Explaining Racial/Ethnic Differences in Adolescent Drug Use: The Impact of Background and Lifestyle*

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Past research has shown large racial/ethnic differences in adolescent drug use, with use highest among Native American youth, somewhat lower among white and Hispanic youth, and lowest among black and Asian youth. The present study uses large nationally representative samples of high school seniors to explore whether the often large racial/ethnic differences in cigarette, alcohol, marijuana, and cocaine use may be attributable to racial/ethnic differences in background and/or in important lifestyle factors. The results indicate that controlling for background alone does not account for most racial/ethnic differences in drug use. In fact, if black youth were as likely as white youth to live in two-parent households and have highly educated parents, their drug use might be even lower than reported. Controlling for background alone does reduce Native American's relatively high drug use, suggesting that their level of use may be linked to their disadvantaged socioeconomic status. When both background and lifestyle factors are controlled, many of the racial/ethnic differences in drug use are considerably reduced or eliminated. Several lifestyle factors—including educational values and behaviors, religious commitment, and time spent in peer-oriented activities—strongly relate to drug use and help to explain the subgroup differences. The authors conclude by discussing theoretical and policy implications of this research, along with directions for future efforts.

During adolescence many young people initiate behaviors which can negatively affect their development and their future mental, physical, and material well-being. Behaviors which have been shown to be most detrimental to long-term well-being include dropping out of school, early sexual involvement, and the use and abuse of drugs (Hayes 1987; Hofferth and Hayes 1987; Jessor and Jessor 1977; Newcomb and Bentler 1988; see also Dryfoos, 1990, for a review). As noted by Newcomb and Bentler (1989), "substance use and abuse during adolescence are strongly associated with other problem behaviors such as delinquency, precocious sexual behavior, deviant attitudes, or school dropout" (243). Young people who use and abuse drugs, who drop out of school, and/or who engage in early sexual activity have been found to have greater than average marital instability and interpersonal problems later in life, to have diminished lifetime earnings and limited future job prospects, to have poor mental and physical health as adults, to be at increased risk to contract sexually transmitted diseases and experience reproductive difficulties, and to become dependent on welfare (Dryfoos 1990; Hayes 1987; Hofferth and Hayes 1987; Jessor and Jessor 1977; Newcomb and Bentler 1988). Clearly, these various "problem behaviors" all have long term impact on the lives of young people; additionally, they appear to be linked together into what has been called a "problem behavior syndrome" (Dryfoos 1990; Jessor and Jessor 1977).

The extent to which young people exhibit various problem behaviors differs along a

number of sociological dimensions including gender, region of residence, socioeconomic status, and racial/ethnic group membership (Bachman et al. 1991; Dryfoos 1990; Furstenberg et al. 1987; Rumberger 1983). In spite of fairly consistent findings of racial/ethnic differences in problem behaviors, and in drug use specifically, relatively little research has been done to explain why these differences exist.

The present study uses recent (1985-1989) large, nationally representative samples to examine one of the most prevalent problem behaviors among young people—the use and abuse of drugs. We investigate drug use among white, black, Mexican American, Puerto Rican and other Latino American, Asian American, and Native American youth. Our purpose is to explore whether the often large racial/ethnic differences in drug use may be attributable to racial/ethnic differences in background and in other important lifestyle factors. The present study replicates and extends earlier research on adolescent drug use based on the senior class of 1979 (see Bachman, Johnston, and O'Malley 1981). Subsequent to the earlier study (which provided race data for only black and white youth), there have been significant changes in adolescent drug use and a growing concern with racial/ethnic differences in drug use (Bachman et al. 1990; Johnston, O'Malley, and Bachman 1989). The nation's minority population has increased appreciably and is expected to continue to do so in the future (Dryfoos 1990). Because the minority population is disproportionately young and drug use is disproportionately concentrated among the young, research on drug use within these segments of the population has increasingly important implications for the nation as a whole.

Adolescent Problem Behavior

A variety of sociological and social-psychological theories have been developed to account for "deviant" or problem behavior among young people; these include social control theory (Hirschi 1969), differential association theory (Akers 1977), problem behavior theory (Jessor and Jessor 1977), self-derogation theory (Kaplan, Martin, and Robbins 1982), and socialization theory (Kandel 1980). Though often implicit rather than explicit, several similarities exist among theoretical models which undergird much of the research on problem behaviors.

The basic theoretical structure of much present research can be subsumed under the "problem behavior" model posited by the Jessors (1977). The Jessors' model is a comprehensive framework comprised of antecedent background variables and three systems of social-psychological and behavioral variables—the personality system, the perceived environment system, and the behavior system. The variables in the three primary systems interrelate to produce within the individual a greater or lesser proneness to become involved in problem behaviors. More specifically, the theory hypothesizes that young people who are less invested in traditional versus deviant behaviors, who are more strongly tied to peers than to parents, who are alienated from society, who have low self-esteem, and who hold unconventional beliefs, values, and attitudes are prone to become involved in problem behavior. The Jessors and their colleagues used their longitudinal dataset to test the theoretical model and found it to be quite successful in explaining adolescent problem behavior—particularly drug use (see Jessor 1987; Jessor and Jessor 1977).

The various background and lifestyle factors identified by the Jessors consistently have been found to influence adolescent problem behavior—including the use and abuse of drugs (see Bachman et al. 1981; Kandel 1980; Radosevich et al. 1980). Accordingly, research on individual and racial/ethnic differences in problem behavior typically considers background characteristics antecedent to problem behavior, such as age (Hayes 1987; Newcomb et al. 1987; Segal 1986), gender (Bachman et al. 1990; Bachman et al. 1991; Furstenburg et al. 1987;

Kandel 1980; Rumberger 1983), parental education and employment status, and family income (Bachman et al. 1981; Kandel 1980; Rumberger 1983; Furstenburg et al. 1987), and region (Bachman et al. 1981; Dryfoos 1990; Johnston, O'Malley, and Bachman 1989; National Institute on Drug Abuse 1990). The key background variable of concern in studies of subgroup differences is, of course, racial/ethnic group membership.

The lifestyle factors that researchers investigate in relation to drug use and other problem behaviors include variables that are both "distally" and "proximally" related to the behavior in question (cf. Jessor and Jessor 1977). According to Jessor and Jessor, distal variables are "relatively more remote in the logic of the causal chain, variables that do not directly or necessarily implicate problem behavior but can be linked to its occurence by reliance on theory and the mediation of other variables" (27). Conversely, proximal variables are those which are "rather directly or obviously related to the occurence of problem behavior" (28). The variables conceptually most proximal to a particular problem behavior include attitudes, beliefs, and interpersonal relationships specific to that behavior. In the case of drug use, drug use by close friends and parents, easy access to drugs, positive attitudes toward drug use, and the perception that there is little risk associated with the use of drugs are all very proximal and thus strongly related to adolescent drug use (Bachman, Johnston, O'Malley 1990; Bachman et al. 1988; Kandel 1980; Maddahian, Newcomb, and Bentler 1986). More distally related lifestyle variables that past research has investigated include religious affiliation and commitment, school performance, truancy, attitudes toward school, college plans, dating, participation in extracurricular activities, employment, and political orientation (Bachman, et al. 1981; Barro and Kolstad 1987; Dryfoos 1990; Furstenberg et al. 1987; Jessor and Jessor 1977; Kandel 1980; Radosevich et al. 1980).

Racial/Ethnic Differences in Problem Behavior

In recent years there has been an increasing amount of research on the impact of background and lifestyle variables on racial/ethnic differences in a number of problem behaviors, including dropping out of school, sexual activity, and drug use. Barro and Kolstad (1987) found that black and Hispanic youth are more likely than white youth to drop out of school. However, when background (parental occupation and education, family income, family structure, number of siblings, and mother working) and lifestyle variables (religious affiliation and religiosity) are controlled, black youths' dropout rate is actually lower than that of white youth, and the difference in drop out rates of white youth and Hispanic youth is significantly reduced (National Center for Educational Statistics 1989). Similarly, adjusting for subgroup differences on background variables (gender, mother's education, racial composition of school) and a proximal lifestyle measure (proportion of peers sexually active) significantly attenuates racial/ethnic differences in sexual activity (Furstenberg et al. 1987).

Like other problem behaviors, the use of drugs in America is often perceived as a behavior found disproportionately among racial and ethnic minority group members. Contrary to popular belief, however, recent surveys of drinking and drug use patterns indicate that drug use is often more prevalent among white Americans than among people of color, and that such differences are especially large among adolescents (Austin 1988; Austin and Gilbert 1989; Austin, Prendergast, and Lee 1989; Bachman et al. 1990; Bachman et al. 1991; National Institute on Drug Abuse 1990; Prendergast et al. 1989).

Surveys of Drug Use

In a large representative sample of New York state 7-12th grade students, Kandel and her colleagues found that black and Hispanic students were less likely than white students to

report any lifetime use of hard liquor, beer or wine, or marijuana (Kandel, Single, and Kessler 1976). Although black and Hispanic students also reported less lifetime use of most illicit drugs (e.g. LSD, barbiturates, amphetamines, and tranquilizers) than white students, they reported slightly higher lifetime use of cocaine and heroin. Similar percentages of black and white youth smoked cigarettes, but cigarette use was somewhat lower among Hispanic youth. The Kandel, Single, and Kessler (1976) sample also included small numbers of Asian American and Native American students. The Asian American youth reported the lowest use of hard liquor, wine or beer, cigarettes, and most illicit drugs, while the Native American youth reported the highest use of most drugs.

More recent studies tend to confirm most of the earlier findings reported by Kandel, Single, and Kessler. A 1983 study of a representative sample of 27,335 New York state 7-12th graders compared patterns of alcohol and drug use among white, black, West Indian, Hispanic, Asian, and Native American students (Welte and Barnes 1987). The black and West Indian students reported the lowest mean ounces of absolute alcohol consumed per day, the lowest percentage of heavy drinkers, and the fewest times drunk per month. Generally, the Hispanic students reported higher levels of alcohol and drug use than black students, but lower levels than white students. The Asian American students showed fairly low rates of alcohol use; however, those who did drink tended to drink heavily, particularly males. Asian American males also reported relatively high mean levels of illicit drug use. Native American youth in the sample reported the highest rates of heavy drinking and illicit drug use.

Using data from the Monitoring the Future study, Table 1 presents means and proportions on selected drug use measures for a number of racial and ethnic subgroups by sex (see Bachman et al. 1990). The information in the table is consistent with past research which shows that drug use is not disproportionately high among youth in most racial/ethnic minority groups. Relative to white seniors, the proportions who use any alcohol or cigarettes are significantly lower among black, Puerto Rican, Asian American, and Mexican American seniors (particularly females). Mean amounts of cigarette and alcohol use among these groups are also generally lower than those of white seniors. On average, current cigarette use among Native American youth exceeds that among white youth, but 30 day alcohol use is comparable within the two groups. Heavy alcohol use (5 or more drinks in a single sitting) is quite similar among white and Native American youth, and Mexican American males, but distinctly lower among the other groups. Annual marijuana use does not significantly differ among white, Mexican, and Native American males. Among females, however, Mexican Americans' use is significantly lower than average while Native Americans' is significantly higher. Although annual cocaine use is distinctly lower than average among black and Asian American youth, prevalences and means for white, Mexican, Puerto Rican, and Native American youth are comparable. It should be noted that the patterns of subgroup differences shown in Table 1 were based on seniors in the classes of 1985-1989; however, similar differences also were evident for most drugs from 1976 through 1984 (Bachman et al. 1990; Bachman et al. 1991).

The studies cited above are based on samples of students. Although student samples may accurately represent the drug use of young people in school (see Johnston and O'Malley 1985), they do not include the drug use of young people who have dropped out. Because drug use is higher among adolescents who drop out of school (Dryfoos 1990) and because national dropout rates have been higher for black (22 percent), Hispanic (28 percent) and Native American youth (36 percent) than for white youth (15 percent) (National Center for Educational Statistics 1989:26), student samples may be a misleading basis for conclusions about the total population of youth. Household surveys include dropouts and absentees; such surveys thus provide one potential way to determine if, in the general population, minority youth use alcohol and other drugs less than their white counterparts.

Data from the National Household Survey on Drug Abuse indicate that black youth (ages

Table 1 • *Racial/Ethnic Differences in Selected Types of Drug Use Among High School Seniors (1985-1989): Percentages and Scale Means for Males (M) and Females (F)*

Drug Category[1]			White	Black	Mexican	Puerto Rican	Asian	Native American
30 Day Cigarette	M	%	29.8	15.6*	23.8*	22.0*	16.8*	36.8*
		X	1.70	1.29*	1.44*	1.45*	1.33*	1.94*
	F	%	34.0	13.3*	18.7*	24.7*	14.3*	43.6*
		X	1.78	1.24*	1.31*	1.44*	1.32*	2.18*
30 Day Alcohol	M	%	72.3	49.2*	65.0*	55.4*	43.7*	69.0
		X	2.82	2.10*	2.67*	2.23*	1.87*	2.90
	F	%	66.6	32.8*	50.5*	43.0*	34.2*	60.2
		X	2.42	1.52*	2.01*	1.73*	1.60*	2.35
Heavy Alcohol	M	%	48.1	24.0*	45.3	31.4*	19.4*	48.1
		X	2.15	1.58*	2.13	1.72*	1.38*	2.28
	F	%	31.3	9.3*	23.6*	14.5*	10.7*	33.7
		X	1.64	1.18*	1.50*	1.27*	1.21*	1.74
Annual Marijuana	M	%	40.2	29.8*	37.3	30.6*	19.6*	42.0
		X	2.32	1.90*	2.16	1.97*	1.57*	2.45
	F	%	36.0	18.4*	26.0*	21.3*	17.1*	44.0*
		X	2.01	1.44*	1.68*	1.50*	1.40*	2.30*
Annual Cocaine	M	%	11.9	6.1*	14.7	15.6	5.8*	14.2
		X	1.29	1.13*	1.37	1.44*	1.15*	1.39
	F	%	9.3	2.6*	7.6	8.2	5.7*	15.5*
		X	1.22	1.06*	1.17	1.17	1.12	1.35

Notes:

Asterisks (*) indicate that values are significantly ($p \leq .05$) different than those for White youth.

% = Percent of seniors reporting any use.

X = Mean scale value on drug use measure.

1. Exact wording of measures are presented in Appendix A.

12-17) are less likely than white or Hispanic youth ever to have used or to be current users of cigarettes, alcohol, marijuana, cocaine, and most other illicit drugs (National Institute on Drug Abuse 1990). With the exception of cocaine, the Hispanic youth are also less likely than white youth ever to have used or to be current users of these drugs. Unfortunately, because of their small numbers in the general population, no national household data have been published on Asian American and Native American youth.

As noted by Adlaf, Smart, and Tan (1989), "A basic limitation of the literature on racial/ethnic differences in drug use is that it emphasizes differential rates of use between subgroups rather than looking for intervening or causally prior variables which may account for the observed differences" (2). A number of researchers suggest that racial and ethnic differences in adolescent drug use are heavily confounded by racial/ethnic differences in background variables and lifestyle factors (Gordon and McAlister 1982; Harper 1988). This might be taken to imply that the observed racial/ethnic differences in drug use can be "explained" if these various background and lifestyle "confounders" are statistically controlled.

Controlling for racial/ethnic group differences in background and lifestyle helps to explain the higher prevalence of sexual activity and dropping out among minority youth. However, since drug use is, generally, less prevalent among most categories of minority youth than among white youth, adjusting for factors such as family background might actually heighten rather than reduce some racial/ethnic group differences in adolescent drug use.

The Present Focus on Background and Lifestyle

Existing research has not fully resolved whether racial/ethnic differences in drug use result from differences in background and lifestyle factors. For example, Barnes and Welte (1986) found that black, West Indian, Hispanic, Asian American, and Native American youth were less likely than white youth to use alcohol, after controlling a number of background variables (sex and age), distal lifestyle variables (school misconduct and grades), and some very important proximal lifestyle variables (parental attitudes about children drinking, age of first drunkenness, and the proportion of friends that got drunk weekly). On the other hand, a longitudinal study of Los Angeles County youth found that when background (income) and key proximal lifestyle variables (availability from friends, ease of acquisition, and initial drug use) were controlled, drug use among black, Asian, and Hispanic youth was not significantly different from that of white youth (Maddahian, Newcomb, and Bentler 1986).

The Jessors note that despite the stronger empirical relationship between proximal variables and problem behaviors, the linkage between the distal variables and the problem behavior may be of greater theoretical interest (Jessor and Jessor 1977:28). Past research which attempted to explain racial/ethnic differences in drug use (and in other problem behaviors) typically controlled for background and both distal and very proximal lifestyle factors simultaneously. In all likelihood, the relationship between the most proximal variables and drug use are so strong (e.g., Bachman et al. 1988, Table 4, reported a correlation of −.68 between disapproval of marijuana use and self-reported use of the drug) that they "wash out" the impact of the theoretically more interesting (and distal) variables on racial/ethnic differences.

Although controlling for proximal measures such as disapproval and peer use probably can "explain" the racial/ethnic differences in drug use, they provide little insight into the theoretically interesting mechanisms which may underlie the subgroup differences. For example, controlling for the proportion of friends who drink may cause the difference between the alcohol use of Native American and white youth to disappear. Nevertheless, it is still not clear why Native American youth *as a group* are more likely to drink than are white youth. If, however, controlling for less proximal variables such as socioeconomic status, religiosity, and educational factors causes the racial/ethnic differences in drug use to disappear, considerably more theoretical insight is gained. Several examples may help to make this point more clear.

A significant proportion of Native American families and youth are socioeconomically disadvantaged (Secretary's Task Force 1985). Drug use among Native American youth is also disproportionately high (Austin 1988). If differences between the drug use of Native American youth and that of other youth are eliminated when socioeconomic status is controlled, it strongly suggests that the subgroup differences in socioeconomic status underlie the subgroup differences in drug use.

As a second example, it has been noted that the historically fundamentalist orientation of the black church may have a profound impact on community norms regarding the use of drugs, particularly alcohol (Herd, 1985). Relative to the majority of American youth, black youth have been found to be more committed to religion (Bachman, Johnston, and O'Malley, 1987). Because religious commitment negatively relates to drug use, controlling for the strong religious orientation and fundamentalist affiliations of many black youth may help to account for their relatively low drug use.

A final example pertains to educational commitment. Past research indicates that young people who are strongly committed to educational endeavors are considerably less likely than their uncommitted counterparts to use drugs (e.g., Bachman et al. 1981; Barnes and Welte 1986; Kandel 1980; Schulenburg et al. 1990). As a group, Asian Americans' academic performance exceeds that of other groups and their drug use is, on average, less than that among other groups (Bachman et al. 1991; Sue and Okazaki 1990). When the academic success and

strong commitment to educational pursuits among Asian American youth are taken into account, differences in their drug use and that of other groups may be sizably reduced if not completely eliminated.

We acknowledge the strong relationships between the conceptually most proximal variables (e.g., peer drug use) and drug use. We also acknowledge the potential of these variables to "explain" racial/ethnic differences in drug use, but consistent with the Jessors' (1977:28) we take the position that the relationship between the more distally related variables and drug use are of greater theoretical interest. Accordingly, our primary concern is to investigate the extent to which a number of variables, less proximal than drug-specific perceptions and attitudes, are able to account for racial/ethnic differences in adolescent drug use.

Methods

Sample

The data used in this study are drawn from the Monitoring the Future project, which involves large, nationally representative samples of high school seniors surveyed annually by the University of Michigan's Survey Research Center. Detailed information on the samples, instruments, and validity of the measures are available elsewhere (Bachman and Johnston 1978; Bachman, Johnston, and O'Malley 1987; Johnston and O'Malley 1985).

The study uses a multi-stage sampling procedure, which results in samples representative of high school seniors in the 48 coterminous states. First, particular geographic areas are selected. Next, schools are selected—approximately 135 schools participate each year. Finally, up to 400 seniors are selected in each school. In schools with fewer than 400 seniors, the entire senior class is typically included in the data collection. In schools with more than 400 students, the students are obtained by randomly selecting classrooms or some other unbiased method. The students complete machine readable, self-administered questionnaires during a normal class period.

Response rates average about 83 percent. Absence on the day of data collection is the primary reason that students are missed; additionally, about one percent refuse to complete the questionnaire. Obtained samples number about 16,000-17,000 each year. The total number of cases used in this analysis is approximately 77,500. The racial/ethnic distribution of the sample is as follows: 77.5 percent white (n=60,062), 11.9 percent black (n=9,223), 4.4 percent Mexican American (n=3,410), 2.0 percent Puerto Rican and other Latin American (n=1,550), 2.6 percent Asian American (n=2015), 1.6 percent Native American (n=1,240). Youth who did not indicate any racial/ethnic affiliation (approximately two percent of the sample) are omitted from the analyses; also omitted are those with missing data on the drug use measures (see Bachman et al. 1990). In light of past research which suggests race by gender interactions in drug use (e.g., Austin and Gilbert 1989; Prendergast et al. 1989; see also Table 1), the data are analyzed separately for males and females.

Some of the racial/ethnic groups in the sample are rather small proportions of the nation's total population and are clustered in particular regions and schools. Since small sample sizes and clustered groupings may result in sizeable sampling errors for data from any single year, we combine data from 1985-1989. Additionally, design effects have been estimated and significance tests have been adjusted to account for error introduced by the multistage sampling procedure (see Bachman et al. 1990 and Bachman, Johnston, and O'Malley 1987, for a discussion of design effects for these samples).[1]

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1. An overall design effect of 4.4 was estimated, thus reducing the total sample from approximately 77,500 to 17,600. The significance tests are based on the reduced N.

Measures

The analysis presented here focuses upon racial/ethnic differences in the use of tobacco, alcohol, marijuana, and cocaine. Brief descriptions of the measures are presented below. Complete wording of the dependent and independent measures is presented in Appendix A. The tobacco use measure indicates how frequently the respondent has smoked cigarettes during the last thirty days. The alcohol measure indicates how often the respondent has had 5 or more drinks, in a row in the last two weeks. The marijuana and cocaine measures each indicate on how many occasions the respondent has used the drug in the last year. The annual versus thirty day measures of marijuana and cocaine were chosen to provide adequate variance.

The key independent variable in this study is the students' racial/ethnic group identification. The race/ethnicity groups are white, black, Mexican American, Puerto Rican and other Latino American, Asian American, and Native American. In addition to racial/ethnic group membership, the independent measures include background and lifestyle variables that past research (Bachman et al. 1981; Jessor and Jessor 1977; Kandel 1980) has identified as important correlates of adolescent drug use. The background variables include a mean of father's and mother's education (as a measure of socioeconomic status), number of parents in the home, region, and urbanicity. The lifestyle variables include (1) educational experiences and behaviors—high school curriculum (college preparatory or not), college plans (will attend a four year college versus will not), high school grades, and truancy (number of days skipped school in the last thirty days); (2) occupational experiences and behaviors—hours worked per week during the school year, and average weekly income; and (3) other lifestyle orientations—religious commitment (average of church attendance and importance of religion), political views (very conservative to radical), frequency of evenings out for fun and recreation, and frequency of dating.

Analyses and Results

The purpose of the present study is to determine if racial/ethnic differences in high school seniors' drug use result largely from variation in family background and lifestyle behaviors and experiences. In order to investigate this question, we estimate a series of dummy variable multiple regression equations, first controlling only for background, then controlling for both background and lifestyle.

If racial/ethnic subgroup differences in drug use are indeed attributable to differences in background and lifestyle, there should be no significant differences in the groups' mean levels of drug use after these variables are statistically controlled (i.e., the regression coefficients for the race dummy variable should approach zero, thus indicating that the racial/ethnic difference is "explained"). The regression models tested here estimate the levels of drug use which would occur among the various subgroups if they were all "average"—if they were distributed the same way as the total sample in terms of family background and lifestyle traits. Because white youth comprise the vast majority (77.5 percent) of the sample, this is tantamount to asking how the mean levels of drug use among the other subgroups would be affected if their background and lifestyle characteristics were much the same as those of white seniors.

Tables 2-5 present the results of the regression analyses for level of 30 day cigarette use, heavy alcohol use (five or more drinks in a single sitting), annual marijuana use, and annual cocaine use, respectively. In order to assess the independent impact of background factors on racial/ethnic differences in drug use and to examine the idea presented above that controlling for background alone may actually *increase* some racial/ethnic differences in drug use, the analysis proceeds in two stages. The first stage (the left half of each table, columns 1-4) presents the unstandardized (b) and standardized (β) regression coefficients (for males and

females separately), when only background is controlled. The second stage of the analysis (the right half of each table, columns 5-8) presents the unstandardized and standardized regression coefficients, for males and females, when both background and lifestyle variables are controlled.

Figure 1 (Parts A-D) presents a more readily interpretable version of these findings, showing percentages of drug users in each racial/ethnic subgroup under three conditions: first unadjusted, then adjusted for background, and finally adjusted for both background and lifestyle.

Racial/Ethnic Differences in Drug Use: the Impact of Background

Past research indicates that drug use is generally lower than average among black and Asian youth, at intermediate levels among white and Hispanic youth, and higher than average among Native American youth. In this section we explore the question: Are these often large differences in drug use the result of variations in background characteristics, such as parents' education, family structure, urbanicity, and region of residence?

For most racial/ethnic subgroups and most drugs, the answer is no. For example, Table 2 indicates that controlling for background factors alone does little to attenuate subgroup differences in 30 day cigarette use. Net of the background factors, black, Mexican, Puerto Rican, and Asian youth still smoke significantly less than white youth. In fact, if black youth were as likely as white youth to live in two-parent households, to have highly educated parents, and so forth, their average cigarette use might be even lower than reported. The same is true for Puerto Rican females. This information can be garnered from Figure 1 (Part A) and by comparing the unstandardized bivariate correlation coefficients (r) (see Appendix B) with the multivariate beta coefficients (β) between racial/ethnic subgroup membership and cigarette use. For example Figure 1 shows an unadjusted difference of 9 percent between white and Puerto Rican females' 30 day cigarette use. Controlling for background increases this difference to 13 percent. In correlational terms, the 30 day cigarette use correlation for Puerto Rican females is −.028. Controlling for background increases the strength of this relationship to = −.062.

Table 3 presents dummy variable regression results for racial/ethnic differences in heavy alcohol use. Table 1 showed that rates of 30 day and heavy alcohol use among Native American and white seniors are quite similar, followed by Mexican, Puerto Rican, black, and Asian seniors. Controlling for background factors reduces the relatively small differences in alcohol use between Mexican American and white seniors (see Table 3; also Part B of Figure 1). Overall, controlling for background fails to reduce the differences in heavy alcohol use between white seniors and seniors in the other racial/ethnic groups.[2]

Table 4 presents regression results for annual marijuana use. The findings are much the same as those for cigarette and alcohol use—i.e., adjusting for background factors does not reduce most of the racial/ethnic differences. If anything, a number of the differences become larger when background is controlled (comparing bivariate r's to multivariate β's; see also Part C of Figure 1). Net of racial/ethnic group membership, living with both parents and living in a non-urban area both relate to low marijuana use.

The final drug use category examined is annual use of cocaine. Table 1 and Part D of Figure 1 indicate that annual cocaine use among Mexican and Puerto Rican males is slightly higher than average. Among females, use among Native Americans is especially pronounced. Controlling for differences in background reduces the relatively high levels of cocaine use among Mexican and Puerto Rican males. On the other hand, if Mexican and Puerto Rican *females* were more similar to the sample mean on the background variables, their levels of

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2. An analysis of subgroup differences in and variables related to the rate of 30 day use of alcohol produced results that parallel those reported for heavy alcohol use (see correlations in Appendix B).

Part A: 30-Day Cigarette Use
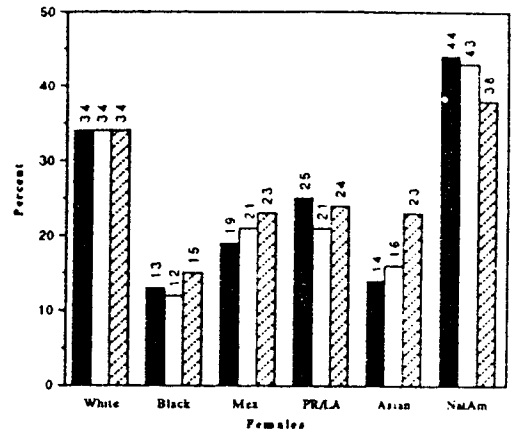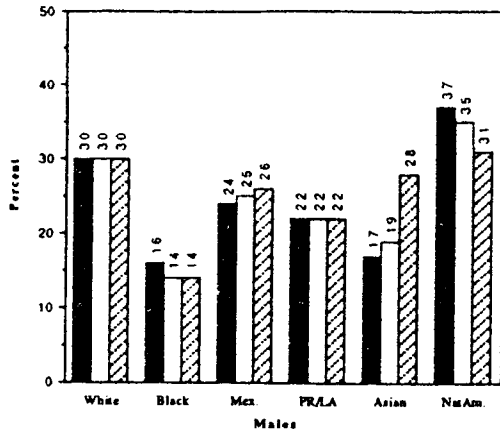
Part B: Heavy Alcohol Use
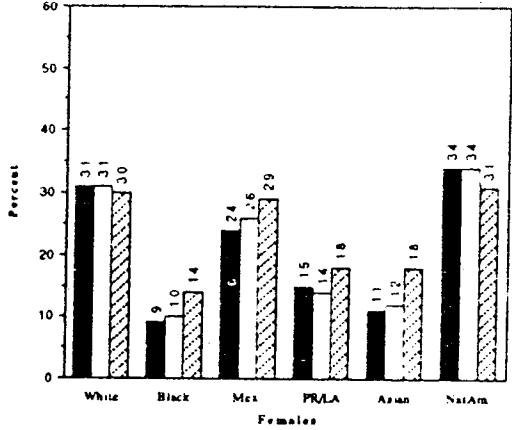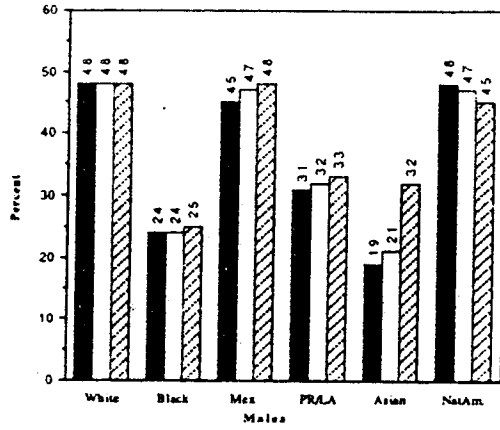
Part C: Annual Marijuana Use
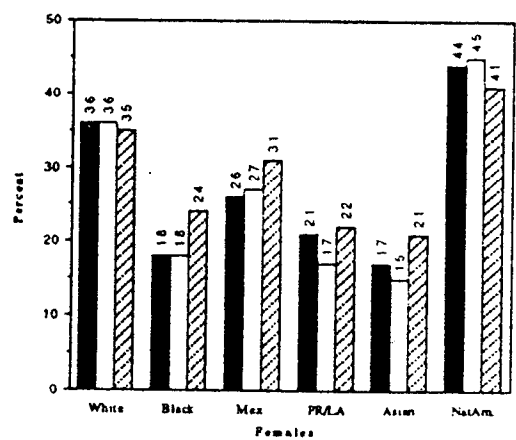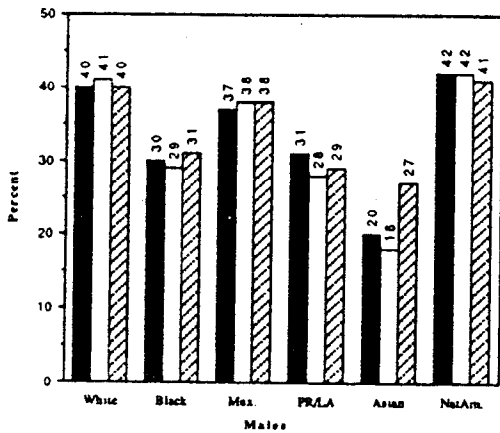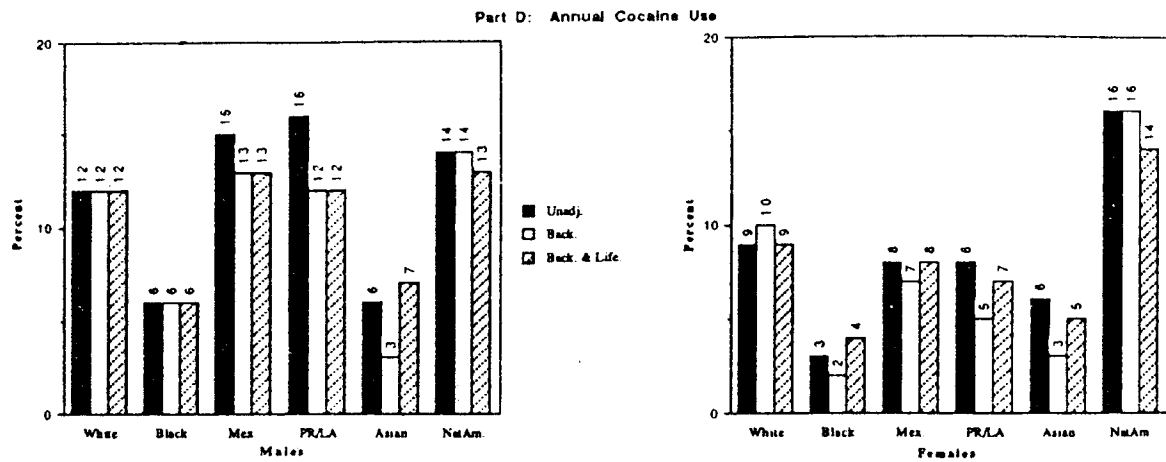
Figure 1 • *Racial/Ethnic Differences in Drug Use (%). Unadjusted, Adjusted by Controlling for Background, and Adjusted by Controlling for Background and Lifestyle. (1985-1989)*

cocaine use, along with those of Asian and black females, would perhaps be even lower than those among white and Native American females.

Thus far we have determined that the often sizeable racial/ethnic differences in high school seniors' drug use are not largely the result of racial/ethnic differences in socioeconomic status (parental education), family structure, urbanicity, or region of residence. In fact, the data suggest that if black and Hispanic youth were as likely as white youth to have highly educated parents, to live with both parents, and to live outside of large urban areas, then their levels of use for a number of drugs would be even lower than reported. Moreover, the data suggest that the higher than average level of drug use reported by Native American youth may be linked to their relatively disadvantaged socioeconomic status. Once background differences are adjusted, the white versus Native American differences in drug use are virtually eliminated among male seniors and reduced or eliminated among female seniors.

Racial/Ethnic Differences in Drug Use: the Impact of Background and Lifestyle

In light of the information presented above, the next question to be addressed is: After controlling for background differences, to what extent are reported racial/ethnic differences in licit and illicit drug use the result of different lifestyle beliefs, behaviors, and orientations such as educational and religious commitment, employment characteristics, political views, and time spent interacting with friends? The right-hand portions of Tables 2-5 (and Figure 1) present the data that address this question.

Table 2 indicates that after controlling for lifestyle factors some groups are more changed than others. On the one hand, black, Mexican, and Puerto Rican seniors still smoke at lower levels than their white counterparts. On the other hand, after these controls, Native American females smoke at only slightly higher levels than white females, and the mean differences in 30 day cigarette use between white and Asian American seniors are completely "explained" for males and substantially reduced for females (see Figure 1, Part A).

An examination of the correlation matrices in Appendix B shows that racial/ethnic differences in region, in the educationally related variables, and in the amount of peer interaction seem to be particularly important in accounting for the difference in level of 30 day cigarette use between white and Asian seniors. Cigarette use is relatively low in the West, where the Asian American seniors disproportionately reside. Asian American seniors also are more likely than average to be enrolled in college preparatory classes, to plan to graduate

Table 2 • *30 Day Cigarette Use Controlling for Background and Background and Lifestyle Factors, by Sex (1985-1989): Unstandardized (b) and Standardized (β) Regression Coefficients*

Variables	b M	b F	β M	β F	b M	b F	β M	β F
RACE								
Black	−.518	−.648	−.132***	−.176***	−.469	−.513	−.119***	−.139***
Mexican	−.308	−.486	−.051***	−.081***	−.242	−.363	−.040***	−.060***
Puerto Rican	−.346	−.546	−.039***	−.062***	−.282	−.383	−.032**	−.043***
Asian	−.304	−.431	−.041***	−.055***	−.028	−.196	−.004	−.025**
Native Am.	.132	.330	.013	.033**	.011	.208	.001	.021**
White	—	—	—	—	—	—	—	—
BACKGROUND								
Parents' Educ	−.008	−.008	−.072***	−.081***	.002	.001	.017	.006
# of Parents	−.197	−.203	−.092***	−.096***	−.109	−.106	−.051***	−.050***
Urbanicity	−.019	.049	−.015	−.039***	−.024	.009	−.020*	.007
Region								
South	−.086	−.123	−.032**	−.047***	−.042	−.034	−.016	−.013
Northeast	−.008	.155	−.003	.051***	−.036	.121	−.012	.040***
West	−.202	−.234	−.064***	−.073***	−.264	−.319	−.083***	−.100***
North Central	—	—	—	—	—	—	—	—
LIFESTYLE								
Educational								
Clg. Prep					−.118	−.175	−.047***	−.071***
College Plans					−.138	−.108	−.126***	−.102***
Grades					−.059	−.073	−.093***	−.112***
Truancy					.016	.018	.131***	.132***
Employment								
Hrs work/wk					.022	.022	.043**	.041**
Weekly Income					.013	.017	.024*	.030**
Other								
Religiosity					−.009	−.014	−.067***	−.106***
Political Views					.068	.066	.064***	.051***
Eves out					.097	.125	.103***	.132***
Dating					.030	.022	.037***	.031**
Constant	2.48	2.40			1.90	2.02		
Adj. Multiple R	.178	.241			.388	.442		
Adj. R-squared	.032	.058			.151	.196		

Notes:

*** p ≤ .001

** p ≤ .05

* p ≤ .10

from a four year college, and to have good grades. Because these variables all negatively relate to cigarette use and because Asian American youth score higher than average on them, controlling for their influence reduces the Asian-white difference. Asian American seniors also report fewer than average evenings out for fun and recreation and dating. Since these behaviors positively relate to cigarette use, controlling these variables further reduces the Asian-white difference in current cigarette use.

Although some of the multivariate coefficients are weak, all of the lifestyle factors significantly relate to seniors' current cigarette use. Young people who are in college preparatory classes, who plan to graduate from college, who have good grades, and who are not truant smoke less than youth who are not as educationally involved and committed. Like truancy,

Table 3 • 5 + Drinks in a Row in the Last Two Weeks, Controlling for Background and Background and Lifestyle Factors, by Sex (1985-1989): Unstandardized (b) and Standardized (β) Regression Coefficients

	b		β		b		β	
Variables	M	F	M	F	M	F	M	F
RACE								
Black	−.604	−.453	−.133***	−.141***	−.512	−.320	−.113***	−.099***
Mexican	−.027	−.101	−.004	−.019*	.049	−.001	.007	−.000
Puerto Rican	−.441	−.395	−.043***	−.051***	−.345	−.259	−.034***	−.033***
Asian	−.720	−.408	−.083***	−.059***	−.389	−.223	−.045***	−.032***
Native Am.	.053	.091	.005	.010	−.014	.051	−.001	.006
White	—	—	—	—	—	—	—	—
BACKGROUND								
Parents' Educ	−.003	−.001	−.025**	−.013	.003	.002	.022**	.019*
# of Parents	−.162	−.065	−.066***	−.035***	−.073	−.012	−.029**	−.007
Urbanicity	−.041	.007	−.029**	.006	−.076	−.039	−.053***	−.036***
Region								
South	−.166	−.193	−.054***	−.085***	−.110	−.122	−.036**	−.054***
Northeast	−.083	−.086	−.024*	.033**	−.130	−.120	−.037**	.046***
West	−.162	−.200	−.044***	−.072***	−.255	−.284	−.070***	−.120***
North Central	—	—	—	—	—	—	—	—
LIFESTYLE								
Educational								
Clg. Prep					−.067	−.039	−.023**	−.018
College Plans					−.041	−.012	−.033**	−.013
Grades					−.054	−.045	−.073***	−.080***
Truancy					.031	.024	.218***	.194***
Employment								
Hrs work/wk					.005	.005	.009	.010
Weekly Income					.024	.019	.038**	.040**
Other								
Religiosity					−.011	−.009	−.068***	−.078***
Political Views					.057	.041	.047***	.036***
Eves out					.225	.168	.206***	.204***
Dating					.049	.005	.054***	.007
Constant	2.81	1.88			1.43	1.23		
Adj. Multiple R	.172	.174			.444	.406		
Adj. R-squared	.030	.030			.197	.165		

Notes:
*** p ≤ .001
** p ≤ .05
* p ≤ .10

increased hours working and increased income also relate to increased cigarette use. Among the other lifestyle factors, being committed to religion deters cigarette use, but having radical political views and spending a significant amount of time outside of the home for recreation and dating result in increased levels of cigarette use. The full model explains 15 percent of the variance in 30 day cigarette use among males and almost 20 percent for females.

Alcohol use prevalence rates among white, Mexican, and Native American seniors are fairly similar (see Table 1). In the presence of the fairly extensive set of background and lifestyle controls, their differences in heavy alcohol use are even smaller and all non-significant (see Table 3 and Figure 1, Part B). Controlling background and lifestyle factors reduces

Table 4 • *Annual Marijuana Use Controlling for Background and Background and Lifestyle Factors, by Sex (1985-1989): Unstandardized (b) and Standardized (β) Regression Coefficients*

Variables	b M	b F	β M	β F	b M	b F	β M	β F
RACE								
Black	−.488	−.617	−.077***	−.125***	−.371	−.354	−.059***	−.072***
Mexican	−.221	−.325	−.023**	−.040***	−.125	−.142	−.013	−.018*
Puerto Rican	−.527	−.701	−.037***	−.059***	−.423	−.454	−.030**	−.038***
Asian	−.897	−.708	−.075***	−.067***	−.496	−.435	−.041***	−.041***
Native Am.	.119	.279	.007	.021**	.009	.194	.001	.014
White	—	—	—	—	—	—	—	—
BACKGROUND								
Parents' Educ	−.001	−.000	−.004	−.002	.007	.006	.044***	.041***
# of Parents	−.275	−.248	−.080***	−.087***	−.133	−.130	−.039***	−.046***
Urbanicity	.100	.099	.050***	.059***	.050	.021	.025**	.013
Region								
South	−.155	−.160	−.036**	−.046***	−.046	−.025	−.011	−.007
Northeast	−.128	.204	.027**	.050***	.041	.120	.009	.030**
West	.131	.043	.026**	.010	−.016	−.125	−.003	−.029**
North Central	—	—	—	—	—	—	—	—
LIFESTYLE								
Educational								
Clg. Prep					−.025	−.068	−.006	−.021*
College Plans					−.058	−.041	−.033**	−.029**
Grades					−.105	−.075	−.103***	−.086***
Truancy					.042	.042	.212***	.227***
Employment								
Hrs work/wk					.001	.017	.001	.023*
Weekly Income					.021	.020	.024*	.027***
Other								
Religiosity					−.024	−.026	−.113***	−.143***
Political Views					.164	.117	.097***	.068***
Eves out					.245	.220	.162***	.174***
Dating					.036	.026	.028**	.027**
Constant	2.44	2.07			1.11	1.22		
Adj. Multiple R	.142	.189			.427	.458		
Adj. R-squared	.020	.036			.182	.210		

Notes:

*** $p \leq .001$
** $p \leq .05$
* $p \leq .10$

the magnitude of the differences between white seniors' rates of heavy alcohol use and the rates for black, Puerto Rican, and Asian American seniors; still, significant differences remain.

The beta coefficients (β) indicate that truancy, evenings out, and to a lesser extent low religious commitment, are particularly important correlates of alcohol use. Along with these variables, having educated parents, not living in the West, not living in an urban area, earning poor grades, having a large income, and radical political views all relate to higher levels of current and heavy alcohol use, for both males and females. The model accounts for roughly 20 percent of the variance in males' heavy alcohol use and 17 percent of the variance in females' heavy alcohol use.

The pattern of mean racial/ethnic differences in annual marijuana use is fairly similar to

Table 5 • *Annual Cocaine Use Controlling for Background and Background and Lifestyle Factors, by Sex (1985-1989): Unstandardized (b) and Standardized (β) Regression Coefficients*

Variables	b M	b F	β M	β F	b M	b F	β M	β F
RACE								
Black	−.188	−.181	−.062***	−.076***	−.144	−.110	−.048***	−.046***
Mexican	−.014	−.103	−.003	−.026**	.010	−.056	.002	−.014
Puerto Rican	.027	−.144	.004	−.025**	.060	−.080	.009	−.014
Asian	−.248	−.174	−.043***	−.034**	−.116	−.095	.020**	−.019*
Native Am.	.088	.123	.012	.019*	.051	.089	.007	.014
White	—	—	—	—	—	—	—	—
BACKGROUND								
Parents' Educ	−.002	−.001	−.023**	−.014	.001	.001	.009	.019*
# of Parents	−.108	−.092	−.066***	−.067***	−.060	−.054	−.037***	−.039***
Urbanicity	.059	.050	.062***	.061***	.041	.028	.043***	.035**
Region								
South	.019	.007	.009	.004	.042	.039	.021	.023*
Northeast	.169	.164	.073***	.084***	.137	.140	.060***	.072***
West	.236	.201	.097***	.097***	.174	.143	.072***	.069***
North Central	—	—	—	—	—	—	—	—
LIFESTYLE								
Educational								
Clg. Prep					−.037	−.052	−.020	−.033**
College Plans					−.021	−.023	−.025**	−.034**
Grades					−.019	−.013	−.039***	−.032**
Truancy					.017	.015	.181***	.162***
Employment								
Hrs work/wk					−.009	.000	−.022	.001
Weekly Income					.024	.012	.058***	.034**
Other								
Religiosity					−.006	−.006	−.060***	−.068***
Political Views					.049	.041	.060***	.050***
Eves out					.070	.046	.097***	.076***
Dating					.020	.019	.033**	.040***
Constant	1.24	1.15			.605	.778		
Adj. Multiple R	.150	.161			.326	.306		
Adj. R-squared	.023	.026			.106	.094		

Notes:
*** $p \leq .001$
** $p \leq .05$
* $p \leq .10$

that for differences in cigarette and alcohol use (see Table 1 and Figure 1). Native Americans, followed by white males and females, have the highest levels of marijuana use. Use among Mexican youth is slightly lower, followed by even lower levels of use for Puerto Rican, black and Asian seniors. The right-hand columns in Table 4 present regression results for racial/ethnic differences in annual marijuana use, after introducing the lifestyle controls. After these adjustments, the differences among the white, Native American, and Mexican American youth remain small among the males, whereas among the females the differences are reduced. The differences between white youth and the other groups are also considerably reduced, but remain significant (see also Part C of Figure 1).

Truancy, frequency of evenings out, low religious commitment, poor grades, and level of political radicalism are the variables which relate most strongly to level of annual marijuana

use. Having highly educated parents and not living with both parents also relate to increased marijuana use when the other lifestyle factors are controlled. Although the addition of the lifestyle controls does not fully explain all of the racial/ethnic differences in marijuana use, it considerably increases the predictive power of the model, explaining 18 percent of the variance in males' annual marijuana use and 21 percent in females' use.

The final regression model reveals the impact of the lifestyle factors on the relatively small racial/ethnic differences in annual cocaine use which remain after background is controlled. Among Asian males and black, Mexican, Puerto Rican, and Asian females, adjusting for background alone reduces their cocaine use, thus enlarging their differences from white youth. Conversely, incorporating the lifestyle measures increases the levels of annual cocaine use among these groups, thus reducing the differences between them and white seniors (see Table 5 and Part D of Figure 1). The addition of the lifestyle controls has little impact on the cocaine use of black, Mexican, Puerto Rican, and Native American males. Although truancy is overwhelmingly the most powerful correlate of cocaine use, evenings out, religious commitment, and living in the Northeast or West (relative to North Central) are also important correlates. Though relatively weak, the relationships between family structure, urbanicity, college plans, grades, weekly income, political orientation, dating and cocaine use also remain significant. The full model explains 11 percent and 9 percent of the variance in annual cocaine use for males and females, respectively.

The information in Tables 2-5 and Figure 1 suggests that if the subgroups did not differ along the background and lifestyle dimensions examined here, then levels of drug use by Native American, white, and Mexican seniors would be virtually the same. Nevertheless, sizeable differences would remain between these three relatively high use groups and the three relatively low use groups—Puerto Rican, black, and Asian seniors. This distinction exists across drugs except for cocaine, where use among Puerto Rican males is unexpectedly high.

Discussion

The model tested here is broad, and it presumes that background and lifestyle variables impact the drug use of young people from different racial/ethnic subgroups in much the same way; accordingly, it presumes that subgroup differences in drug use result primarily from subgroup differences in the measured independent variables. To whatever extent this basic presumption is wrong and the variables in the model impact the drug use of young people from different racial/ethnic groups differently, then to that same extent, the additive model we test here would be unable to account fully for the subgroup differences in drug use.

The results of this study indicate that a number of the sizeable racial and ethnic group differences in drug use among high school seniors are largely or at least partially the result of racial/ethnic differences in background and lifestyle factors. Admittedly, the most powerful lifestyle predictors (current frequencies of truancy and of evenings out for fun and recreation), are at least arguably proximal enough to be both causes and consequences of drug use. (They are not, however, nearly as closely related to drug use as the most proximal lifestyle variables such as peer drug use and perceived risk.)

In any case, it should be noted that even after controlling for background and lifestyle differences, some small but significant racial/ethnic differences in levels of drug use remain, particularly between the two largest groups—black and white seniors. Caveats, potential directions toward further explaining racial/ethnic differences in drug use, along with theoretical and policy implications of this research, are presented below.

Caveats and Concerns

"Race" as a biological concept has little validity, and objectively measuring race/ethnicity (even as a purely sociological concept) is a difficult and largely subjective task (cf. Smith 1984). Nevertheless, a number of adolescent problem behaviors, including drug use, differ according to the racial/ethnic group with which young people identify themselves.

The research presented here examined drug use differences among six large aggregates of youth. In reality there are numerous refinements and subgroups that could be defined within each racial/ethnic grouping. For example, it has been estimated that "within the broad designation 'Asian/Pacific Islander' are a least 32 different national and ethnic groups" (Austin et al. 1989:1). Similarly, the groups we label "black" and "white" include persons of West Indian, Caribbean, South American, English, Irish, German, and numerous other descents. Indeed, research that has used more refined race/ethnicity measures than used here has found important within racial/ethnic group differences in alcohol and drug use (e.g., Adlaf et al. 1989; Barnes and Welte 1987). In fact, data presented here, in which youth with Mexican origins are distinguished from those with Puerto Rican and other Latino origins, testify to the potential amount of diversity in drug use behaviors within a particular racial/ethnic group. Unfortunately, geographic clustering and relatively small numbers in the general population make detailed study of numerous groups using our national (versus regional or local) data difficult, if not impossible.

Another obvious caveat is that this study of high school seniors does not include drop-outs. We know that drug use among dropouts exceeds that of youth who do not drop out of school (Dryfoos 1990). We also know that dropout rates among black, Hispanic, and Native American youth are higher than average (National Center for Educational Statistics 1989). Although national dropout rates among black and white youth have become more similar in recent years (National Center for Educational Statistics 1989), dropout rates in high poverty, high crime areas of the nation's decaying inner-cities may greatly exceed national norms. Because the residents of these areas are often black and Hispanic, the relatively favorable information presented here on drug use among black and Hispanic seniors, relative to white seniors, should not lead to the faulty conclusion that the use and abuse of drugs by black and Hispanic youth is not a problem. The existing research indicates that people of color disproportionately suffer the negative physical and social consequences of drug use. It is estimated that 80 percent of the excess deaths[3] among black and other minority groups each year are at least partially attributable to the use of tobacco, alcohol, and illicit drugs, and that minority group members are disproportionately both victims and perpetrators of drug-related violence (Secretary's Task Force 1986).

In addition to the aforementioned caveats, the reliability and validity of the findings are areas of potential concern. Using the National Longitudinal Survey of Youth, Mensch and Kandel (1988) report that black and Hispanic youth are more likely than white youth to underreport their use of marijuana. It should be noted, however, that this underreporting occurred only at the lowest levels of use, and that no such underreporting was reported for the licit drugs, alcohol and cigarettes, which show the largest subgroup differences in use. Additionally, the National Longitudinal Survey uses face to face interviews versus the self-administered, confidential questionnaires used by Monitoring the Future.

Analyses presented elsewhere (Bachman et al. 1991) indicate that the findings of lower drug use among most minority youth relative to white youth replicate over time (from 1976-1989), and thus are reliable. With regard to the validity of these differences, past research has shown that young people who are more heavily involved with drugs perceive less risk in the use of drugs, have more positive attitudes toward drug use, have greater access to drugs, began

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3. Excess deaths are defined as deaths that would not have occurred if people of color had the same age and sex-specific death rate as the white population (Secretary's Task Force 1986).

to use drugs at an early age, and have more friends who use drugs than youth who abstain or use drugs only moderately (Bachman et al. 1989; Bentler and Huba 1987; Harford 1986; Welte and Barnes 1987). Additional analyses of the Monitoring the Future data indicate that relative to white seniors, black seniors perceive greater risk in using drugs, are more likely to disapprove of most forms of drug use, report having greater difficultly obtaining most drugs, began drug use at a later age, and have fewer friends that use drugs (Wallace forthcoming). Based on these and other findings discussed in detail elsewhere (see Bachman et al. 1991), we believe that the self-reports of lower drug use among most minority youth compared to white youth are, on the whole. valid.

Theoretical and Policy Implications

Despite our oversimplification of racial/ethnic group membership and the omission of dropouts, this study provides important empirical data and potentially valuable theoretical and policy relevant information on subgroup differences in adolescent drug use. The present research documents sizeable racial/ethnic differences in high school seniors' drug use and identifies a number of factors which may help to explain these differences. Understanding the underlying mechanisms by which these differences occur and identifying racial/ethnic differences in these mechanisms should be a priority for future theoretical and empirical research. This is particularly true in instances in which the differences in drug use are particularly pronounced (for example, white-Asian and white-black).

For Asian youth, it appears that their strong commitment to educational advancement and academic success is particularly important in explaining their lower than average use of drugs. Nevertheless, the causal mechanisms that underlie the relationship between their educational success and their low use of drugs are still not clear. Given the strong relationship between truancy and drug use, one might expect that Asian youth do not skip school and thus are not prone to become involved in problem behavior such as drug use. However. examination of the bivariate relationship between truancy and racial/ethnic group (see Appendix B) reveals that the Asian youth are not less likely than average to skip school. and thus differences in truancy rates probably do not contribute to the white-Asian differences in drug use.

Another possible explanation for white-Asian differences in drug use might lie in the fact that Asian youth spend less time in peer-oriented activities than other youth. The reason for this, as well as their concomitant educational success (as measured by grades), may be that they spend a significant portion of their time engaged in educationally-oriented activities (such as doing homework). Hypotheses of this nature are both empirically testable and theoretically interesting.

Like Asian youth, black youth use drugs at considerably lower levels than average. Unlike Asian youth however, most black youth do not experience greater than average academic success. Black youth are, however, more strongly committed than other youth to religion (Bachman et al. 1987). In light of this fact, one potentially fruitful area of research for explaining black-white differences in drug use would be a careful study of the impact of religion. Past research has shown that religious commitment is a significant deterrent to the use of drugs among adolescents (Bachman et al., 1981; Burkett 1980; Lorch and Hughes 1985). Also, not only are black youth more strongly committed to religion than white youth, they are also more likely than white youth to belong to fundamentalist religious denominations (Bachman et al. 1987). According to Herd (1985), "The Protestant church, especially in its fundamentalist branches is a major force for abstinence in the black population" (163).

The findings presented here reaffirm the importance of two-parent families, educational success, religious commitment, and supervised activities as deterrents to adolescent drug use. At a policy level, comprehensive, cooperative efforts between the school, church, community,

and individual families are needed to reduce and prevent drug use and other adolescent problem behaviors. In light of the rather strong negative relationship between academic achievement orientation and drug use as reported by Schulenberg et al. (1990) and others, it appears that tutoring, truancy reduction, and dropout prevention programs are particularly important. Also needed are after-school programs, life-skills training, and programs and policies which can strengthen young people's involvement and commitment to other activities and organizations (e.g., church) shown to deter or reduce involvement in drug use.

The results presented here also indicate that social policies which address the socioeconomic disadvantage that many minority group youth suffer could have important effects on their drug use. For example, the relatively high rates of drug use among Native American youth seem completely explainable in terms of these youths' relatively disadvantaged background. Equally important is the information that if the background status of black and Hispanic youth were more comparable to that of white youth, their levels of drug use might be even lower than reported.

Although we can only speculate, the high rates of drug related problems which are concentrated among minority group members may result from a relatively small core of heavy drug abusers who not only harm themselves but also prey upon their communities to support their lifestyle. Additionally, the poverty, inadequate educational systems, and joblessness that characterize the inner cities in which many minority youth live, all tend to make the drug trade relatively attractive as a source of income, job training, and employment. While affluent suburban drug users may come to the inner cities to purchase drugs, the violence, prostitution, and other drug-related behaviors and incidents which appear on the evening news and the front page of the newspapers are typically contained within the inner city. Accordingly, the "drug problem" continues to be characterized as a problem of the ghettoes, barrios, and reservations. Among most young people, however, the present findings suggest that the problem is by no means limited to—or even disproportionately concentrated among—the racial/ethnic minority groups.

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Appendix A

Variable Names and Descriptions

1. CIGARETTES: How frequently have you smoked cigarettes during the past 30 days? 1=none, 2= <1/day, 3=1-5/day, 4=1/2 pack/day, 5=1 pack/day, 6=1.5 packs/day, 7=2 or more packs/day

2. ALCOHOL: On how many occasions have you had alcoholic beverages to drink during the last 30 days? 1=0 occasions, 2=1-2, 3=3-5, 4=6-9, 5=10-19, 6=20-39, 7=40 or more

3. HEAVY ALCOHOL: On how many occasions in the last two weeks have you had 5 or more drinks in a row? 1=0 occasions, 2=1, 3=2, 4=3-5, 5=6-9, 6=10 or more

4. MARIJUANA: On how many occasions (if any) have you used marijuana (grass, pot) or hashsish (hash, hash oil) during the last 12 months? 1=0 occasions, 2=1-2, 3=3-5, 4=6-9, 5=10-19, 6=20-39, 7=40 or more

5. COCAINE: On how many occasions have you used cocaine (sometimes called "coke," "crack," or "rock"), during the last 12 months? 1=0 occasions, 2=1-2, 3=3-5, 4=6-9, 5=10-19, 6=20-39, 7=40 or more

RACE: respondents racial/ethnic identification.

6. White

7. Black

8. Mexican American

9. Puerto Rican

10. Asian American

11. Native American

12. PARENTAL EDUCATION: mean of parents' education. 1=completed grade school or less, 2=some high school, 3=completed high school, 4=some college, 5=completed college, 6=graduate or professional school after college

13. # PARENTS IN THE HOME: 0=none, 1=1 parent, 2=2 both parents

14. URBANICITY: 1=Farm, 2=country (not a farm), 3=Non-SMSA, 4=Other SMSA, 5=Large SMSA

REGION

15. Northeast

16. South

17. West

18. North Central

19. CURRICULUM: Which of the following best describes your present high school program? 1=academic or college prep, 0=other

20. COLLEGE PLANS: How likely is it that you will graduate from college (four-year) program? 1=definitely won't, 2=probably won't, 3=probably will, 4=definitely will

21. GRADES: Which of the following best describes your average grade in high school so far? 1=D, 2=C−, 3=C, 4=C+, 5=B−, 6=B, 7=B+, 8=A−, 9=A

22. TRUANCY: mean of number of whole days of school skipped in the last four weeks and number of classes skipped in the last four weeks. Coded from 10-65 where 10=not at all and 65=approximately 11+ times truant

23. HOURS WORKED: On average over the school year, how many hours per week do you work in a paid or unpaid job? 1=none, 2=5 or less hours, 3=6 to 10 hours, 4=11 to 15 hours, 5=16 to 20 hours, 6=21 to 25 hours, 7=26 to 30 hours, 8=more than 30 hours

24. WEEKLY INCOME: Total weekly income, including job, allowances, etc. 1=none, 2=$1-5, 3=$6-10, 4=$11-20, 5=$21-35, 6=$36-50, 7=$51-75, 8=$76-125, 9=$126+

25. RELIGIOSITY: Mean of how often student attends religious services and how important religion is in the student's life. 1=very low, 2=low, 3=high, 4=very high

26. POLITICAL VIEWS: How would you describe your political beliefs? 1=very conservative, 2=conservative, 3=moderate, 4=liberal, 5=very liberal, 6=radical

27. EVENINGS OUT: During a typical week, on how many evenings do you go out for fun and recreation? 1=less than one, 2=one, 3=two, 4=three, 5=four or five, 6=six or seven

28. DATING: On average, how often do you go out with a date (or your spouse if you are married)? 1=never, 2=once a month or less, 3=2 or 3 times a month, 4=once a week, 5=2 or 3 times a week, 6=over 3 times a week

Appendix B

Correlation Matrix[1]

	MALE MEAN	1.64	2.70	2.07	2.24	1.28	.78	.11	.05	.02	.03	.02	37.19
	S.D.	1.24	1.66	1.43	1.99	.95	.42	.32	.21	.14	.17	.12	11.81
FEMALE	MEAN	S.D.	2	3	4	5	6	7	8	9	10	11	12
1. 30 day cigs	1.68	1.23	.328	.327	.408	.276	.106	-.097	-.035	-.022	-.042	.031	-.062
2. 30 day alcohol	2.26	1.39	.382	.797	.473	.308	.139	-.125	-.005	-.040	-.085	.015	.004
3. 5+drinks	1.56	1.07	.364	.718	.461	.310	.120	-.115	.009	-.033	-.081	.018	-.024
4. 12 month MJ	1.91	1.64	.486	.500	.438	.518	.075	-.060	-.009	-.019	-.058	.014	.010
5. 12 month coke	1.20	.79	.311	.287	.268	.483	.026	-.053	.021	.025	-.023	.015	-.010
6. White	.77	.42	.150	.214	.136	.119	.056	-.667	-.407	-.269	-.321	-.237	.180
7. Black	.13	.33	-.136	-.195	-.131	-.106	-.067	-.698	-.077	-.051	-.061	-.045	-.083
8. Mexican	.04	.20	-.064	-.038	-.013	-.029	-.006	-.390	-.081	-.031	-.037	-.027	-.212
9. Puerto Rican	.02	.14	-.028	-.053	-.039	-.035	-.004	-.260	-.054	-.030	-.024	-.018	-.063
10. Asian	.03	.16	-.047	-.075	-.053	-.050	-.015	-.292	-.061	-.034	-.023	-.022	.066
11. Native Am.	.02	.12	.050	.007	.020	.029	.024	-.226	-.047	-.026	-.017	-.020	-.063
12. Parent Ed	36.51	11.92	-.052	.068	.005	.022	.006	.198	-.098	-.204	-.071	.052	-.063
13. #Parents	1.67	.58	-.063	.021	-.001	-.056	-.050	.198	-.214	-.009	-.049	.011	-.044	.107
14. Urbanicity	3.87	.97	.018	.014	-.009	.056	.067	-.106	.055	.039	.093	.078	-.054	.120
15. South	.33	.47	-.068	-.097	-.072	-.093	-.077	-.163	.204	.045	-.020	-.055	.023	-.095
16. NE	.21	.41	.098	.043	.018	.076	.071	.050	-.039	-.104	.099	.008	-.015	.022
17. NCentral	.28	.45	.043	.078	.083	.014	-.051	.135	-.071	-.092	-.048	-.038	-.016	.025
18. West	.18	.39	-.070	-.018	-.027	.018	.079	-.010	-.127	.162	-.023	.104	.006	.063
19. Curriculum	.52	.50	-.173	-.024	-.074	-.090	-.077	.126	-.097	-.077	.007	.040	-.067	.308
20. College plans	2.96	1.16	-.206	-.036	-.079	-.096	-.075	.027	.015	-.048	-.035	.073	-.072	.359
21. HS grades	5.99	1.88	-.207	.115	.138	.169	.103	.133	-.130	-.058	-.035	.053	-.039	.192
22. Truancy	15.38	8.85	.217	.295	.265	.320	.227	.003	-.048	.037	.014	.027	.007	.011
23. Hrs. work/wk	3.95	2.26	.129	.117	.086	.106	.072	.099	-.082	-.043	-.015	-.036	.014	-.052
24. Total week $	5.68	2.21	.128	.142	.107	.126	.096	.027	-.001	-.032	.007	-.043	.009	-.011
25. Religiosity	28.05	8.98	-.212	-.209	-.158	-.243	-.147	-.150	.171	.054	.019	-.030	-.021	.009
26. Politics	3.16	.96	.092	.105	.078	.129	.087	-.022	.012	.015	.002	.022	-.014	.047
27. Evenings out	3.36	1.30	.229	.327	.285	.275	.150	.172	-.123	-.058	-.048	-.083	-.001	.031
28. Dates/week	3.61	1.65	.160	.191	.144	.159	.112	.144	-.106	-.055	-.030	-.080	.019	-.018

Note:

1. Means, standard deviations, and correlations above the diagonal are for males and below the diagonal are for females.

Correlation Matrix (cont.)

		13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
	MALE MEAN	1.68	3.84	3.2	.22	.27	.19	.49	2.89	5.45	16.68	4.22	6.09	25.99	3.11	3.63	3.40
	S.D.	.58	1.00	.47	.41	.44	.39	.50	1.13	1.96	9.98	2.40	2.27	9.22	1.18	1.31	1.56
FEMALE																	
1.	30 day cigs	-.066	-.040	-.017	.023	.047	-.056	-.178	-.224	-.198	.207	.134	.125	-.151	.105	.183	.119
2.	30 day alcohol	-.023	-.036	-.034	.014	.040	.020	.095	.104	.152	.309	.115	.152	-.167	.103	.304	.190
3.	5+ drinks	-.035	-.049	-.038	-.002	.057	-.019	-.117	-.128	-.160	.301	.099	.126	-.149	.099	.299	.174
4.	12 month MJ	-.060	.047	-.067	.041	.006	.030	-.095	-.109	-.185	.305	.076	.110	-.201	.156	.251	.127
5.	12 month coke	-.055	.070	-.063	.056	-.056	.079	-.076	-.076	-.112	.253	.064	.112	-.132	.104	.167	.102
6.	White	.201	-.110	-.127	.042	.136	-.047	.109	.037	.102	-.017	.082	.044	-.123	-.026	.071	.102
7.	Black	-.213	.051	.176	-.027	-.060	-.115	-.088	-.039	-.128	-.032	-.072	-.020	.137	.017	-.013	-.064
8.	Mexican	-.022	.034	.037	-.110	-.094	.180	-.078	-.050	-.040	.052	-.018	-.019	.049	.017	-.036	-.016
9.	Puerto Rican	-.044	.092	-.020	.108	-.067	-.014	-.020	.005	-.032	.021	-.001	.003	.002	.011	-.028	-.014
10.	Asian	-.001	.094	-.066	.011	-.050	.125	.064	.098	.082	.011	-.059	-.053	.000	-.005	-.079	-.106
11.	Native Am.	-.045	-.049	.025	-.024	-.002	-.003	-.074	-.078	-.030	.008	.020	.005	-.019	.012	-.001	.009
12.	Parent Ed	.085	.130	-.096	.041	.011	.059	.314	.359	.200	-.016	-.115	-.045	.016	.004	-.008	.010
13.	#Parents		-.002	-.050	.015	.039	-.001	.128	.099	.104	-.062	-.020	-.034	.059	-.047	.001	.004
14.	Urbanicity	-.004		-.162	.183	-.053	.061	.117	.162	-.010	.056	-.001	.097	-.072	.016	.024	.001
15.	South	-.068	-.167		-.366	-.419	-.333	-.087	-.059	.018	-.066	-.017	-.015	.160	-.051	-.023	.004
16.	NE	.013	.172	-.363		-.322	-.256	.099	.033	.009	.012	.017	.043	-.108	.049	.026	.011
17.	NCentral	.044	-.024	-.438	-.317		-.293	.005	-.001	-.024	-.061	.004	-.032	-.014	-.002	.041	.020
18.	West	.019	.051	-.333	-.241	.291		-.006	.037	-.004	.135	-.002	.010	-.062	.012	-.046	-.039
19.	Curriculum	.131	.064	-.067	.083	.015	-.022		.531	.389	-.111	-.156	-.104	.069	-.031	-.071	-.021
20.	College plans	.107	.129	-.028	.012	-.006	.030	.493		.376	-.090	-.175	-.101	.114	-.023	-.070	-.030
21.	HS grades	.166	-.064	.050	-.011	-.024	-.021	.368	.332		-.183	-.117	-.103	.113	-.057	-.101	-.036
22.	Truancy	-.037	.085	-.109	.017	-.041	.163	-.097	-.056	-.197		.111	.151	-.144	.105	.205	.112
23.	Hrs. work/wk	-.029	.061	-.090	.044	.030	.029	-.067	-.073	-.050	.103		.664	-.061	.017	.008	.140
24.	Total week $	-.055	.142	-.064	.069	-.007	.016	-.044	-.025	-.059	.127	.664		-.077	.020	.105	.202
25.	Religiosity	.065	-.077	.174	-.123	-.006	-.076	.058	.096	.098	-.156	-.095	-.093		-.132	-.073	-.015
26.	Politics	-.044	.039	-.063	.059	.003	.014	.010	.020	-.041	.088	.012	.012	-.179		.072	.022
27.	Evenings out	.045	.039	-.062	.036	.048	-.018	-.039	-.041	-.065	.201	.038	.127	-.085	.049		.324
28.	Dates/week	.003	.005	.005	.018	.007	-.032	-.064	-.104	-.048	.104	.129	.176	-.075	-.004	.394	

Note:

1. Means, standard deviations, and correlations above the diagonal are for males and below the diagonal are for females.