

Stepwise regression models determined (a) the rates of behaviors by racial-ethnic groups; (b) whether control variables explained group differences, if any; (c) the relationships between peer risk behaviors and youth outcomes; and (d) whether the magnitude of peer risk factors differed by racial-ethnic group. We used logistic regressions for binary outcomes and Ordinary Least Squares (OLS) regression for continuous outcomes. Model 1 examined unadjusted group differences by regressing on outcomes with several dummy-coded race-ethnicity variables, with multiracial youth serving as the reference group. This allowed us to compare the unadjusted prevalence of youth behaviors between multiracial youth and other groups. Model 2 added six control variables (gender, age, parental marital status, family income, second-generation immigrant status, and third-generation or later immigrant status). Model 3 added four peer factors to examine the relationship between peer risks and youth problem behaviors. Finally, Model 4 added interaction terms (each peer risk factor by race-ethnicity dummy variables) to determine whether the magnitudes of peer factors differed by racial-ethnic group.

To test both concurrent and predictive relationships between peer risk factors and youth outcomes, we used youth behaviors from both Wave 1 and Wave 2. We first ran Models 1–4 with independent variables (controls and peer risk factors) at Wave 1, predicting youth behaviors at Wave 1 to examine concurrent relationships. The same process was executed with independent variables at Wave 1, predicting youth behaviors at Wave 2 to examine predictive relationships over a one-year time frame. Early problem behaviors among youth are one of the strongest predictors of later problem behaviors (Moffitt, 1993). Thus, to examine whether peer risk factors predict youth outcomes above and beyond the prediction of prior behaviors, we added youth outcomes at Wave 1 to Models 3 and 4 as one of the independent variables in predictive/longitudinal models.

To examine the relative contributions of the variables added to the model, the Area under the Receiver Operator Characteristic (ROC) curve (AUC), called *c*-statistics, were calculated for observed and logistic regression estimated values. AUC is used to test the strength of prediction in logistic regression analyses (Fawcett, 2006). AUC less than 0.6 indicates poor fit; higher than 0.7, fair fit; higher than 0.8, good fit; higher than 0.9, very good fit; and 1, excellent fit. R^2 changes using F statistics were estimated for OLS regressions. If AUC change or R^2 change was significant from Model 3 (only with main effects) to Model 4 (with interactions), we regressed one peer risk factor at a time only with three interaction terms (i.e., the product term of that peer factor by Whites, Latinos, and Asian Americans) to facilitate easier interpretation of the findings. When interaction terms were statistically significant, we graphically plotted the slopes to visualize the relationships.

The clustered sampling design and the unequal probability of sampling of the IYDS study need to be taken into account in estimations. Failure to account for clustering biases can result in underestimation of parameters, especially standard errors. Clustering arises because respondents from the same school are likely to have shared characteristics; this violates the assumption of independence among respondents. We used the software program Stata (version 10.0) to perform the statistical analyses. The effect of clustering was adjusted by specifying the primary sampling unit, in this case, school. We calculated weights to adjust

for the unequal probability of selection at the student level. Stata handles complex survey data and probability sampling weights, as well as stratification for binary, ordinal, count, and continuous variables.

RESULTS

Prevalence of Youth Problem Behaviors

Table 2 presents the unadjusted prevalence by racial-ethnic group for each youth problem behavior. The general pattern points to a higher prevalence of youth problems among multiracial youth than among Whites and Asian Americans, but a similar prevalence to that of Latinos. Statistical differences are described below.

The rates are also distinguished by socioeconomic and immigrant status for each racial-ethnic group (not shown). Youth from two-parent and higher-income households reported fewer problems than those from single-parent households and low-income families. Immigrant status overall also followed the expected pattern, in which immigrant or second-generation youth report better behaviors than their nonimmigrant counterparts. We examined whether the socioeconomic and immigrant variables explain the significant group differences in the subsequent regressions.

Peer Risks

Table 3 presents the mean levels of peer risk factors. Although mainly nonsignificant, rates of most peer-related risk factors were higher among multiracial youth. Multiracial youth reported a significantly higher rate of yielding to peer pressure than Latinos ($t = 2.10$, $p = 0.04$), more friends who use substances than Whites ($t = 2.62$, $p = 0.01$), and more antisocial friends than Whites ($t = 3.31$, $p = 0.001$).

Regression Models of Peer Risks on Problem Behaviors

Only Models 3 and 4 are presented in tables in this article. Details of the other models are available upon request. Notable patterns or significant findings from Models 1 and 2 are described in the text. The findings from Model 3 and Model 4 are combined in such a way that the top of the column in Tables 4 and 5 shows coefficients from Model 3 (only with main effects) and the bottom of the column shows interaction coefficients from Model 4. Table 4 summarizes findings on the concurrent analyses for youth outcomes in which independent variables at Wave 1 are regressed on youth behaviors at Wave 1. Table 5 presents findings for the predictive models in which Wave 1 independent variables (including prior level of problems) predict Wave 2 behaviors. The results of substance use outcomes were quite similar when examined individually or as a composite or binary scale in the pattern of significant correlates and predictors. The tables summarize results from the composite scale, and any notable findings from the individual substance variables are described in the text.

In all youth behaviors, AUC increased significantly at each step, with a general pattern of Model 1 resulting in AUC above 0.5, Model 2 above 0.6, and Models 3 and 4 showing AUC values of 0.8 and higher, all indicating a good or very good fit. AUC values are shown in the tables for Models 3 and 4 for antisocial and violence outcomes. Similarly, R^2 change was significant in the models with the composite substance use scale. R^2 was 1% in Model 1, 9% in Model 2, 49% in Model 3, and 50% in Model 4. When increments in fit are indicated by a significant difference in AUC or R^2 change between Models 3 and 4, interactions add significantly to the explanatory power of the model and all significant interaction terms are interpreted.

Antisocial behaviors—In the unadjusted regression model (Model 1), we found no statistically significant difference between multiracial and other groups of youth on antisocial behaviors, at either Wave 1 or Wave 2. As hypothesized, peer risk factors were positively and significantly associated with antisocial behaviors. Interaction terms did not contribute significantly to the concurrent fit and therefore are not interpreted. Table 5 presents the predictive model with previous antisocial behavior also in the equation. Yielding to peer pressure and having substance-using friends remained statistically significant. Interactions did not significantly improve the fit of the model.

Violence—White youth reported 55% less likelihood of violent behaviors than multiracial youth at Wave 1. Adding control variables did not explain this significant difference. When peer risk factors were added in Model 3, the difference between Whites and multiracial youth became nonsignificant. Only one concurrent peer risk (Table 4) was statistically significant: the number of antisocial friends was associated with a higher probability of violence. The interaction terms did not significantly improve the fit of the model. In predictive relationships (Table 5), yielding to peer pressure and substance-using friends were statistically significant. Here again, the addition of the interaction terms to the model did not significantly improve the model fit.

Substance use—Unadjusted comparisons show that Whites were significantly less likely to have used substances in the year prior to the survey than multiracial youth at Wave 1 ($\beta = -.250, p < .05$). We found no significant difference between multiracial and Latino and Asian American youth at Wave 1. When control variables were added, the difference between multiracial and Whites was no longer significant. At Wave 2, Asian Americans reported less substance use than multiracial youth ($\beta = -.260, p < .05$), but this difference disappeared when control variables were added. In concurrent relationships (Table 4), all of the four peer risks were significantly and positively associated with the number of substances used. The interaction terms did not significantly improve the fit. In predictive models (Table 5), yielding to peer pressure and substance-using friends were statistically significant. As in other models, the interaction terms did not significantly improve the fit of this model.

Each individual substance was examined separately as well. Racial-ethnic groups did not significantly differ on tobacco use in Wave 1 and 2. Although Whites reported 28% less likelihood of drinking alcohol than multiracial youth only at Wave 2, this difference was explained by control variables, indicating that there were no differences in alcohol use among racial-ethnic groups. Similarly, Asian Americans reported 50% lower odds of using marijuana only at Wave 2, which was also explained by control variables. No significant differences were found in other illegal drug use between multiracial and other racial-ethnic groups. In Models 3 and 4, yielding to peer pressure and substance-using friends were statistically significant in both concurrent and predictive models, consistently at p value of .001 levels for all individual substances. Antisocial rewards and antisocial friends were significant more often than not for all substances. The interactions added significantly to model fit only in two models: tobacco (concurrent model) and other drugs (predictive models). In both models, there were several significant interaction terms but the pattern was mixed, indicating both stronger and weaker effects for multiracial youth. The association of substance-using friends and tobacco use was weaker for multiracial youth than Whites, Latinos, and Asian American youth, while antisocial friends was a stronger correlate of tobacco use for multiracial youth than for Latinos and Asian Americans. These statistically significant interactions were plotted and shown in Figures 1 and 2. Also, antisocial friends was a weaker predictor of other drugs for multiracial youth than Whites and Latinos, and yielding to pressure was a stronger predictor of other drugs for multiracial than Latino youth. The last two interactions are not shown in the figures.

DISCUSSION

Many have argued that multiracial youth are more vulnerable to peer-related risks than single-race youth because racial ambiguity complicates their efforts to establish positive peer relations (Gibbs, 1987, 2003; Herring, 1992; Root, 2001). However, few well-designed studies have tested these assumptions. Moreover, alternative hypotheses have recently emerged, suggesting that multiracial youth are not necessarily vulnerable to peer risks but in fact are popular among peers because they can use their multiple backgrounds to navigate both majority and minority peer groups (Doyle & Kao, 2007; Quillian & Redd, 2009).

Using a recent, representative sample from Washington State schools, this study empirically tested the assumption that multiracial youth are at higher risk for peer-influenced problem behaviors and found somewhat limited support for the proposition. Compared with single-race youth, multiracial youth are indeed more often exposed to peer risk factors, as hypothesized, in particular substance-using or antisocial friends. In fact, the number of substance-using friends was the most consistently significant correlate and predictor of problems and was highest among multiracial youth. That said, although multiracial youth report some instances of greater problems, it is often their socioeconomic disadvantage, single-parent family status, and immigrant status that explain the differences, with the exception of violent behavior. Moreover, peer risks carry no more influence among multiracial youth than single-race youth in inspiring problem behaviors.

Rates of Problem Behaviors

The study first examined the prevalence of problem behaviors among youth and found that multiracial youth report higher levels of violence and alcohol use than Whites and higher marijuana use than Asian Americans. Multiracial youth as a group were similar to Latino youth on rates of problems. Overall, the rates of problems among multiracial youth are not as extensive or as high as those reported in other recent studies (Choi et al., 2006; Udry et al., 2003). Moreover, the significant differences with Whites on alcohol and Asian Americans on marijuana disappeared when control variables are accounted for, which is different from previous studies. Given that the age and gender distributions were similar across groups in the present sample, the significant group differences appeared to be largely accounted for by the dissimilar distribution of socioeconomic status [i.e., a higher proportion of low-income families among multiracial youth (25.3%) relative to White (15.6%) and Asian Americans (16.1%) youth, and single-parent households (32.4% among multiracial youth compared to White youth 23.7%, Asian American youth 16.1%)] and the disproportionately high number of immigrants among Asian American youth relative to multiracial youth (63.7% vs. 22.7%). Thus, except for violence, social disadvantages and immigrant status explained the higher rates of problems observed among multiracial youth in the current sample.

Several reasons can be posited to explain the departure of these findings from prior studies. First, the IYDS data were collected more recently than the samples used in previous studies. Therefore, the present findings may be an indication that the vulnerability and risks of multiracial youth have been declining as multiraciality becomes a more common phenomenon. In addition, the differences between studies may stem from a more precise measurement of family socioeconomic data in the IYDS. The details of family income and single-parent household in the IYDS were collected directly from parents, not from youth. Yet another reason may be due to sample sizes. Although the full sample size of the IYDS is fairly large, subsample sizes of each racial-ethnic group are smaller than those of previous studies, which might have underpowered the detection of significant differences. The extra step of calculating statistical power (discussed later) shows how difficult it is to detect group differences, even with a relatively large, representative sample.

Peer Risks

Multiracial youth also report high rates of exposure to peer risk factors. Specifically, they reported more substance-using and antisocial friends than Whites and a higher rate of yielding to pressure than Latino youth. To further examine whether these differences in peer risks remain when control variables are accounted for, race-ethnicity groups (multiracial youth as a reference) and controls (age, gender, family socioeconomic and immigrant status) were regressed on the peer-related risks as dependent variables. The differences between multiracial youth and Whites in the number of substance-using and antisocial friends remained statistically significant, while the difference between multiracial and Latino youth disappeared. A new significant difference also emerged: multiracial youth reported a higher rate of yielding to peer pressure than Asian American youth. Finally, the high level of peer risk factors explained the significantly higher rates of violence for multiracial youth relative to White youth. This set of results provides empirical support for a higher rate of peer risk factors among multiracial youth.

In line with previous research, peer risk factors were important correlates and predictors of youth problems, with the current findings revealing that these effects generally applied regardless of one's racial-ethnic backgrounds. With only a few exceptions, peer risk factors were significant, concurrent, positive correlates of all problem behaviors examined, demonstrating the pervasive association between peer and youth problem behaviors. Yielding to peer pressure and the number of close friends who use substances were consistently significant longitudinal predictors of all youth problems, even when the youth behavior of the prior year was accounted for. This finding reveals the enduring influence that is above and beyond the level of prior problems and other variables in determining youth behaviors.

The analysis, however, revealed that peer risks carry no more influence among multiracial youth than single-race youth in inspiring problem behaviors. Interaction terms were mostly insignificant and, when they were significant, the overall pattern of the findings was mixed, with both stronger and weaker relationships between peer risks and youth behaviors among multiracials than other groups of youth. Thus, there is no consistent empirical support for a higher susceptibility to peer influences among multiracial youth.

Caution is advised, however, in interpreting the interaction terms. Power analyses were conducted to determine whether samples were of adequate size to test interactions. White samples largely met the required sample sizes but other subsamples sometimes needed to be larger than their current sample sizes to attain 80% power. For example, to detect differences in marijuana between Asian American and multiracial youth at 80% power, samples of 192 would have been needed for each group, which means that the Asian American samples in the present study may have been underpowered. The average age of the IYDS samples are younger than that of currently available national data such as Add Health. Younger children report significantly lower prevalence of problems, which makes it harder to detect significant differences in the IYDS. However, it is also important to note that the IYDS is one of the very few representative and recent data sets that enable comparative analyses across sizable numbers of multiracial and single-race counterparts. Thus, although the current sample sizes for some groups were underpowered, the present findings underscore the importance of a differentiated understanding of vulnerability to negative peers, which can help design future research.

Youth developmental processes also should be considered in understanding the mixed results identified in the interactions. Peer influences become stronger and more stable during late adolescence and friends often surpass parents as sources of support and advice to youth in many significant ways in later years of adolescence (Rubin, et al., 2006). Thus, it is

possible that multiracial differences are less clearly evident during mid-adolescence, and the significant peer influences found in this article may become much stronger and clearer in their pattern as adolescents get older.

Multiple Identifications

One of the most critical challenges facing research on multiracial youth is the “multiracial” option as a racial-ethnic group category in data sets. Race-ethnicity is a social construct, and thus inherently imprecise and unstable. Choosing a race or ethnicity is a complicated process, particularly for multiracial individuals. Both biology and societal factors influence one’s choice (Herman, 2004). For example, it is possible that offspring of multiple racial heritages may choose one category rather than all that apply to them because of social conventions. For instance, the one-drop rule dictates that those with any Black heritage are regarded Black regardless of multiple heritages. Self-identification also can confound ethnic identity and a sense of group membership. Racial-ethnic identity is also fluid and can change over time depending on the degree of assimilation and awareness of one’s heritage at a given point (Herman, 2004). It can also be influenced by the size of a group of ethnic peers in groups or ethnic centrality in a particular setting (Kiang, Witknow, Baldelomar, & Fuligni, 2010; Umaña-Taylor, 2011).

To further complicate the matter, studies differ significantly in how they create a multiracial category from self-identifications (Herman, 2004). Most recent studies ask respondents to “check all that apply,” following the lead by the U.S. Census. However, some classify Latino as multiracial, claiming that Latino is not a race category but an ethnicity with multiple racial backgrounds, while others treat it as a separate racial-ethnic category. Still others exclude them from analyses (Brown, et al., 2008). Some studies, such as Add Health, ask those who checked more than one category which group they identify with the most. Responses from such questions are used to categorize respondents into a single-race category. In addition, how surveys order each race-ethnicity category in a selection influences the final number of multiracials (Herman, 2004). For example, whether a question asking if one is Latino is offered as one of the race-ethnic categories or as separate and preceding race-ethnicity questions produces different numbers of race-ethnic final counts. Thus, research findings on multiracials can be equivocal, in part due to the complexity of race-ethnic categorizations and in part due to inconsistent methods across studies.

One way to mitigate the challenge is to be explicit about the categorization method and composition of the multiracial group. In the present study, we used a prevalent method of categorization that is consistent with two recent studies that used nonclinical or nationally representative data (i.e., Choi et al., 2006; Udry et al., 2003). This choice was made to facilitate easier detection of any change in recent years in rates and patterns of multiracial youth behaviors.

Limitations

A few additional limitations of the study bear mentioning. We measured racial identification with coding that is commonly used in youth self-report items. There has been little research into the temporal reliability of this measure and hence it is unclear to what extent youths’ racial identification changes with time and influences peer relationships. Racial-ethnic identity is expected to be fluid as identity develops over adolescence and early adulthood, and is related to experiences of peer inclusion and rejection (Herman, 2004; Kiang et al., 2010; Umaña-Taylor, 2011). It is possible that peer risk status may influence racial identification. Thus, future studies may find it useful to study the dynamics of racial identity formation and peer relations and the interactions between these to achieve a clearer

understanding of how these two critical issues are related to one another. Although we could not examine this issue specifically, this study attempted to understand at least one of the parts, peer relations, among multiracial youth. Future research efforts should perhaps integrate racial-ethnic identity formation and peer issues to enhance our understanding.

To address the issue of fluidity of racial identification and the limit of self-reports, some studies use parental responses to determine racial heritages of children. In this study, such information was not available. However, studies that did have parental responses show minimal differences in youth and parental responses in racial identification (Quillian & Campbell, 2003; Quillian & Redd, 2009). Another limitation is that unlike others that have contrasted multiracial and single-race youth, this study did not have sufficient numbers of African Americans and Native Americans to include in the analyses.

This study focuses on externalizing problems; thus, it cannot provide empirical support on whether the heightened risks for multiracial youth exist in the form of internalizing problems, such as depression or anxiety. Multiracial children report common experiences with prejudice (Brackett, et al., 2006), and experience harassment from both White and minority students in regard to their race-ethnicity (Wardle, 2000). The experience of subtle racial discrimination has been shown to lead to internalizing problems (Noh, Kaspar, & Wickarama, 2007). Thus, it is possible that their high vulnerability may contribute to internalizing problems. It will be useful to see whether and how peers play a role in mitigating or worsening internalizing problems as well.

CONCLUSION AND IMPLICATIONS

This study provides some support for the prevailing belief that multiracial youth are at a higher risk of negative behaviors, although the negative outcomes were not as extensive as in prior studies. Although socioeconomic and immigrant status helped to explain many of the outcomes, multiracial youth still reported a higher rate of violence than Whites and higher peer-related risks than Whites and Asian Americans, after adjusting for control variables. The current study also extends the findings of prior research by finding multiracial youth to be from backgrounds with higher rates of low-income and single-parent families. Nonetheless, overall, there was limited empirical evidence that negative peer influence is more powerful among multiracial youth than single-race youth.

The results of this study offer some important implications for preventive intervention efforts. For example, the study findings highlight the importance of identifying both concurrent and longitudinal etiology to develop effective preventive interventions and the importance of targeting concurrent peer factors. The important role of peers was largely equivalent among youth regardless of their single or multiple racial backgrounds and should be universally targeted in prevention and intervention efforts. Multiracial youth also reported the highest number of close friends who use substances, which was the most consistently significant correlate and predictor of problems. This, too, warrants attention. Although the interaction patterns did not consistently show that multiracial youth were any more susceptible to peer risks, their high exposure to peer risks, even with equal susceptibility, puts them at higher risk and should be an area to target in prevention and intervention.

Race in this society remains a crucial predictor of one's social status and the nature of social interactions (Herman, 2010). So long as race is a determining factor in social status, multiracial youth may be subject to risks. Prior to the present study, there has been a paucity of empirical data and knowledge as to whether and how specific etiology, including peers, may put multiracial youth at higher risk. There is much more emphasis on multiculturalism and multicultural curriculum at school. For instance, many schools have specific events to

celebrate various minority cultures and have race-ethnic-specific student groups. However, there is rarely recognition or a specific curriculum for multiethnic or multiracial heritage, and various multicultural events at school either ignore this growing group of Americans and create a greater sense of marginality, or perhaps force multiracial youth to choose one of their heritages over the other (Wardle, 2000). Much more systematic research is needed to better understand the complexity of the issues surrounding multiracial youth and their development.

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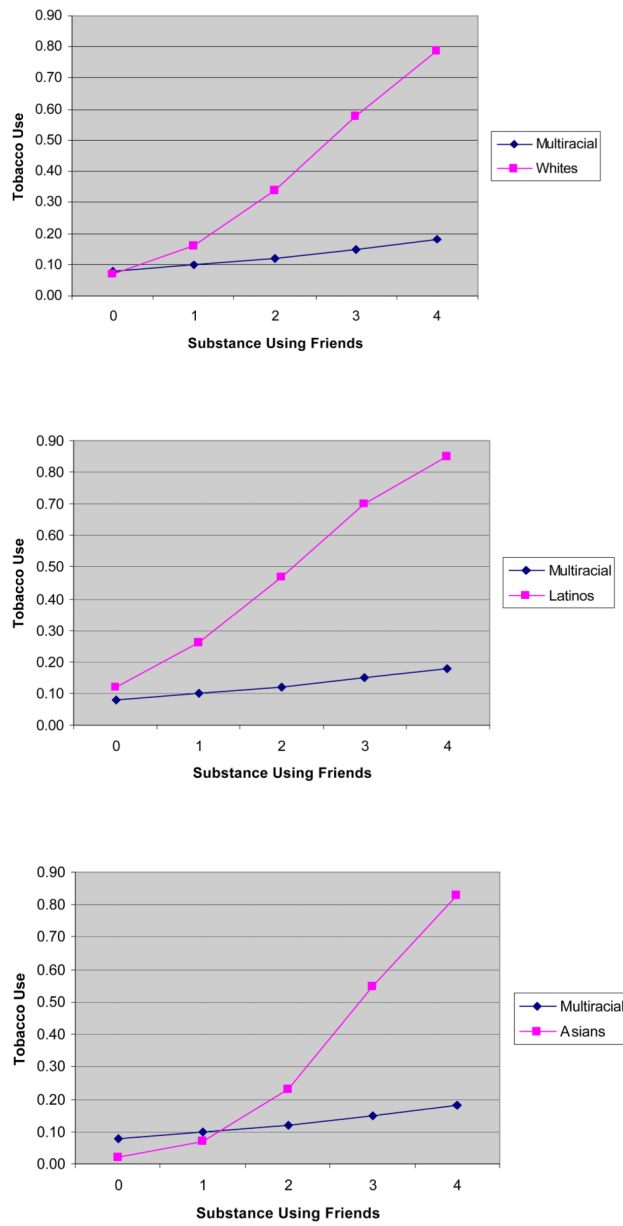


Figure 1. Interactions of tobacco use and substance-using friends.

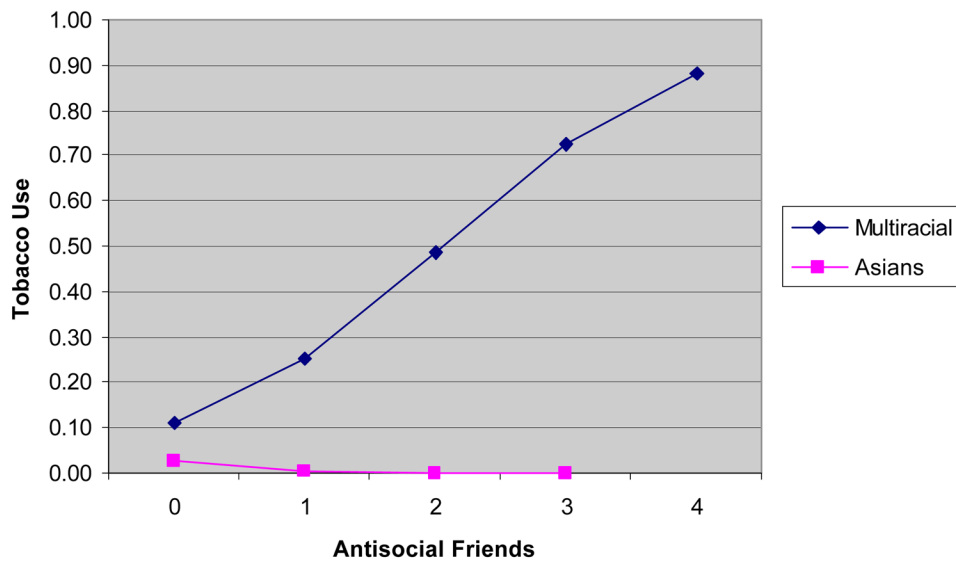
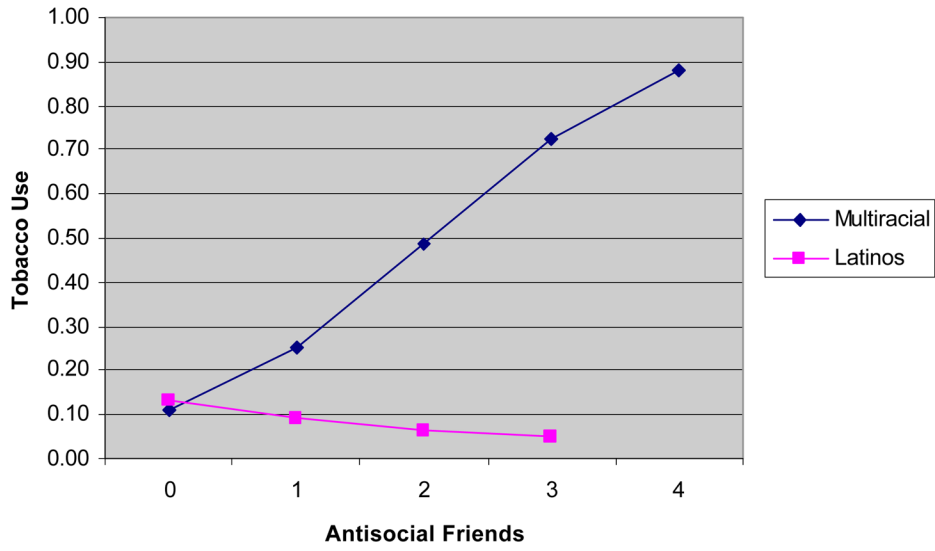


Figure 2. Interactions of tobacco use and antisocial friends.

Table 1

Percent of Immigrant status by Race/ethnic Group

Subgroups	<i>n</i>	Immigrant Generation Status		
		1 st	2 nd	3rd or later
Multiracial	225	21 (9.33%)	30 (13.33%)	174 (77.33%)
White	1259	36 (2.86%)	39 (3.10%)	1,184 (94.04%)
Latino	152	42 (27.63%)	54 (35.53%)	56 (36.84%)
Asian American	124	39 (31.45%)	40 (32.26%)	45 (36.29%)

Table 2

Unadjusted Prevalence by Race/ethnic Group (Yes %, Mean (Standard Deviation))

Subgroups	N	Antisocial		Violence		Tobacco		Alcohol		Marijuana		Other		Drugs		Substance Use	
		W1	W2	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2
N	1875	1874	1873	1869	1872	1807	1865	1859	1870	1857	1870	1847	1861	1780	1851		
Multiracial	225	36%	41%	11%	9%	34%	27%	55%	45%	22%	23%	11%	8%	1.24 (0.11)	1.04 (0.10)		
White	1259	30%	36%	5% ^{**}	6%	27%	21%	47%	41% [*]	16%	20%	10%	7%	0.99 [*] (0.05)	0.89 (0.05)		
Latino	152	35%	39%	9%	11%	34%	21%	52%	47%	16%	20%	11%	9%	1.15 (0.12)	0.98 (0.10)		
Asian American	124	27%	29%	5%	4%	31%	18%	45%	39%	13%	13% [*]	10%	8%	0.99 (0.09)	0.78 [*] (0.10)		

^{**} $p < .01$,^{*} $p < .05$

Note: The significant testing results reported in this table are from the unadjusted regression models in which multiracial youth was entered as a reference group. Thus, comparisons were made only between multiracial and other groups of youth (White, Latino and Asian Americans).

Table 3

Peer Risk Factors by Race/ethnic Group (Means (SD))

Peer Risk Factors	Multiracial	White	Latino	Asian American
Yield to pressure	0.237 (0.031)	0.219 (0.018)	0.199 (0.036) *	0.179 (0.033)
Rewards for antisocial	0.792 (0.065)	0.787 (0.045)	0.718 (0.094)	0.699 (0.062)
Substance-using friends	1.064 (0.089)	0.817 (0.061) *	0.875 (0.121)	0.840 (0.105)
Antisocial friends	0.418 (0.047)	0.265 (0.019) **	0.387 (0.040)	0.388 (0.069)

**
 $p < .01$,*
 $p < .05$

Note: Comparisons were made only between multiracial and other groups of youth (White, Latino and Asian Americans).

Table 4

Regression of Concurrent Associations with Wave 1 Problem Behaviors

Youth Behaviors	Antisocial	Violence	Substance Use
AUC or R ² (Model 3/Model 4)	0.821/0.823	0.846/0.855	0.492/0.501
<i>Race/ethnic groups</i>			
White	-0.250 (0.78)	-0.605 (0.55)	-0.096 (0.074)
Latino	0.385 (1.47)	0.006 (1.01)	0.112 (0.107)
Asian	0.126 (1.13)	-0.547 (0.58)	-0.090 (0.106)
<i>Controls</i>			
Female	-1.278 (0.28) ***	-0.452 (0.64)	0.051 (0.047)
Age	-0.186 (0.83) *	-0.180 (0.84)	0.042 (0.026)
Single parent	0.302 (1.35)	0.061 (1.06)	0.130 * (0.057)
Low income	0.101 (1.11)	-0.342 (0.71)	-0.041 (0.066)
Second generation	0.612 (1.84)	0.477 (1.61)	-0.042 (1.102)
Nonimmigrant	1.172 (3.23) **	0.815 (2.26)	0.027 (0.086)
<i>Peer risks</i>			
Yield to pressure	1.159 (3.19) ***	0.584 (1.79)	0.949 *** (0.079)
Antisocial reward	0.220 (1.25) **	0.215 (1.24)	0.070 ** (0.024)
Substance-using friends	0.223 (1.25) *	0.220 (1.25)	0.443 *** (0.043)
Antisocial friends	1.540 (4.67) ***	1.202 (3.33) ***	0.149 * (0.073)
White X Yield to pressure	n.s.	n.s.	n.s.
Latino X Yield to pressure	n.s.	n.s.	n.s.
Asian X Yield to pressure	n.s.	n.s.	n.s.
White X Antisocial reward	n.s.	n.s.	n.s.
Latino X Antisocial reward	n.s.	-0.702	n.s.
Asian X Antisocial reward	n.s.	n.s.	n.s.
White X Substance-using friends	n.s.	-0.669 *	n.s.
Latino X Substance-using friends	n.s.	n.s.	n.s.
Asian X Substance-using friends	n.s.	-1.340 *	0.355 *
White X Antisocial friends	n.s.	1.423 **	n.s.
Latino X Antisocial friends	n.s.	1.570	n.s.
Asian X Antisocial friends	n.s.	2.581 *	-0.807 **

p < .001,

**
p < .01,

*
p < .05

Note: Logistic regression was used for antisocial behaviors and violence outcomes. The numbers in parentheses after regression coefficients are odds ratios. Ordinary Least Squares regression was used for substance use outcomes and standard errors are provided in the parentheses.

Table 5

Predictive Regression of Wave 2 Problem Behaviors

Youth Behaviors	Antisocial	Violence	Substance Use
AUC (Model 3/Model 4)	0.800/.804	0.820/.835	0.462/.468
<i>Race/ethnic groups</i>			
White	-0.040 (0.96)	-0.133 (0.88)	-0.045 (0.076)
Latino	-0.129 (0.88)	0.233 (1.26)	0.080 (0.106)
Asian	-0.110 (0.90)	0.105 (1.11)	-0.061 (0.102)
<i>Control variables</i>			
Female	-0.639 (0.53) ***	-0.635 (0.53)	0.082 (0.045)
Age	-0.162 (0.85) *	-0.976 (0.91)	0.018 (0.022)
Single parent	0.128 (1.14)	0.270 (1.31)	0.013 (0.065)
Low income	-0.506 (0.60)	0.201 (1.22)	0.049 (0.101)
Second generation	0.617 (1.85)	-0.019 (0.98)	0.049 (0.084)
Nonimmigrant	0.715 (2.04) *	0.333 (1.39)	0.090 (0.084)
Prior behaviors	1.445 (4.24) ***	2.493 (12.10) ***	0.414 *** (0.030)
<i>Peer risks</i>			
Yield to pressure	0.754 (2.13) ***	0.528 (1.70) *	0.528 *** (0.092)
Antisocial reward	0.025 (1.03)	0.170 (1.18)	0.002 (0.030)
Substance-using friends	0.354 (1.42) ***	0.384 (1.47) **	0.205 *** (0.038)
Antisocial friends	0.152 (1.16)	-0.006 (0.99)	-0.079 (0.081)
<hr/>			
White X Yield to pressure	n.s.	n.s.	n.s.
Latino X Yield to pressure	n.s.	n.s.	n.s.
Asian X Yield to pressure	n.s.	n.s.	n.s.
White X Antisocial reward	n.s.	n.s.	n.s.
Latino X Antisocial reward	n.s.	n.s.	n.s.
Asian X Antisocial reward	n.s.	n.s.	n.s.
White X Substance-using friends	n.s.	n.s.	-0.230 *
Latino X Substance-using friends	n.s.	n.s.	n.s.
Asian X Substance-using friends	n.s.	n.s.	n.s.
White X Antisocial friends	n.s.	n.s.	n.s.
Latino X Antisocial friends	n.s.	n.s.	n.s.
Asian X Antisocial friends	n.s.	n.s.	n.s.

 $p < .001$,

**
 $p < .01$,

*
 $p < .05$

Note: Logistic regression was used for antisocial behaviors and violence outcomes. The numbers in parentheses after regression coefficients are odds ratios. OLS regression was used for substance use outcomes and standard errors are provided in the parentheses.