The Relationship between Future Orientation and Street Substance Use among Texas Alternative School Students

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Self-reported substance use data were collected from 963 alternative school students in grades 7–12 who were surveyed through the Safer Choices 2 study in Houston, Texas. Data were collected between October 2000 and March 2001. Logistic regression analyses indicated that lower levels of future orientation was significantly associated (OR = 0.88, 95% CI = 0.81–0.97) with thirty-day substance use after controlling for age and gender. In addition, lower levels of future orientation was found to have a significant association with students' lifetime substance use (OR = 0.93, 95% CI = 0.87–.99) after controlling for age, race, and gender. While the relationships tested in this study are exploratory, they provide evidence for an important connection between future orientation and substance use among adolescents attending alternative schools. (Am J Addict 2005;14:478–485)

Despite the recognition of its major physiological and psychological consequences, alcohol and other drug (AOD) use remains a significant problem in the United States. The National Household Survey on Drug Abuse (NHSDA), which generates self-report survey estimates of substance use among household members ages 12 and older in the contiguous United States, reported in 1999 that 51% of respondents had used alcohol and 6% were current illicit substance users.[1] Adolescent substance abuse is a critical problem facing an increasing number of

families. Abuse and subsequent treatment and recovery often have negative effects on students' educational experience.

Dryfoos[2] catalogs a wide range of possible negative consequences of substance abuse and delinquency, including short- and long-term impairments in the domains of physical and psychological well-being. Given knowledge about the dangers of illicit substance use and the high prevalence of use, we are faced with addressing the conundrum of why substance use persists despite its undesirable consequences. A need has been identified to better understand what young people believe about drugs if credible and relevant interventions are to be developed.

Although individuals can derive short-term gratification from substance use, the behavior often leads to major long-term negative consequences, such as addiction, loss of employment, financial hardship, familial estrangement, and legal problems.[3] A possible explanation for this behavior is that substance users view these "negative outcomes" as inevitable, even without the use of illicit drugs. That is, the likelihood of future success is perceived to be so unachievable that the use of illicit drugs, with at least their positive short-term effects, is preferred to life without the use of illicit drugs. Because present behavior results from past experiences or future intentions, all persons everywhere are, according to Doob,[4] oriented periodically toward the past, the present, and the future. However, the meaning, manifestation, and emphasis on the three orientations differ from culture to culture, as well as the factors that determine individual differences in these orientations. To date, however, few scholarly works have explored the relationship between future orientation and the use of illicit drugs.[5–13]

People are often described through time orientation. For example, some people are referred to as "dwelling in the past" (past-oriented), others talk about "living for now" (present-oriented), and still others are considered to be "always planning for tomorrow" (future-oriented). Although past and present time orientations are undoubtedly important from a theoretical point of view, many researchers interested in the determinants of current behavior have more often turned to the future-orientation construct. An early study by Smart,[5] for example, compared the differences in future time perspective (FTP) between 33 alcoholics and 33 social drinkers surveyed through the Alcoholism and Drug Addiction Research Foundation. He found that alcoholics showed less extensive perspectives than the social drinkers because "...the alcoholic perceives such a bleak future that he refrains from extending it."[3]

Sattler and Pflugrath[6] examined FTP by comparing early-stage alcoholics (n = 50), late-stage alcoholics (n = 50), and non-alcoholics (n = 50). The findings indicated that late-stage male alcoholics viewed their future as less structured and predictable than both early-stage male alcoholics and non-alcoholic males. Petry et al.[7] investigated whether heroin addicts (n = 34) demonstrated shortened time horizons and decreased sensitivity to future consequences of their behavior compared to non-substance users (n = 59). The results showed that the heroin addicts were significantly less likely to systematically organize events in the future, suggesting that shortened time horizons may explain the persistent use of drugs despite the known negative consequences associated with drug use. Using the Zimbardo Time Perspective Inventory (ZTPI), Keough, Zimbardo, and Boyd[9] found that FTP was negatively related to reported substance use across 2,727 student participants from fifteen samples. Thus, existing evidence suggests that FTP predicts substance use.

Researchers have also looked at substance use and dependence from a more socioeconomic perspective. According to

Bickel, Marsch, and Carroll,[14] there has been an increase over the past ten years of researchers applying "behavioral economics" to the study of drug use. Behavioral economics examines conditions that influence the consumption of commodities and provides several concepts that may be instrumental in understanding drug dependence, such as adult time orientation. To conceptualize addiction, Bickel and Marsch[15] recently looked at ten studies that have explored the relationship between delay discounting and drug dependence. Using a behavioral economics approach, they examined how delay discounting may provide an explanation for the inclination or failure to control one's dependence on drugs. Some evidence suggest that drug dependence could be considered as a joint function of the willingness to pay the price for drugs relative to the urge or desire for the drug. The authors noted, for example, "that if a drug is discounted to a large extent, then by definition, there is limited inter-temporal substitution between the present and future consumption."[15(p82)] Bickel and Marsch cautioned, however, that we do not know whether children/adolescents who discount delayed rewards more are more likely to become drug dependent relative to those who delayed rewards to a lesser extent.

Little research exists to guide the development of programs that encourage health-promoting and life-enhancing behaviors among vulnerable children/adolescent populations. Although researchers have been concerned with the intensity and frequency of adolescent drug use—and certainly with its health impact—their more general focus has been on the timing of the initiation of various activities. Previous research shows that FTP is related to positive health practices in both adolescents and adults. Hence, future orientation is an important concept for understanding substance use among juvenile populations.

With the exception of an early study by Barndt and Johnson,[8] few studies have explored future orientation with delinquent populations. Barndt and Johnson conducted a study to test the hypothesis that delinquent boys would have shorter time orientations than boys who were not considered delinquent (ie, no court history). They studied a group of 26 delinquent boys and a control of 26 non-delinquent boys; other than delinquency, they were considered to be fairly comparable in age, IQ, academic achievement, and socioeconomic status. The respondents were asked to "finish a story that was started by the researchers." The stories were recorded, analyzed, and scored into six categories in terms of the length of the time it took to complete the story. Their findings indicated that the delinquent boys produced stories with shorter time spans than the control group, and 15 of the 26 stories told by the delinquent respondents ended with crime themes or unhappy endings. The authors concluded that short-time perspective is part of the pattern of delinquency but felt that cause and effect could not be demonstrated.

The exploration of perceived future worth is critical among juvenile populations because of the increased potential for intervention. We need to expand the research to include at-risk populations to be able to continue to evaluate instrumentation to gather data that will enhance our intervention strategies. That is, interventions to address perceived hopelessness and future disorientation are potentially more successful if identified before adulthood. The current research extends the existing literature by examining the relationship between substance abuse and future orientation among a sample of alternative high school students.

RESEARCH METHODS

Study Sample

This study presents a secondary analysis of data collected from the Safer Choices 2 study between October 2000 and March

2001. Safer Choices 2 is a human immuno-deficiency virus (HIV), sexually transmitted disease (STD), and pregnancy prevention program being evaluated in ten alternative schools in Houston, Texas. Baseline data collection included a cross-sectional survey of 974 students between seventh and twelfth grades in ten alternative schools located in the inner city of Houston, Texas.

Subjects were recruited in the ten schools with a target sample size of fifty students per school. Incentives (small gift certificates) were given for returning signed parental consent forms, regardless of whether the parent consented or declined participation in the survey.

Survey Administration

Students were surveyed using an Audio Computer-Assisted Self Interview (ACASI) program. The utilization of computer data collection procedures has been shown to be a dependable methodology for obtaining confidential sensitive information on risk-taking. In addition, the use of audio to present questions to subjects is useful in obtaining information from participants with low literacy levels.

In this specific study, laptop computers presented the participants with the questions visually, while a pre-recorded voice-over read through the questions. To further ensure confidentiality and to help participants concentrate, all participants wore headphones during the survey. All data collection was administered on school grounds during regular school hours in a quiet location, such as the library or an empty conference room. Project staff members provided participants with a brief instruction on how to use the computer-based questionnaire. In addition, participants were provided with practice questions to gain self-efficacy and familiarity in answering questions.

The ACASI program allowed for the use of filter questions to assist in forming skip patterns. This was used to exclude the presentation of sensitive questions (eg, sexual history and substance use) to subjects who had not engaged in such behaviors. For example, if a subject indicated he/she had never had used drugs, that subject was not presented with more detailed questions regarding marijuana use, cocaine use, etc.

To protect confidentiality, a unique identification number was assigned to each respondent. Active parental and student consents were secured prior to administration of the questionnaire. The study was approved by the institutional review board of the University of Texas Health Science Center at Houston.

Measures

Substance Use. Students were asked if they had ever used various drugs; if they responded yes, they were then asked about lifetime and past month use of a list of drugs, including marijuana, cocaine, codeine, inhalants, heroin, amphetamines, hallucinogens, steroids, or fry/dip (marijuana or tobacco laced with embalming fluid and phencyclidine. From these questions, two variables were formed: one for lifetime substance use and one for substance use in the past month. If a subject indicated he/she had ever tried drugs, he/she was classified as having used during his or her lifetime, and if he/she indicated any use of the listed drugs during the past thirty days, he/she was classified as having used drugs in the past month.

For both the lifetime and past month substance use variables, a series of bivariate logistic regression analysis were conducted. Future orientation, age, gender, and race/ethnicity were entered singly into the regression models for each of the dependent variables. Variables with significant bivariate associations at the 0.05 level were then entered simultaneously into regression

models predicting lifetime and past-month substance use.

Future Orientation. Future orientation was operationalized by summing responses to three questions:

1. "I have plans for my future"
2. "I have plans for things I'll be doing a year from now"
3. "I am doing things now that will help me in the future."

Responses were on a four-point scale, ranging from "strongly disagree" (scored as 0) to "strongly agree" (scored as 3). Cronbach's alpha for the items was 0.76, indicating acceptable reliability. The scale had a mean of 7.0 and a standard deviation of 2.09.

RESULTS

Subjects who did not respond to one or more of the future orientation questions were deleted from the analyses; a total of 11 subjects were deleted, reducing the total sample size to 963. Descriptive statistics and logistic regression analyses were conducted in order to examine the association between future orientation and substance use. Type 1 error (alpha) was maintained at 0.05 in all cases. As shown in Table 1, the students who participated were predominantly female (58%) and Latino (59%). Sixty-nine percent were between the ages of 14 and 17, and over half (51%) reported lifetime and past month substance use (28%). The three most prevalent drugs of abuse were marijuana, cocaine, and opiates/codeine (see Table 2). Nearly half (49%) reported lifetime marijuana use, while 26% reported having used it within the thirty days preceding the interview. Nearly 20% reported opiate/codeine use, while 8% reported usage in the past thirty days. Approximately 14% reported lifetime cocaine use, while nearly 4% reported usage in the past thirty days.

TABLE 1. Demographic Characteristics of Alternative School Students, Houston, Texas 2001 (N = 963)

	N	%
Gender		
Male	401	41.64
Female	562	58.36
Race/ethnicity		
Latino	569	59.09
African-American	301	31.26
Other	93	9.66
Age		
12–13	113	11.7
14–15	315	32.7
16–17	351	36.4
18–20	184	19.1

Logistic Regression Analysis

A series of bivariate logistic regressions were conducted, predicting lifetime and past substance use from demographic variables and the future orientation score. Table 3 displays the association between future orientation and sociodemograpic factors and substance use. Variables significant at the 0.05 level (for the Wald statistic)

TABLE 2. Lifetime/Past-Month Substance Use Rates among Alternative School Students, Houston, Texas, 2001 (N = 963)

Drug	Lifetime Rate (%)	Past-Month Rate (%)
Marijuana	469 (48.70)	253 (26.27)
Cocaine	133 (13.91)	38 (3.95)
Opiates/codeine	199 (20.66)	80 (8.31)
Inhalants	33 (3.43)	2 (0.21)
Heroin	10 (1.04)	0
Amphetamines	23 (2.39)	4 (0.42)
Fry/dip	82 (8.52)	14 (1.45)
Steroids	6 (.62)	3 (0.31)
Hallucinogens	50 (5.19)	10 (1.04)
Substance use	493 (51.19)	274 (28.45)

TABLE 3.   Bivariate Predictors and Multivariate Logistic Regression for Future Orientation and Monthly/Lifetime Substance Use

	Monthly			Lifetime		
	OR	95% CI	*p*	OR	95% CI	*p*
Bivariate predictors						
Future orientation	0.92	(0.86–0.98)	**0.013**	0.93	(0.88–0.99)	**.027**
Gender	1.86	(1.40–2.47)	**0.001**	1.61	(1.24–2.09)	**0.001**
Age	1.26	(1.15–1.36)	**0.0001**	1.40	(1.29–1.51)	**0.001**
Race/ethnicity			.466			**.0167**
Black vs. Hispanic	0.84	(0.61–1.15)	0.284	0.71	(0.54–0.95)	**0.019**
Other vs. Hispanic	1.09	(0.68–1.75)	0.720	1.27	(.81–1.98)	0.292
Multivariate logistic regression predicting substance use from student future orientation						
Future orientation	0.88*	(.81–.97)	**0.01**	0.93†	(.87–.99)	**.026**

Bolded values significant at $p < 0.05$.
*Controlled for age and gender.
†Controlled for gender, age, and race/ethnicity.

were then retained for multivariate analyses. Specifically, this resulted in the retention of age for both lifetime and past-month substance use models and gender for lifetime use (the likelihood ratio test for race was non-significant for race predicting monthly or lifetime substance use). Those with high future orientation were less likely to report monthly and lifetime substance use. Males had significantly elevated odds of reporting monthly and lifetime substance use. In addition, after controlling for gender, age, and race/ethnicity, lower levels of future orientation were significantly associated with thirty-day substance use (OR = 0.88, 95% CI = 0.81–0.97, $p < 0.01$) and lifetime substance use (OR = 0.93, 95% CI = 0.87–.99, $p = 0.02$). Goodness of fit tests indicated that the multivariate models fit the data (Hosmer-Lemeshow χ^2 (8) = 3.74, $p > 0.05$ for monthly drug use, and χ^2 (8) = 11.05, $p > .05$ for lifetime drug use).

Subjects were asked the number of times they had used each substance they had indicated using in the past month (except alcohol). These were summed to form a count of total substance use in the past month. A Poisson regression predicting total use from future orientation and age was then performed. Results indicated that future orientation remained significant in the presence of age ($p < 0.05$), giving support to the idea that future orientation may indeed be protective of chronic and not exploratory substance use.

DISCUSSION

In the current study, we explored whether any significant differences in future orientation could be discerned between students who reported substance use compared to those who did not. Logistic regression analyses indicated that lower levels of future orientation was significantly associated with thirty-day substance use, even after controlling for age and gender. In addition, lower levels of future orientation significantly associated with lifetime substance use after controlling for race, gender, and age. Students with high future orientation were significantly less likely to report substance use than those with low opinions of their future.

These findings are consistent with previous research[5–7] that identified recent drug-using individuals as being more likely to have low future expectations than those who do not report recent substance use.

Two limitations to this study should be noted. First, because the data were cross-sectional, we were unable to assess the directionality of effect. Consequently, we do not know if less future orientation leads to substance use or if increased substance use causes less future orientation. This limitation highlights the need for longitudinal studies on alternative school populations to examine the exact nature of the causal relationship. Second, alternative students in the current study were sampled from one county in Texas. Larger studies that can more precisely estimate the prevalence of illicit substance use among alternative school students across a broader area and that can identify risk factors for use are also needed.

To date, no research has been conducted on the link between future orientation and substance use among alternative school students. While the relationships tested in this study are exploratory, they provide evidence for an important connection that needs further attention. We know from studies conducted among "mainstream" adolescent populations that participation in substance use is related to a myriad of mal-adjusted behaviors. The results reported here have potential implications for substance use prevention efforts aimed at "at-risk" populations, such as students attending an alternative school. Such programs might especially attempt to alter students' general temporal orientations so as to discourage substance use. A student's future orientation might be strengthened by emphasizing not only the negative consequences associated with substance use, but also by emphasizing the challenges one may face attempting to finish school while at the same time engaging in substance use or abuse. By highlighting these negative consequences, a substance prevention abuse program might foster a greater tendency to actively associate one's current behavior with future states and goals, thereby increasing not only future orientation but also the current use of substances.

To date, however, we do not know the severity of this problem among alternative school youth who are more at-risk compared to their counterparts in regular schools. Based on our understanding of adolescents in alternative school programs, we hypothesize that adolescents who are experiencing intense personal, interpersonal, and environmental conflicts are more prone to self-medicate with drugs. Consequently, alternative school students may be more apt in taking extreme risks with drugs because of problems that affect their future outlook: a lack of knowledge, low social support, and understaffed community resources. Because the rates of substance use are extremely high among alternative school students, we recommend that a combination of mental health surveillance and drug treatment programs be made more accessible to alternative school students.

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