

## Correlates of Adolescent Marijuana Use As Related to Age, Sex, and Ethnicity

JUDITH S. BROOK, IRVING F. LUKOFF, AND MARTIN WHITEMAN<sup>1</sup>

*Columbia University*

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This study examines the interactive effects of background factors and personality/attitudinal and perceived environmental dimensions on adolescent drug behavior. Data were collected during home interviews using a structured interview schedule. The sample consisted of 403 British West Indian black, American black, and white adolescents, ranging in age from 13 to 17. Results suggested that two processes, nonconformity to conventional middle class values at both the personality/attitudinal and institutional level, and modeling of familial and peer drug use account in large part for adolescent drug behavior. The majority of correlates of adolescent drug behavior were similar in different sex, age, and ethnic groups.

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### INTRODUCTION

A review of research relating to drug use [1] has emphasized the need for the integrative study of demographic, personality, and perceived environmental factors which are essential for an adequate understanding of adolescent drug use. This study, therefore, deals with the relationship between background factors and (a) perceived environmental variables and (b) a series of personality/attitudinal dimensions and their relation to adolescent drug use.

Several studies of adolescent marijuana use have been concerned with its relation to the demographic variables of ethnicity, sex, and age. With regard to ethnicity, some investigators have reported that ethnicity is related to marijuana use whereas others have reported no relationship [2,3,4]. The findings relating to age are more consistent: with increasing age, there is an increase in the use of marijuana [2,5,6]. As regards sex, a number of published studies have found that marijuana use is higher among males [7,8]; however, with the exception of Josephson's findings [5], there appears to be a trend toward the lessening of these differences [2,9,10].

As for the perceived environmental factors, one of the most prominent is the effect of interpersonal relations on adolescent drug use, more specifically the influence of the adolescent's friends and family. A review of the literature indicates that both family and peer use of illicit drugs are related to the adolescent's own use of drugs [2]. The role peer-group processes have on induction into drug use and on the acquisition of appropriate behaviors related to the use of drugs has been well documented [8,10]. In addition, several investigators have found that the use of psychoactive drugs by parents and/or siblings is related to the adolescent's own use of illicit drugs [11,12].

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Please address reprint requests to: Dr. Judith S. Brook, Columbia University, 622 West 113th Street, New York, NY 10025

Finally, a number of studies have focused on the personality/attitudinal correlates of drug use among adolescents [for reviews see 13,14]. Nonusers as compared with marijuana users have been described as more religious, less liberal, less likely to have engaged in premarital sexual relations, and less likely to drink excessively. Related to this, Hogan, Mankin, Conway, et al. [15] found that college student marijuana users exhibited less conformity, more hostility to conventions and rules, and greater impulsivity. In a study of high school students, Jessor et al. [9] reported that users were characterized by the lower value they placed on achievement as well as having lower expectations for achievement. Users valued independence more and were more tolerant of deviance.

As stated before, except for the work of a few investigators such as Jessor et al. [9], the *interactive* processes between demographic variables and personality/attitudinal, or perceived environmental factors, and adolescent drug behavior have not been studied. Therefore, the purpose of the present study is three-fold: the first aim is to explore the relationship between a number of personality/attitudinal dimensions and the adolescent's use of marijuana. The second aim is to examine the relationship between perceived environmental factors and the adolescent's marijuana use. The third aim is to determine whether the patterns of relationship among these correlates of marijuana use change as a function of the status variables of sex, age, and ethnicity.

## METHOD

### *Sample*

The sample comprised 138 (77 male, 61 female) British West Indian black, 141 (65 male, 76 female) American black, and 124 (60 male, 64 female) white adolescents, ranging in age from 13 to 17. The overwhelming majority of the adolescents in each ethnic group attended inner-city public schools.

The adolescents were sampled from contiguous census tracts in Brooklyn, New York; one area was predominantly white, one predominantly black, and one had a number of West Indians. Since the adolescents were drawn from one community, extrapolation to the population must be made with caution. Houses and blocks were randomly selected within these areas. The mothers were then screened in their homes to determine (1) ethnicity, (2) social class, and (3) the presence of at least one child between the ages of 13–17 years of age. Thus only adolescents living with their mothers or mother surrogates were included in the study. This sampling design was used in order to ensure an approximately equal number of black, white, and West Indian adolescents comparable in terms of socioeconomic background.

Subjects were classified as to the level of occupation and education of the head of the household (main supporter of the family). The National Opinion Research Center's Occupation Scale, adapted from the Dictionary of Occupations [16], was used to rank the occupations in deciles of 1–10 (lowest to highest). Education was coded as follows: 1 (eighth grade or less); 2 (some high school); 3 (high school graduate); 4 (some college, college graduate or postgraduate).

The main supporters of the family were predominantly in semiskilled or skilled occupations (fourth and fifth deciles) with an average education between ninth and eleventh grade (some high school).

In order to examine the relationship between SES and ethnicity the following procedure was employed. An SES index was evolved as follows: the distributions of the occupational and educational ratings for the total group were dichotomized into

groups of approximately equal size. Adolescents whose main supporter received low scores on *both* education and occupation were classified as lower SES; all others were classified as higher SES. The SES distributions were approximately equivalent for the three ethnic groups ( $\chi^2(2) = 3.42, ns$ ).

The National Opinion Research Center of the University of Chicago conducted the interviews and paid each respondent \$5.00 for participating in the study. This probably explains the high proportion (98 percent) of adolescents who agreed to be interviewed and completed the interview.

### *Instrument*

A series of questions was developed which could be used in a face-to-face interviewing situation. Some of the questions were adapted from those used by Jessor et al. [9]. Final selection of the items within each scale was based on their intercorrelations and reliabilities. The analyses used in the present study are based on the following scales which have been grouped into two main areas, personality/attitudinal and perceived environmental.

#### *(1) Personality/attitudinal scales.*

(a) Locus of Control: This scale measured the extent to which the subject perceived his future as depending upon his own acts (internal) as opposed to chance factors (external). (9-item scale; Cronbach alpha = .67)

(b) Assertion-Passivity: This was a measure of the subject's perception of his orientation as being assertive as opposed to passive. (3-item scale; Cronbach alpha = .51)

(c) Marlowe Crowne: Several items were selected from the Marlowe and Crowne Social Desirability Scale. The scale was developed to locate individuals who describe themselves in socially acceptable ways. (5-item scale; Cronbach alpha = .55)

(d) Expectations Regarding Friend and Family: Included were 2 scales designed to measure the subject's expectations of having his needs satisfied by his friends and family. (3 items for each scale; Cronbach alpha for Friend, Family = .63 and .68 respectively)

(e) Attitude Toward Deviance: This scale was designed to measure the adolescent's feelings about deviant behavior. The subject was asked to rate how wrong several deviant acts were. (10-item scale; Cronbach alpha = .85)

#### *(2) Perceived environmental scales.*

(a) Orientation to Parents versus Peers: This scale measured the subject's perception of closeness to parents relative to peers. (3-item scale; Cronbach alpha = .34)<sup>2</sup>

(b) Closeness to Peers: This was a measure of the subject's perception of his relationship to his peers and the extent to which they influence him. (3-item scale; Cronbach alpha = .28)<sup>2</sup>

(c) Involvement in Deviance by Relatives: This was a scale designed to measure the subject's perception of involvement in deviant behavior (fighting or stealing) by his family members. (2-item scale; Cronbach alpha = .50)

(d) Perception of School Achievement: This scale included questions about grades, playing hooky, and time spent on homework. (3-item scale; Cronbach alpha = .52)

The interview schedule also included items relating to friend, family, and self drug

<sup>2</sup>These scales were kept despite their low reliability as the dimensions they tap have been found to be highly related to drug use.

use. Respondents were asked how many (none, few, some, most) friends and immediate family members had ever used marijuana. As to self drug use, respondents were classified as users if they reported having ever used marijuana. Due to the legal climate at the time (the Rockefeller drug law had just been passed) it was not considered advisable to probe for degree of marijuana use. Our extrapolations based upon follow-up studies of this group indicate that approximately 85 percent of the adolescents were experimenters at the time they were interviewed. These results are in accord with other findings [5,17] which indicate that the great majority of students at the high school level are experimenters.

The importance of studying the experimental use of drugs among young adolescents has been highlighted by the National Commission on Marijuana and Drug Abuse [17]. Use of marijuana at an early age, even on an experimental basis, is a prognostic indicator of potentially heavier use of marijuana. Moreover, use of marijuana has been found to increase the probability of using other substances [18]. Since our sample is part of a longitudinal investigation, we will be able to ascertain whether our results are consistent with the above findings.

### *Procedure*

All of the subjects were seen individually for approximately one hour by the interviewer in the privacy of their homes and were assured of the confidentiality of their answers. The interviewer read the questions orally and the teenagers were instructed to circle the appropriate answer on their booklets to insure privacy.

## RESULTS

Nineteen percent of the adolescents reported having ever used marijuana. Marijuana users were compared with nonusers on a number of background variables (age, sex, and ethnicity). Based on  $\chi^2$  analyses, sex and ethnicity were not found to be related to adolescent marijuana use ( $\chi^2(1) = 1.35, ns$ ;  $\chi^2(2) = 2.34, ns$ ; respectively). With respect to age, 11 percent of the 13 to 15 year olds reported marijuana use whereas 29 percent of the 16 to 17 year olds reported marijuana use ( $\chi^2(1) = 19.38, p < .001$ ). These results closely parallel those reported by the Drug Abuse Council [19].

In the following section only the ethnicity by drug two-way analyses of variance will be presented as no sex or age by drug interactions emerged from the data. To save space, only the drug main effects and drug by ethnicity interactions will be presented; the ethnicity main effects will be omitted. (However, it should be noted that on the majority of scales, there were ethnic differences.)

Table 1 presents the means and standard deviations for the Personality/Attitudinal Scales (see Table 1).

Examination of Table 1 indicates that drug users had significantly lower scores on the Marlowe Crowne scale (scoring in the less socially desirable category) ( $F(1,397) = 10.59, p < .01$ ), higher internal scores ( $F(1,397) = 6.83, p < .01$ ), and reported greater tolerance of deviance ( $F(1,397) = 41.36, p < .001$ ). The drug by ethnicity interaction in these analyses did not approach significance. Analysis of the Assertion scale indicates that the main effect of drug use was not significant. However there was a significant interaction effect ( $F(2,397) = 2.97, p < .05$ ). Simple effects analyses indicate that there were ethnic differences among the drug users ( $p < .01$ ). Follow-up Newman-Keuls analysis revealed that among the drug users, blacks and British West Indians were more assertive than whites.

A drug main effect was not obtained for the Family Expectation scale; however, there was a drug by ethnicity interaction ( $F(2,397) = 2.98, p < .05$ ). Simple effects test

TABLE 1  
Means and Standard Deviations of Personality/Attitudinal  
Scale Scores by Ethnicity for No Drug and Drug Groups

Scale	Black		White		West Indian	
	No Drug (N=110)	Drug (N=31)	No Drug (N=98)	Drug (N=26)	No Drug (N=117)	Drug (N=21)
Marlowe Crowne						
Social Desirability						
$\bar{X}$	6.96	6.68	7.05	6.31	7.06	6.24
<i>SD</i>	1.50	1.19	1.54	1.12	1.38	1.48
Locus of Control						
$\bar{X}$	21.16	23.52	23.32	23.23	22.02	23.43
<i>SD</i>	4.06	3.78	3.78	3.25	4.10	2.80
Attitude Toward						
Deviance						
$\bar{X}$	61.72	47.90	58.10	40.38	67.37	56.43
<i>SD</i>	17.63	16.44	19.77	15.56	16.09	17.89
Assertion-						
Passivity						
$\bar{X}$	11.64	12.52	11.27	10.54	11.66	11.81
<i>SD</i>	2.21	1.79	2.30	2.16	2.24	1.96
Family Expectation						
$\bar{X}$	6.63	6.97	6.65	7.11	6.90	5.95
<i>SD</i>	1.81	1.56	1.47	2.05	1.86	2.01
Friend Expectation						
$\bar{X}$	5.68	6.39	6.64	7.15	5.71	5.71
<i>SD</i>	1.65	2.26	1.64	1.12	1.88	1.59

Note: For most scales, a high score equals high on the dimension being measured. For the Locus of Control and Assertion-Passivity scales, a high score indicates more internality and greater assertiveness, respectively.

revealed that among the West Indians, more nonusers expect satisfaction of their needs from their family than users ( $p < .05$ ). On the Friend Expectation scale there was a drug main effect with users of drugs more often reporting that they expected their needs of affection, recognition, and dependency to be met than did nonusers ( $F(1,397) = 4.04, p < .05$ ). The analysis of friend expectation yielded no drug by ethnicity interaction.

Table 2 presents the means and standard deviations for the perceived environmental scales (see Table 2). On the Parent vs. Peer scale, closeness to parents relative to peers was consistently higher among the nonusers than the users in each of the three ethnic groups ( $F(1,397) = 31.85, p < .001$ ). On the Peer Closeness scale, drug users reported being closer to their friends than did nonusers ( $F(1,397) = 11.82, p < .001$ ). No drug by ethnicity interaction emerged on these two scales.

As shown in Table 2, adolescent marijuana users reported having more friends and family who used marijuana than did nonusers ( $F(1,397) = 153.98, p < .001$ ;  $F(1,397) = 78.30, p < .001$ , respectively). No ethnicity by drug interactions emerged from the data.

As can be seen in Table 2, users reported more involvement in deviance on the part of their relatives than did nonusers ( $F(1,397) = 13.32, p < .001$ ). A drug by ethnicity interaction also emerged ( $F(2,397) = 3.01, p < .05$ ). Simple effects analysis indicates greater drug vs. no drug differences among the blacks than among the whites or West Indians in reported family involvement in deviance ( $p < .01$ ).

With respect to the Perception of School Achievement scale, nonusers reported

TABLE 2  
Means and Standard Deviations of Perceived Environmental  
Scale Scores by Ethnicity for No Drug and Drug Groups

Scale	Black		White		West Indian	
	No Drug (N=110)	Drug (N=31)	No Drug (N=98)	Drug (N=26)	No Drug (N=117)	Drug (N=21)
Parent vs Peer						
$\bar{X}$	5.84	6.74	6.05	7.73	5.49	7.05
<i>SD</i>	1.67	2.45	2.00	2.20	1.73	1.94
Peer Closeness						
$\bar{X}$	7.60	9.00	8.11	8.42	7.70	8.14
<i>SD</i>	1.92	1.67	1.73	1.58	1.79	1.31
Friend Drug Use						
$\bar{X}$	3.10	1.45	3.15	1.54	3.35	2.09
<i>SD</i>	1.03	.67	.99	.81	1.00	.94
Family Drug Use						
$\bar{X}$	3.71	3.10	3.97	3.27	3.93	3.43
<i>SD</i>	.69	.94	.17	.83	.25	.75
Involvement in Deviance by Relatives						
$\bar{X}$	2.56 <sup>a</sup>	3.03	2.15	2.31	2.15	2.24
<i>SD</i>	.75	.71	.44	.47	.41	.44
Perception of School Achievement <sup>b</sup>						
$\bar{X}$	11.64	10.52	12.33	11.08	13.08	11.43
<i>SD</i>	2.28	2.06	2.70	2.68	1.93	2.25
Church Attendance						
$\bar{X}$	3.19	2.58	3.84	2.92	3.59	3.24
<i>SD</i>	1.64	1.50	1.46	1.62	1.43	1.51

Note: For most scales, a high score equals high on the dimension being measured. On the Parent vs. Peer and Friend-Family Drug Use scales, a high score indicates an orientation to peers and fewer drug users, respectively.

<sup>a</sup>N=109

<sup>b</sup>For this scale, Ns are as follows: Black (106, 27); White (94, 24); West Indian (111, 21).

higher grade point averages, greater time spent on homework, and less frequent cutting of classes than drug users ( $F(1,397) = 19.15, p < .001$ ). No significant ethnicity by drug interaction emerged from the data. As expected, nonusers more often attended church services or church-related activities than users ( $F(1,397) = 10.93, p < .001$ ). No drug by ethnicity interaction emerged.

In conclusion, it should be noted that the relationships between most of the scales and adolescent drug use were maintained despite control on the Marlowe Crowne scale (a measure of social desirability). This finding lends support to the validity of the results of this study.

## DISCUSSION

In the present study, both personality and perceived environmental factors were found to be related to the use of marijuana by adolescents. Moreover, the patterns of relationships were similar for males and females and for older and younger adolescents. Even though age was found to be significantly related to drug use in this study, it did not serve as a moderator variable. The present results are consistent with Jessor et al.'s [9] findings of the constancy of patterning between personality and perceived

environmental variables and drug use for both younger and older adolescents. With regard to ethnicity, it is striking that even though there were ethnic differences *among* the groups on practically all scale variables in the network, the relationships between these variables and adolescent marijuana use were maintained within *each* of the ethnic groups. However, there is one exception; the family may play a different role in the three ethnic groups. For example, the variable of involvement in deviance by relatives was more highly related to adolescent drug use among the blacks than among the other two ethnic groups. In addition, it was only among the West Indians that the variable of family expectations was related to drug use.

Taken as a whole the results of this study suggest that two processes, nonconformity to conventional values and modeling, contribute to adolescent drug-taking behavior, regardless of sex, age or ethnicity. Users are less likely to conform whether at the personality/attitudinal, or institutional level than nonusers. At the personality/attitudinal level, the results suggest that those adolescents who tend to respond in a culturally sanctioned manner are less likely to engage in non-socially sanctioned behavior such as using marijuana. Thus greater social desirability (as measured by the Marlowe Crowne Scale), intolerance of deviance, and an external orientation (perhaps to middle class norms) are negatively related to marijuana use. In accord with previous findings reported by Jessor et al. [9], it appears that attitudinal conformity to the accepted morals of adult society regarding deviant behavior may serve as a strong force preventing the adolescent from engaging in drug-taking behavior.

At the institutional level, users are nonconforming in terms of school, the church, and the family. Drug use occurs more frequently among those adolescents with lower grade point averages, those who report more cutting of classes, and those who spend less time on homework. One might make the assumption, as Suchman [8] does, that these factors are reflective of the "hard work-success" ethic of conventional society. Our results also indicate that marijuana users are less likely to attend church services than nonusers, thus supporting the findings of numerous investigators [20,21,22].

At the family level, closeness and conformity to parental wishes as opposed to peers serve to insulate the adolescent from self use of drugs. These findings are supported by those of Blum and Associates [11] and Tec [23], who have highlighted the importance of the parent in the adolescent's involvement in drugs. In summary, marijuana use occurs more frequently among those adolescents who do not conform to the social conventions of society at the personality/attitudinal and institutional level.

A second process, that of modeling, is of particular significance in explaining adolescent drug use, regardless of ethnicity, sex, or age of the adolescent. Adolescents who report family use of illicit drugs more often report that they themselves have used drugs, suggesting that they are modeling their drug-taking behavior after their parents and siblings. These findings confirm those of Lavenhar et al. [6] and Smart and Fejer [7]. The results of the present study also suggest that the more the student is involved in the drug subculture, as measured by the number of friends who use marijuana, the more likely he is to use marijuana, suggesting that he is also modeling his drug-taking behavior after his friends.

In conclusion, two processes, nonconformity to conventional values at both the personality/attitudinal and institutional level, and modeling of familial and peer drug use may account in large part for adolescent drug behavior. In general, these processes were found to be consistent in adolescents regardless of sex, age, or ethnicity.

## SUMMARY

The relationship between personality/attitudinal variables and marijuana use among 403 white, black, and British West Indian adolescents was examined. Two processes were found to be related to adolescent drug use; modeling of family and peer drug behavior, and social nonconformity at the personality, attitudinal, and institutional levels. The patterns of relationship between the personality/attitudinal factors and self marijuana use were similar for adolescents regardless of age or sex. While the processes related to adolescent drug use were similar for the most part in the different ethnic groups, some exceptions were noted.

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Judith S. Brook, Irving F. Lukoff, and Martin Whiteman  
*Columbia University*  
*622 West 113th Street*  
*New York, New York 10025*