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Predictors of Drug Use Among South African Adolescents

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Abstract

Purpose: To determine the association of frequency of illegal drug use with five groups of factors: environmental stressors; parental drug use; parental child rearing; peer drug use; and adolescent personal attributes.

Methods: 1468 male (45%) and female (55%) adolescents, aged 12 to 17 years (mean=14.76, S.D.=1.51), were interviewed at home in Durban and Capetown, South Africa. Independent measures assessed environmental stressors, parental child rearing, parental drug use, peer drug use, and adolescent personal attributes. The dependent variable was the adolescents' frequency of illegal drug use.

Results: Regression analyses showed that personal attributes and peer substance use explained the largest percentage of the variance in the adolescents' frequency of illegal drug use. In addition, both parental factors and environmental stressors contributed to the explained variance in adolescent drug use above and beyond the two more proximal domains at a statistically significant level.

Conclusions: Knowing the contribution of more proximal versus more distal risk factors for illegal drug use is useful for prioritizing targets for interventions. Targeting changes in the more proximal predictors (e.g., adolescent personal attributes) may be more effective as well as more feasible than trying to produce change in the more distal factors such as environmental stressors.

Keywords

Adolescence; South Africa; Drug Use

INTRODUCTION

Substance use among adolescents in all parts of the world continues to be a significant health problem. An understanding of the risk factors related to adolescent substance use in different countries and in varying cultural groups will assist culturally relevant prevention programs aimed at individuals living in different parts of the world. Investigators have made important advances in identifying the predictors of substance use in the United States and other industrialized nations; nevertheless, much remains to be learned about the risk factors in developing countries. At the present time, there are very few studies which have examined the risk factors for marijuana and other drug use in South Africa [1, 2]. This study assesses the

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predictors of substance use by studying a sample of South African youth who live in a social context in which violence, HIV/AIDS, and low educational attainment are prevalent [3, 4].

Illegal drug use among South African adolescents tends to be lower than among adolescents in the United States, with several studies reporting lifetime marijuana use rates of 6% – 12% [5–7]. A national study in the United States reported an lifetime illicit drug use rate of 19.7% among 12–17 year-olds [8]. However, since there is no national survey of drug use in South Africa, it is difficult to compare rates between the two countries.

Investigators in the United States have identified a number of risk factors that increase the likelihood of substance use [9] in the demographic, environmental stressor, peer, family, and personal domains. Factors in the demographic domain include gender, age, and ethnicity, all of which predict substance use. Males, older adolescents, and White adolescents typically report higher frequencies of drug use in the United States [10–15] than other groups.

There is increasing evidence that environmental and economic stressors have adverse consequences for families and children [16]. Environmental stressors include such influences as discrimination, victimization, and markers of poverty, such as lack of household amenities, and hunger [17–21]. We hypothesize that high levels of environmental stress are related to adolescent drug use. Over the past decade, South Africans have been exposed to a number of environmental stressors, including the following: (1) major social changes associated with the transition from apartheid to equality; (2) violence and crime; (3) high rates of unemployment; (4) technological changes; and (5) an ever-worsening AIDS epidemic. In addition, changes in demographic, economic, and political factors, as well as in the production, distribution, and marketing of drugs are postulated to have affected adolescent substance use [1].

During the last two decades, investigators have incorporated two types of parental influences into their theories of adolescent drug use. The first is parental drug use, which in our study, includes parental smoking, alcohol, and marijuana use. Studies suggest that drug use by the parent(s) serves as a behavioral model and predicts the child's drug use [9]. Parental drug use is thus hypothesized to be linked to the adolescents' own drug use. The second type of parental influence is the domain of child rearing, which includes parental monitoring and the mutual attachment relationship between parent and child. Parents exert control through supervision and monitoring [22], factors which have been identified as protective factors against tobacco, alcohol, and drug use [23]. A parent-child mutual attachment relationship which is marked by affection and identification with the parents has also been found to predict less tobacco, alcohol, and drug use in the adolescent [24]. In our research, the relationship of the parental characteristics domain (drug use, childrearing) to adolescent drug use is conceptualized as more distal than the adolescent's personal attributes and his/her association with deviant peers [24, 25]. According to a family-interactional perspective [26], a weak parent-child mutual attachment relation is related to intrapsychic distress, and drug-using peers, both of which predict drug use [27]. Oetting and Donnermeyer [25] note that adolescents with weak bonds to their family are more likely to be pulled into peer groups involved in delinquency and drug use.

Peer substance use is one of the major and well-established predictors of adolescent drug use [28]. The influence of the peer group is exerted via modeling and social reinforcement of nonconforming behavior [25, 28–31]. Previous research suggests that peer drug use influences adolescent behavior [32] and that adolescents' own predispositions to using drugs may lead them to select deviant peers [33–35].

In the domain of personal attributes which make adolescents vulnerable to drug use, the linkage between depressive mood and substance use is equivocal. Some studies have found a relationship between depressive mood and substance use [36], whereas other research has

found no association between illegal drug use and depression [37]. In contrast, there is strong evidence suggesting that unconventional attitudes and behaviors (e.g., tolerance of deviance, delinquency) are related to adolescent drug use. In our model, personal characteristics are conceptualized as the most proximal predictors of adolescent drug use, closely followed by deviant peer associations. [26].

Some drug studies conducted in South Africa [1, 2] have examined adolescent drug use within a multivariate framework. However, such studies are few in number. Our developmental model is largely based on a family-interactional perspective [38], and on results from our empirical studies conducted in the United States (9, 12). In addition, we hypothesize that among South African adolescents, an ecological framework of human development [39] will best describe the influence of the domains of environmental stressors, parental factors (drug use, child rearing), adolescent personal attributes, and peer factors in predicting adolescent illegal drug use. Such a model postulates environmental stressors and family factors as more distal to drug use, and adolescent personal attributes and peer influences as more proximal. Thus, we expect that demographic factors and personal attributes explain the largest percentage of the variance in adolescent drug use, closely followed by peer substance use. In addition, we expect parental factors to explain a smaller part of the variance above and beyond these two more proximal domains. Finally, environmental stressors are hypothesized to explain an even smaller part of the variance in adolescent drug use. We expect our results to be similar to findings reported in industrialized societies, such as the United States. However, there may be some culturally specific variations in the relationships between the above-mentioned predictors and adolescent drug use. Because South Africans have been subject to such high levels of environmental stressors over the last decade, we are particularly interested in assessing the relationship between these stressors and adolescent drug use in the context of the more established predictors of drug use. Specifically, we would like to test whether and how much variance the more distal domains of environmental stressors and parental factors (childrearing and drug use) contribute above and beyond the more proximal domains of personal attributes and deviant peer associations. We use hierarchical regression analyses to investigate these relationships.

METHODS

Sample and Procedure

The sample consisted of 1468 South African adolescents interviewed in 2001. They were drawn from households in urban areas within the Durban metropolis. Over 90% of the subjects asked to participate agreed to do so. The subjects were not given a monetary incentive to participate. The sample included 808 (55%) girls and 660 (44%) boys, and their mean age was 14.6 years (S.D.=1.87). Most of the respondents were black (N=660), while the remainder were “Coloured”¹ (N=311), White (N=289), or Indian (N=294). Four adolescents marked their ethnicity as “Other.” Eighty-four percent (N=1228) and 57.5% (N=844) of the adolescents reported living with their biological mother and biological father, respectively. In addition, 12% (N=177) and 13.9% (N=55) reported living with a female guardian or male guardian, respectively. The majority of mothers were not working, followed by semi-skilled workers (e.g., bus driver, factory or household worker). Among fathers, 19.5 % were reported to be not working. Among those working, the majority were reported to be skilled workers (e.g., carpenter, mechanic, policeman/woman), closely followed by semi-skilled workers. The majority of the sample (80.3%) reported either attending or having last attended between 7th and 11th grades. Thirteen percent (N=190) of the respondents reported that people in their household sometimes or often go hungry. A total of 22.3% (N=328) reported having four or fewer items out of a list of seven household amenities (i.e., electricity, radio, television,

¹“Coloured” is commonly used in South Africa to refer to people of mixed race.

telephone, refrigerator, computer, washing machine). The interviewers were recruited from Durban and extensively trained and supervised by the project investigators in South Africa and researchers from the Survey Research Company that was contracted to collect the data. Training included study-specific information on interviewing and sensitivity training regarding adolescent substance abuse.

We used data from the 1996 population census to determine the sampling frame. A two-stage sampling procedure, in which the sample was stratified by race and socioeconomic status, was employed. Rate of unemployment and the employment status of the head of household were used as proxies for socioeconomic status. We had four bands within our socioeconomic indicator. The adolescent respondents were recruited from households within the selected census enumerator areas. Every tenth household was selected from the designated starting point until ten houses had been selected within each enumerator area. One adolescent was recruited from each household, if eligible adolescents resided within those households. Eligible adolescents were defined as those between the ages of 12 and 17 years, inclusive. Where more than one adolescent qualified for inclusion in the study, we used a random selection procedure to determine whom to include.

The interviewers from Durban located and interviewed those adolescents selected in their homes with a structured questionnaire. Virtually all of the participants were interviewed by an interviewer of the same sex and ethnicity. Interviews were conducted in the respondent's language of choice, including English, Afrikaans, Zulu, and Xhosa. Each respondent read a copy of the questionnaire and answered aloud after the interviewer read the questions out loud. For sections regarding the use of drugs, the respondent and interviewer exchanged booklets, and the respondent marked his or her own responses directly on the questionnaire. The respondents were assured that their answers were confidential. A Certificate of Confidentiality was obtained from the National Institute on Drug Abuse. The consent forms were approved by the Institutional Review Board of the Mount Sinai School of Medicine in New York and the Ethics Committee of the Medical Research Council in South Africa.

Measures

Independent Variables.—The sources of the scales used in this study, selected sample items, the range of the answering options, and their Cronbach's alphas are presented in Table 1. Scales presented without a source are original to the authors. The independent scales used in this study were based on item intercorrelations and reliabilities and were grouped as follows: (1) demographic factors; (2) personal attributes; (3) peer factors; (4) parental factors; and (5) environmental stressors. Individual demographic factors included gender and age. Environmental stressors included low socioeconomic status (assessed by measures of number of amenities and prevalence of hunger), victimization, and discrimination. Two types of parental factors were assessed. These were parental drug use, which included parental use of cigarettes, alcohol, and marijuana (dagga), and parental child rearing, which included the mother's and the father's rules for the adolescent, child-centeredness, and the adolescent's identification with the parent. Peer factors included the number of friends who used cigarettes, alcohol, marijuana, and other illegal drugs. The personal attributes domain included rebelliousness, depressive mood, delinquency, and tolerance of deviance. Several scales were adaptations of measures used in previous studies and have content as well as predictive validity for adolescent illegal drug use, delinquency, and psychopathology [26, 27, 40–43]. These measures have been used with ethnically and racially diverse populations in the United States and in Colombia, and have demonstrated adequate to good psychometric properties [12, 17, 26, 27, 38]. These scales were based on a pilot study among 244 South African adolescents, conducted to ensure their linguistic and cultural relevance to South Africans. Standard back-translation procedures were employed to develop the questionnaires.

Dependent Variable.—The dependent variable was the adolescents' lifetime frequency of illegal drug use. This variable was computed as the sum of the frequencies of use of all illegal drugs asked about in the questionnaire, and those drugs included marijuana ("dagga"), Mandrax (a highly addictive, synthetic drug sold in tablet form whose active ingredient is Methaqualone; it is usually crushed and mixed with dagga, then smoked, and is commonly known as "White Pipe"), inhalants, prescription drugs without a prescription (e.g., tranquilizers), and any other illegal drugs (e.g., ecstasy, heroin, cocaine). For each drug the adolescent was asked how often he or she had ever used it during his or her lifetime. Answering options ranged from "Never" (1) to "Once a Week or More" (5). For those adolescents who indicated that their use of a particular drug had varied during their lifetimes, interviewers explained that the answers should reflect the respondent's average use over the lifetime.

Data Analytic Procedures

We first computed Pearson correlations between each of the psychosocial variables and the adolescents' frequency of drug use. Next, using regression analysis, we tested interactions between each of the psychosocial variables and the demographic variables of ethnicity, gender, and age. Less than 5% of the interactions were significant, and no discernible pattern emerged. Therefore, the analysis was conducted with the entire sample. In the following analyses, we controlled for age and gender because these variable were related to drug use. Since there were no ethnic differences in drug use in our sample, we did not include ethnicity as a control variable. A hierarchical regression analysis with frequency of illegal drug use as the dependent variable was conducted. Hierarchical regression analysis allows its user to enter sets of predictor variables (i.e., domains) in a predetermined sequence of steps. Each step of the analysis allows determination of whether the last set of predictors entered explain variance in the criterion, above and beyond the variables which are already in the equation.

For this analysis, domains conceptualized as more proximal to adolescent drug use were entered first, followed by those domains that were conceptualized as more distal. Thus, the domains of predictors were entered in the following order: personal attributes, peer factors, parental characteristics (drug use, child rearing), and environmental stressors.

An inverse transformation was applied to the negatively skewed dependent variable, frequency of drug use, to make the data consistent with the assumptions of linear regression.

RESULTS

Adolescents' lifetime frequency of illegal drug use was relatively low, with 89% of the sample reporting no drug use. Pearson correlation coefficients between the psychosocial factors and the adolescents' frequency of drug use were computed (see Table 2). As shown in Table 2, the findings show that adolescents with higher levels of drug use were more likely to be older and male. Within the environmental stressor domain, two factors were of importance. Adolescents with higher levels of drug use reported greater discrimination and more violence directed towards themselves than those with lower levels of drug use. Neither the degree of hunger experienced in the household nor the number of household amenities were related to the youngster's drug use.

Among the variables reflecting parental drug use, all of the maternal drug use variables were significantly related to the adolescents' frequency of drug use. Paternal drinking and marijuana use were also related to the adolescents' use of illegal drugs. All parental child-rearing variables were related to adolescent drug use. The correlations between the maternal child-rearing variables and adolescent drug use were larger than those between the paternal child-rearing variables and adolescent drug use.

Adolescents with higher levels of drug use reported more unconventionality (e.g., tolerance of deviance) and greater intrapersonal distress (e.g., depressive mood). Finally, adolescents with higher levels of drug use reported greater peer smoking, drinking, marijuana use, and other illegal drug use.

Hierarchical regressions showed that demographic factors and personal attributes explained 15% of the variance in adolescent drug use. Adding the peer variables into the equation resulted in a change of 13% in explained variance. The more distal parental factors only added 2% to the explained variance in adolescent drug use, though this change was statistically significant. Finally, environmental stressors added another 2% of the variance above and beyond all other domains. Together, our ecological-developmental model explained 32% of the variance in adolescent drug use.

DISCUSSION

To our knowledge, this is the first study to examine empirically predictors of illegal drug use among a large community sample of South African adolescents. Our study adds to the literature on adolescent drug use in South Africa in the following ways: First, we have examined the relationship of *multiple* psychosocial domains, including environmental stressors, parental attributes (drug use, parental child rearing), adolescent personal attributes, and peer factors, with illegal drug use among adolescents living in urban areas in South Africa. Second, we have chosen empirically and theoretically derived constructs which have been assessed in relation to adolescent drug use in the United States, thus enabling us to compare findings across cultures. Third, we have included the culturally-specific domain of environmental stressors in South Africa, since a few studies [e.g., ¹], have suggested that these conditions may be associated with the adolescent's frequency of drug use.

While lifetime frequency of drug use reported by our respondents seemed low in comparison to lifetime frequency of illegal drug use in the United States reported by adolescents of similar ages (36.9%; ⁸), our findings are comparable to those of other research studies conducted in South Africa, which reported lifetime prevalence rates of marijuana use of 6%, 9%, and 12%, respectively, among adolescents (^{5,7,50,51}). Thus, it seems that adolescent illegal drug use is less prevalent in South Africa than in the United States.

In line with previous research in the U.S., our findings indicate that both the personal attributes and peer domains have a strong relationship with adolescent drug use. In addition, parental factors (drug use, child rearing) and environmental stressors contribute to adolescent drug use above and beyond these more proximal factors at a statistically significant level, although the magnitude of their contributions is small. Also consistent with research undertaken in the United States [^{52, 53}], these psychosocial factors were significantly related to adolescent drug use among adolescents from different ethnic backgrounds [^{54, 55}]. However, unlike previous research in the U.S. [^{11, 14}], we did not find ethnic differences in drug use among South African adolescents.

With regard to the specific variables in the personal attributes domain, delinquency and deviant attitudes appear to be of greatest significance. As in the U.S., the most powerful personal predictors of drug use are the indicators of unconventionality. Such personal attributes suggest a vulnerability to drug use and have emerged in studies in the United States [⁵⁶].

In the United States, adolescent drug use is often either initiated or exacerbated by associations with deviant peers [^{57–59}]. Both our bivariate and multivariate results suggest that peer influences play an important role in illegal drug use among South African adolescents as well. A possible mechanism explaining the importance of peers in adolescent drug use is that unconventional adolescents tend to seek out deviant peers who in turn contribute to the

adolescent's own unconventional behavior, including drug use [25, 60]. Thus, having personal attributes which make adolescents vulnerable to drug use and having deviant peer associations, together explain the largest percentage of the variance in adolescent substance use.

We also found that adolescents who used illegal drugs, as compared to those who did not, were significantly more likely to have parents who used legal and illegal drugs. Correlations showed only paternal smoking to be unrelated to the adolescent's own use of illegal drugs.

In the Introduction, we postulated two family mechanisms that may be operative. First, it may be that the drug use displayed by some adolescents is acquired through modeling the behavior of their parents. Second, other parental attributes, as expressed in less parental monitoring behaviors and in a low parent-child mutual attachment relationship, may account for the association between parental and adolescent drug use. This latter explanation is particularly convincing given the fact that parental attributes explained only an additional two percent of the variance above and beyond personal attributes and peer substance use, suggesting overlap with the previously entered domains. In particular, parenting behaviors which promote a mutually affectionate, conflict-free attachment and the adolescent's identification with the parent support the development of conventional and well-adjusted adolescents who do not use drugs. Parents of nonusers, in comparison to parents of users, tend to report greater warmth (more child-centeredness, affection, and communication) and less conflict in the relationships with their children [61, 62]. Parental formulation of clear behavioral expectations in the form of rules while maintaining high levels of involvement (two aspects of authoritative parenting) has been linked to adolescents' psychological well-being [38, 63] in the United States. Thus, parental factors contribute to the formation of the adolescent's personal attributes, which, in turn, explain a large part of the variance in substance abuse. Possibly, the unique contribution of the parents' attributes is comparatively small because the parental factors are associated with adolescents' personal attributes.

Similarly, there is likely to be an overlap between parental factors and peer substance use. Adolescents with conventional parents (i.e., with low levels of substance use) and with positive relationships with their parents are less likely to associate with deviant, substance-using peers [38].

In general, these results are consistent with the findings of those investigators who have linked parental socialization practices with a wide range of adolescent problem behaviors in the United States [64]. These findings are in accord with the postulates of Family Interactional Theory as presented in the Introduction. Another possibility is that a genetic mechanism or the interaction of genetic and environmental factors may account for the relationship between parental and adolescent drug use [65].

Environmental stressors, such as those included in our study, may vary depending on the cultural context and thus relate differentially to adolescent drug use. In the last decade, South Africa has undergone major social and economic changes, including the end of apartheid, the concomitants of which may be experienced as personally stressful. For example, violence and racial discrimination are prevalent in contemporary South Africa [66], both factors associated with drug use [67, 68]. Findings in the United States suggest that exposure to discrimination and the experience of violence are related to drug use among adolescents [67–70]. While the additional variance explained by environmental stressors was small in magnitude, it predicted adolescent drug use above and beyond three other domains which have been shown to be important in the prediction of adolescent drug use. Again, it is likely that there is overlap between the variables in this environmental domain and the other domains, which were entered into the model first. Environmental stress, such as discrimination, affects the individual's adjustment, which in turn, affects substance use [19, 67]. Environmental stressors may also

affect other domains, such as the parent-child relationship and the adolescent's peer associations. For example, adolescents who experience violence are more likely to model delinquent attitudes and associate with deviant peers in response to a difficult and stressful environment (as non-deviant peers are likely to reject them).

The similarities in the predictors of drug use in South Africa and the United States support the findings of other cross-cultural research [17], which suggest the importance of environmental stressors in the adolescents' drug use. The environmental stressors dimension may be of even greater significance in South Africa than the United States, since crime has continued to increase in South Africa, the country has been troubled economically, and has undergone major political transitions (i.e., from apartheid), and social services have not been able to deal with the increasing rise of HIV/AIDS and AIDS-related violence in South Africa. Future research should try to include other aspects of environmental stress, and assess their relationships with adolescent drug use and other problem behaviors.

Limitations

First, the work of True and his associates [71] notes the importance of genetic or the interaction between genetic and family environmental factors as related to drug behavior. Future studies might include research that focuses on the contribution of genetic influences and their interactions with the environment. Second, the study is cross-sectional; therefore, caution is warranted in making causal interpretations. It is also possible that the relationships obtained in the study are reciprocal. Nevertheless, the findings support our hypothesized model, based on longitudinal research conducted in the United States.

Implications

Our findings demonstrate that each of the psychosocial domains uniquely contributed to adolescent drug use in both South Africa and the U.S., despite the fact that there are major differences between the two countries. Since personal attributes and peer substance use constitute the majority of the explained variance in adolescents' drug use, intervention programs should be designed to target risk factors within these domains. However, reducing discrimination and violence, and trying to facilitate positive parent-child relationships through social policy may also be worthy targets of interventions which can result in a lessening of adolescents' drug involvement. Translational research is in order to identify those risk factors most amenable to change.

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Table 1
Sources and Reliabilities of the Scales

Measure (No. of items)	Sample Item	Source	Alpha
Adolescent Personal Attributes			
Delinquency (5)	How often have you gotten into a serious fight at school or work? (1=never, 5=five or more times)	[44]	0.63
Depressive Mood (5)	Over the last few years, on average, how much were you bothered by feeling no interest in things? (1=not at all, 5=extremely)	[45]	0.68
Rebelliousness (5)	When rules and regulations get in the way, you sometimes ignore them. (1=false, 4=true)	[46]	0.52
Tolerance of deviance (6)	How wrong do you think it is to fake a school excuse note from home? (1=very wrong, 4=not wrong)	[47]	0.81
Peer			
Drinking (1)	How many of your friends drink alcohol at least once a week? (1=none, 4=most)	[26]	—
Marijuana (1)	How many of your friends have ever used dagga? (1=none, 4=most)	[26]	—
Other illegal drugs (1)	How many of your friends have ever used other illegal drugs like cocaine, crack, heroin, mandrax, ecstasy? (1=none, 4=most)	[26]	—
Smoking (1)	How many of your friends smoke cigarettes on a daily basis? (1=none, 4=most)	[26]	—
Parental Attributes			
Drug Use			
Maternal smoking (1)	How many cigarettes does your mother usually smoke? (1=none, 6=more than 1 pack a day)	[26]	—
Maternal drinking (1)	How often does your mother usually drink alcohol? (1=never, 5=3 or more drinks a day)	[26]	—
Maternal marijuana use (1)	How often does your mother use dagga/hashish? (1=never, 5=once a week or more)	[26]	—
Paternal smoking (1)	How many cigarettes does your father usually smoke? (1=none, 6=more than 1 pack a day)	[26]	—
Paternal drinking (1)	How often does your father usually drink alcohol? (1=never, 5=3 or more drinks a day)	[26]	—
Paternal marijuana use (1)	How often does your father use dagga/hashish? (1=never, 5=once a week or more)	[26]	—
Child Rearing			
Maternal rules (6)	Does your mother (or female guardian) have definite rules about telling her your whereabouts when you are not home? (1=yes, 0=no)	[26]	0.61
Maternal child-centeredness (5)	She likes to talk with you and be with you much of the time. (1=not at all true, 4=very true)	[48]	0.84
Maternal identification (3)	How much do you admire your mother? (1=not at all, 5=in every way)	[26]	.70
Paternal rules (6)	Does your father have definite rules about telling him your whereabouts when you are not home? (1=yes, 0=no)	[26]	0.76
Paternal child-centeredness (5)	He gives you a lot of care and attention. (1=not at all true, 4=very true)	[48]	0.87
Paternal identification (3)	How much would you like to be the kind of person your father is? (1=not at all, 5=in every way)	[26]	0.84
Environmental Stressors			
Hunger (1)	How often do the people in your household go hungry or have no food to eat? (1=never, 4=often)	[49]	—
Amenities (7)	Does your house have electricity? (1=yes, 0=no)	[49]	—
Violence towards subject (5)	How often has someone held a weapon, like a club, gun, or knife to you? (1=never, 5= 5 or more times)	[17]	0.58
Discrimination (4)	How much have you experienced discrimination because of your group membership at school? (1=not at all, 4=very much)		0.64

Table 2
Correlations Between Psychosocial Factors and Adolescent Frequency of Illegal Drug Use (N=1468)

Domain	Pearson Correlations
<i>Demographic Factors</i>	
Age	.17 ***
Gender (Male)	.08 ***
<i>Personal Attributes</i>	
Delinquency	.27 ***
Depression	.08 **
Rebelliousness	.09 ***
Tolerance of deviance	.26 ***
<i>Peer Factors</i>	
Peer drinking	.29 ***
Peer marijuana use	.39 ***
Peer use of other illegal drugs	.39 ***
Peer smoking	.22 ***
<i>Parental Drug Use</i>	
Maternal smoking	.10 ***
Maternal drinking	.06 *
Maternal marijuana use	.07 **
Paternal smoking	N.S.
Paternal drinking	.06 *
Paternal marijuana use	.06 *
<i>Parental Child Rearing</i>	
Maternal rules	-.11 ***
Maternal child-centeredness	-.17 ***
Maternal identification	-.14 ***
Paternal rules	-.07 **
Paternal child-centeredness	-.10 ***
Paternal identification	-.07 **
<i>Environmental Stressors</i>	
Hunger	N.S.
Amenities	N.S.
Violence towards the subject	.29 ***
Experienced discrimination	.14 ***

* p<.05;

** p<.01;

*** p<.001

Table 3
Psychosocial Domains Predicting Adolescent Drug Use: Hierarchical Regressions (N = 1468)

Domains of Predictors	Variance Accounted for in Adolescent Drug Use		
	R ² without control on other domains	Δ R ²	Total R ²
<i>Step 1</i>			
Demographic data	.05**		
Personal Attributes	.14**	.15**	.15**
<i>Step 2</i>			
Peer Factors	.24**	.13**	.28**
<i>Step 3</i>			
Parental Drug Use			
Parental Child Rearing	.07**	.02*	.30**
<i>Step 4</i>			
Environmental Stressors	.11**	.02*	.32**

* Notes. p < 0.05;

**
p < 0.001