A LONGITUDINAL STUDY OF DRUG INVOLVEMENT IN MEXICAN AMERICAN AND WHITE NON-HISPANIC HIGH SCHOOL DROPOUTS, ACADEMICALLY AT RISK STUDENTS, AND CONTROL STUDENTS

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ABSTRACT

Explored drug involvement in a longitudinal sample of Mexican American and White non-Hispanic school dropouts, students in school with serious academic problems (academically at risk), and matched general sample of students (controls). Academic status was related to drug involvement at initial and four year follow-up assessments; dropouts and at risk youth were more drug involved than controls. At follow-up, gender differences were noted with males being more drug involved than females. At neither point was ethnicity related to drug involvement. Although general distributions of drug use remained reasonably stable across groups, considerable change into and out of high drug involvement was found. Consistent with peer cluster theory (Oetting, Beauvais 1987), this change was predicted by peer drug use and peer requests of the participant to use drugs and to a lesser extent by the individual's willingness to ask others to not use drugs. This suggests the importance of peer group processes on the naturalistic development and reduction of high drug involvement and of studying changing peer processes in order to better understand change in drug involvement over time.

INTRODUCTION

Adolescent drug use has been monitored nationally since the 70's via large epidemiological studies such as the Monitoring the Futures Survey (Johnston, O'Malley, Bachman 1996), which generally have shown drug use to decrease in the 80's, although recent reports have shown increases for some substances. These surveys provide a general, national picture of adolescent drug use but are limited in at least three significant ways.

First, they do not include sufficient numbers of minority youth to adequately assess drug trends within these minority communities. In one study based on aggregated data from minority groups over several years of the Monitoring the Futures Survey (Bachman, Wallace, O'Malley, Johnston, Kurth, Neighbors 1991), it was reported that Hispanics had higher drug use rates than Blacks and slightly lower rates than White youth. However, such aggregated data collapse across possible trends within groups over time and yield a less than clear understanding of trends within specific minority groups over time or between ethnic groups at a given point in time.

Second, most surveys are completed by students in-school and, therefore, do not include high school dropouts. In turn, this leads to at least three problems. For one, the overall adolescent drug use rates may be miss-estimated due to the missing data from dropouts, who as a group tend to show greater drug involvement (Beauvais, Chavez, Oetting, Deffenbacher, Cornell, 1996; Fagan, Pabon 1990; Mensch, Kandel 1988; Swaim, Beauvais, Chavez, Oetting Forthcoming). This problem is compounded for estimates of drug use in

minority groups if dropout rates differ by ethnic group and if drug use within those groups is related to dropping out of school. For example, if dropout rates are 10-15 percent for White non-Hispanic (White American) youth and approaching 50 percent for Mexican American youth (McMillen, Kaufman, Whitener 1994; Rumberger 1991), then estimates of drug use for the two groups based on in-school samples will be skewed differently. For example, in a study of 8th and 12th graders (Chavez, Swaim 1992), Mexican American 8th graders had higher drug use rates than White 8th graders, whereas Mexican American 12th graders had lower rates than Whites. This difference appeared attributable to the differential dropout rates for the two groups (i.e., more drug involved Mexican American youth had dropped out by 12th grade leaving a less drug-using group of Mexican American students to be sampled in 12th grade). Moreover, both Mexican American and White dropouts appear to have higher levels of alcohol, cigarette, marijuana and other drug use as well as higher levels of violence, victimization, crime, and delinquency (Beauvais et al 1996; Bruno, Doscher 1979; Chavez, Edwards, Oetting 1986; Chavez, Oetting, Swaim 1994; Edwards 1990). Thus, estimates of drug use and other behavior can be influenced significantly by dropout rates generally or differential dropout rates within groups to be compared, such as ethnic groups. Finally, dropouts appear to be an at risk group in their own right, but data on them are not being gathered. Such information is needed in order to understand their drug use patterns and from which to design prevention and intervention plans.

Third, the large surveys are cross sectional rather than longitudinal in design. While they allow for the association of risk and protective factors with drug use at a given point in time, they do not provide a clear view of the progression of drug use as youth move through adolescence into adulthood or of variables that might predict changes over time. Kandel's longitudinal work (Kandel 1978, 1985; Kandel, Raveis 1989; Yamaguchi, Kandel 1984a, 1984b) on a large sample of high school students in New York suggested that both family and peer processes are correlated with drug use over time. However, the ethnic composition of this sample is difficult to ascertain, and follow-up does not include dropouts. Maddahian, Newcomb and Bentler's (1986) longitudinal study included several minority groups and revealed significant ethnic differences in substance use, except for "hard drugs," and the authors suggested that there was a larger correlation between risk factors and a composite drug use score for Whites than for Hispanics or Asians. Another longitudinal study of Latino youth (Apospori, Vega, Zimmerman, Warheit, Gil 1995; Vega, Zimmerman, Warhert, Apospori-Zogratos, Jackson 1993) suggested that there were differential effects of risk factors on substance use for different ethnic/racial groups. Findings from this study are, however, related to Latinos in the 6th and 7th grades, and the extent of school dropouts surveyed is not elaborated upon. In general, such longitudinal studies provide some tracking of change in drug use over time and suggest possible contributors to such change; however, few provide extensive data on minority youth and school dropouts, both of which are important for reasons established previously.

The present paper addresses these issues. It provides data on a large, four-year longitudinal study of dropouts, academically at risk students, and a general school sample of Mexican American and White American youth. This project attempts to assess the relationship between substance use and dropping out of school. The longitudinal component is meant to consider the long term consequences related to various educational choices made during high school. Samples in both wave 1 and wave 2 were of sufficient size to allow for analysis of changes in drug use and to assess the predictors of change via logistic regression procedures. Data are from an ongoing project in three communities in the Southwestern US, one of 30,000, another of 90,000, and the other of 350,000, selected to represent different types of communities in which Mexican American youth live. Due to reductions in funding, follow-up data were not collected in the community of 30,000, so data reported in this study are from the two larger communities. Since this study did not involve stratified random sampling over wide geographic area, findings are potentially confounded by the socio-economic, cultural, and educational characteristics of these communities. However, within this limitation, comparisons between groups are reasonably unconfounded as groups were matched and drawn from the same schools.

METHOD
Participants
At the first assessment, the sample consisted of 2103 (900 male and 633 female Mexican American and 321 male and 249 female White American) adolescents. Because of potential differential return at follow-up, dropouts were also oversampled initially by 20 percent. Of remaining participants (see procedure section), one third were school dropouts, one third were a sample of students matched to dropouts on age, gender, ethnicity, grade level, school, and grades (i.e., a group still in school but with serious academic problems or academically at risk students), and another third consisted of a random sample of students who matched dropouts on gender, age, ethnicity, grade level, and school (i.e., a general comparison or control group). The follow-up return was 48 percent (n = 1018). Of the 52 percent of those who were not retained at follow-up, 97 percent had not been contacted, with only 3 percent who were contacted but refused to participate; that is, the vast majority of those not returning data were due to the inability to locate them rather than their declining to participate. Percent return by group was as follows: 1) Mexican American male dropouts (37%), at risk (42%), and control (56%); 2) Mexican American female dropouts (42%), at risk (55%), and control (63%); 3) White American male dropouts (39%), at risk (38%), and control (52%); and 4) White American female dropouts (53%), at risk (64%), and control (78%). Differential return was found across groups, $\chi^2(11, N=1018) = 47.70$, $p<.001$, due primarily to greater return by controls and females. However, return rates in this sample are as high or higher than those

typically found in this type of research, and greater returns for both females and controls are often reported (Newcomb, Bentler 1988). Occasionally, a participant would opt out of or be deleted from the project (e.g., due to incomplete responding) after the participant's matched cohort had been surveyed. In these cases, incomplete matches were retained in the sample only if the dropout remained in the cohort; otherwise, incomplete matches were deleted. Participants received $10-25 for completion of the survey with higher amounts reflecting the greater travel and difficulty in arranging for the survey.

Instruments

Demographic, drug use, and peer cluster theory variables were embedded in a larger survey which took approximately one and a half hours to complete. Nearly all surveys were completed in English with less than 1 percent completed in Spanish.

Demographic Information. Gender, age, graduation from high school or acquisition of a GED, involvement in a steady relationship, and employment status were based on self-reports on a demographic section of the survey. Ethnicity, grades, and academic status (see procedure section) were determined from school records.

Drug Use. Current drug use was assessed by the Clinical Drug Assessment Scale from The American Drug and Alcohol Survey^{TM} (Oetting, Beauvais, Edwards 1990). This scale assesses involvement with alcohol, marijuana, inhalants, cocaine, heroin, uppers, downers, and hallucinogens and alcohol intoxication. Current drug involvement was assessed by the following questions regarding each drug: a) frequency of recent use—How often in the past month have you used ___ ? (ratings of 0, 1-2 times, 3-9 times, 10-19 times, 20 or more times); b) intensity of use—In using ___ are you a... (ratings of nonuser, very light user, light user, moderate user, heavy user, very heavy user); and c) method/style of use, which varied somewhat by type of drug due to the different ways in which drugs are ingested (e.g., for marijuana—How do you use marijuana? (options of "I do not use it," "Just take a few puffs," "Smoke a joint or two," "Eat it in something," "Use a 'bong' or other equipment," "Use sensimilla or hashish," "Stay high nearly all the time")). Ratings for each drug are reliable (Oetting, Beauvais 1983, 1990), and self-report drug measures involving questions

in this study and questionnaires similar to them have been shown to be reliable (Barnea, Rahav, Teichman 1987; Marquis, Duan, Marquis, Polich 1981; Oetting, Beauvais 1990). Scale scores are then used to identify "cut scores" which are combined to derive three classifications of current drug involvement— *Low/No Drug Involvement, Moderate Drug Involvement,* and *Heavy Drug Involvement* (Oetting, Beauvais 1983, 1990). The *Low/No Drug Involvement* category describes youth who are not currently using any drug and have not been drunk within the last 30 days; that is, they may have consumed alcohol, but not to the point of intoxication, and may have experimented with drugs in the past, but are not currently using any drug. The *Moderate Drug Involvement* group includes youth not meeting the criteria for heavy drug involvement but who have used drugs within the last month or are becoming intoxicated on alcohol at least once monthly. These youth rate themselves as drug users, which suggests that they are likely to continue to use drugs, but they typically use drugs and abuse alcohol at parties or occasionally with friends rather than involving themselves in a substance use lifestyle. The *Heavy Drug Involvement* group is much more involved in a substance use lifestyle in which drugs are an important part of most social interactions with peers. They are using multiple drugs, are using one drug several times a week, or are drunk nearly every weekend and often during the week. These drug use involvement classifications are highly reliable because they are generated by computer algorithms rather than judges or raters. Supporting validity evidence is found in group differences on major drug use risk factors such as school and family problems, delinquency, peer deviance, anger, and sensation seeking (Oetting, Beauvais 1983, 1990; Oetting, Edwards, Kelly, Beauvais Forthcoming).

Variables Derived From Peer Cluster Theory. Peer cluster theory (Oetting, Beauvais 1987) posits that small clusters of peers play a significant role in determining and shaping attitudes and behaviors that lead to and away from drug use. For the purposes of this study, four such variables were defined. *Peer drug use* is a 4-item scale inquiring about how many of their friends drink alcohol, get drunk, use marijuana, and use drugs other than marijuana (ratings of none, 1 or 2, several, most of them). Alpha reliabilities at initial and follow-up assessments in this study were .88

and .87, respectively. *Peer requests to use* is a 9-item scale assessing how often the respondents' friends have asked them to use marijuana, glue or other "sniffing drugs," uppers, downers, cocaine, heroin, LSD or other hallucinogens, drink alcohol, and get drunk. Responses were rated on a 3-point scale (never, some, a lot), and alpha reliabilities were .86 and .84. *Peer request to stop* is a 5-item scale assessing peer barriers to or inhibition of drug use. It asked respondents how much their friends would try to stop him/her from drinking alcohol, getting drunk, using marijuana, using cocaine, and using PCP. Responses were made on a 4-point scale (a lot, some, not much, no), and alpha reliabilities were .89 and .86. *Your request to stop* involved the same five items and ratings as *peer request to stop* but inquires as to how much the participant would try to stop his/her friends from using those drugs. This scale was developed to assess the participant's role in inhibition of drug use in peer clusters and had alpha reliabilities of .88 and .87. These variables were significantly correlated, with peer use being positively related to peers asking the participant to use drugs (r=.62 and .65) and negatively related to the peers asking others to stop (r=-.54 and -.53) and the participant asking peers to stop (r=-.50 and -.51). In turn, peers asking the participant to use drugs was negatively correlated with peers asking others to stop (r=-.44 and -.45) and with the participant asking others to stop (r=-.42 and -.43), whereas the latter two variables were positively related to each other (r=.77 and .73). Although these scales were correlated, they were retained as separate scales because they reflected conceptually different, although correlated, theoretically derived variables that may have differential predictive power.

Procedure

Dropouts were defined by school staff as students in grades 7-12 who had not attended school for at least 30 days, had not transferred to another school, and had not contacted the school system about re-admission (Morrow 1986). Each month, a random sample of dropouts was drawn from all available dropouts. At risk students were drawn from the same school, grade, gender, ethnicity, and age as the dropout and were matched as closely as possible for to the dropout on grade point average. Grade matches were not always possible because many dropouts had

grade averages close to zero. At risk students thus were still in school but generally were in poor academic standing. Control students were randomly selected from a group of students who matched the dropout for school, grade, gender, ethnicity, and age. Control students thus were generally in good academic standing. Ethnicity was first based on ethnicity status in school records. If a student failed to self-identify as a member of that ethnic group on the survey, that student was replaced in the sampling frame.

Local professionals fluent in English and Spanish contacted youth and their parents. They first contacted potential participants. After the project was described, potential participants were asked if they wished to be involved. If they expressed interest and were over 18, they completed consent forms. If they were under 18, parents were contacted, the project was fully explained, and written parental consent was obtained. Only then was written consent of those under 18 obtained. These procedures led to low rates of refusal as only 4-6 percent of dropout groups and 5-8 percent of student groups had either parent or child refusal. Those who refused were replaced in the sampling frame by others matching their characteristics.

Following informed consent, arrangements were then made for an individual administration of the survey. Students completed the survey in a secure room at school during school hours, and dropouts either completed the survey in the same room at school or at another public building such as a library. The survey administrator gave participants the survey and answered general questions but did not see participant responses. When the survey was complete, the participant put it in a large envelope and sealed it personally. Based on the participant's choice, the survey was mailed to the research office either by the survey administrator or by the participant. These steps assured confidentiality as the administrator did not have access to the completed survey.

Accuracy and reliability of data were assured as surveys were subjected to 40 computer checks for inconsistency or exaggeration (e.g., endorsing a fake drug, claiming daily use of three or four drugs). Only 2 percent of initial surveys failed either review and were not replaced.

Four years after the first assessment, follow-up began with an average time to

Table 1: Percent Substance Involvement at Initial and Follow-up Assessments

Level of Drug Use	Assessment	Gender	Dropout		At Risk		Control	
			Mexican American	White American	Mexican American	White American	Mexican American	White American
No/minimal	1st	Male	25	38	44	46	70	69
		Female	36	30	51	38	66	76
	2nd	Male	31	33	44	46	57	67
		Female	51	57	58	53	67	65
Moderate	1st	Male	42	35	33	33	21	27
		Female	42	39	29	50	26	19
	2nd	Male	30	29	29	21	28	23
		Female	32	29	33	30	22	29
High	1st	Male	33	27	23	21	9	4
		Female	21	30	20	13	7	5
	2nd	Male	38	38	27	33	15	10
		Female	17	14	9	18	11	7

Note: 1st Assessment = Initial Assessment, 2nd Assessment = Follow-up Assessment.

completion of the follow-up survey of 4.34 years. Follow-up contact was first attempted through the address given at the first assessment. If this failed, staff contacted three people (e.g., parents, relatives, good friends) whom the participant indicated at the time of informed consent would always know where they were. If these efforts failed, public records such as phone books, motor vehicle records, etc. were checked to locate an address. Once the individual was contacted and gave his/her consent, survey administration was parallel to the first administration.

RESULTS
Preliminary Analyses
A 3 (Academic Status) x 2 (Ethnicity) x 2 (Gender) ANOVA on participant age for the initial sample revealed significant main effects for gender and ethnicity, $F (1, 2076) = 4.51$ and 9.03, $p < .05$, such that males (M=16.64) were slightly older than females (M=16.51), and White Americans (M=16.67) were slightly older than Mexican Americans (M=16.48). No other main or interactions effects were significant. A similar ANOVA on initial ages of the follow-up sample yielded a single significant effect, the interaction between gender and ethnicity, $F (1, 994) = 7.21$, $p < .01$, with Mexican American males and females (M=16.43 and 16.54) and White American females (M=16.46) being slightly younger than White American Males (M=16.77). Because the magnitude of the largest age differences among groups was three to four months, age differences were not

judged as a meaningful developmental confound.

A 3 (Academic Status) x 2 (Ethnicity) x 2 (Gender) ANOVA on grades revealed, as would be expected, a significant main effect for academic status, $F (2, 1962) = 410.78$, $p < .001$, with controls (M=2.82) having higher grades than either at risk students (M=1.53) or dropouts (M=1.10), who also differed from one another. Although none of the interactions were significant, gender and ethnicity main effects were $F (1, 1962) = 14.54$ and 36.53, $p < .001$, respectively, with females having higher grades than males (M=1.91 vs. 1.72) and White American youth having higher grades than Mexican American youth (M=1.97 vs. 1.66). These grade differences were reflective of expected differences in academic status groups and of gender and ethnicity differences often found in high school samples.

Potential bias in the drug use distribution of the follow-up sample was assessed by comparing the initial level of drug use of those retained in the follow-up with those not retained in the follow-up. Of the follow-up sample, 18 percent were heavily drug involved, 32 percent moderately involved, and 50 percent minimally or not drug involved, whereas involvement for those not retained in the follow-up was 21 percent heavy, 32 percent moderate, and 48 percent low involvement. These small differences in distributions were not significant, $\chi^2 (2, N=2103) = 4.90$, suggesting that the drug use of those retained in the follow-up was not significantly different from their

peers who were not retained and that the follow-up sample is reasonably unbiased with regard to the distribution of initial drug use.

Primary Analyses

The percentage of each group at each level of drug use at the initial (1st) and follow-up (2nd) assessments are summarized in Table 1. A 3 (Academic Status) x 2 (Ethnicity) x 2 (Gender) x 3 (Drug Involvement) log linear analysis was performed at each assessment with similar results. Drug involvement was a significant factor in the initial assessment model only when interacting with academic status. As seen in Table 1, dropouts and academically at risk students had the highest level of involvement; controls had the least. In the follow-up log linear model, drug involvement was a significant factor when interacting with academic status and when interacting with gender. The relationship with academic status was the same as found at the initial assessment, with a slightly less pronounced difference between at risk and control students. Table 1 shows a higher level of drug involvement for males than females at follow-up. Thus, drug involvement was primarily related to academic status with gender differences noted at follow-up.

Inspection of Table 1 also shows considerable stability in the percent of youth at each level of drug use at initial and follow-up assessments. For example, percentage of high involvement at initial and follow-up assessments were identical for dropouts (28%), and were 7 percent and 12 percent for controls and 20 percent and 20 percent for academically at risk students, respectively. As another example, low or minimal use at initial and follow-up assessments reflected reasonable stability for controls (70% vs. 63%), at risk (46% and 50%), and dropouts (31% and 42%). In general, the percentage of youth involved at each level of drug involvement remained reasonably stable over time, with the exceptions of a general increase in the level of drug involvement for males and of a decrease for females, especially those within dropout and at risk groups. These findings do not, however, address the possibility that while group rates may stay generally the same, there may have been change in group membership, with youth moving into a level of drug use being offset by a roughly equal number leaving that level of drug involvement. However, such naturally occurring change could be very important in

understanding changes in drug use and perhaps other deviant behavior.

To explore this issue, the movement into and out of the heavy drug use was assessed. Heavy drug use was chosen because it is indicative of the greatest drug use and deviance. Of those heavily drug-involved at the first assessment (n=183), 48 percent remained heavily involved at follow-up, but 52 percent changed, with 31 percent becoming occasional users and 21 percent moving to minimal use. Conversely, of those heavily drug-involved at the follow-up (n=199), 44 percent were heavily involved at the first assessment, but 32 percent moved in from moderate involvement and 24 percent from minimal use. That is, there was over 50 percent turnover into and out of the high drug involvement group over four years, and approximately 40 percent of the change came from movement out of or into the minimal use group, suggesting substantial naturally occurring change in drug use over time.

Two separate forward stepwise logistic regressions were run in order to identify factors which predicted movement into and out of heavy drug use. Predictive power of, or amount of variance explained by, the logistic regression model was assessed by R^2 (Christensen 1990), which is analogous to R^2 in linear regression. Fourteen variables were entered into these regressions. Academic status, ethnicity, gender, attainment of a high school degree or equivalent, employment status, and participation in a steady relationship were entered because prior research suggested their importance. Eight additional variables were generated from peer cluster theory (Oetting, Beauvais 1987); specifically, initial assessment reports of peer drug usage, peer requests of participants to use, whether peers would request them to stop drug use, whether the participant would ask others to stop, and current (follow-up) reports of these same four variables. Sample sizes were not sufficient to consider interactions among these variables. Current peer requests to use drugs (p<.001) and current peer use (p<.01) contributed to the prediction of movement out of high drug involvement, $R^2=.33$. Reports at the initial assessment of peer drug use (p<.01), peer requests to use drugs (p<.05), and participant willingness to ask others to stop (p<.001) predicted movement into the heavy use category, $R^2=.33$. Relationships in these regressions were elucidated further by assessing the

change within groups on the three variables entering into the logistic regressions. Change was defined as the difference between the participant's follow-up score and the initial score for each variable, and significance was evaluated against the null hypothesis of zero order change. Youth who began as heavy users and remained so were essentially unchanged on peer drug use, peers asking them to use, or their willingness to ask others to stop using drugs (M=.11, .00 and -.26, respectively). Youth who moved into heavy drug involvement showed significant increases in peer drug use and peer requests to use drugs, and these youth showed significant reductions in their willingness to ask others to stop using drugs (M=2.82, 2.18, and -3.79), whereas youth who began with heavy involvement but who moved out of heavy involvement showed significant decreases in peer drug use and requests to use and a non significant increase in their willingness to ask others to stop using drugs (M=-1.85, -3.69, and .67). In summary, movement into or out of heavy drug involvement was predicted best by two peer behaviors (drug use and requests to use drugs) and by a third, participant behavior of willingness to ask others to stop drug use, in the case of moving into heavy drug involvement.

DISCUSSION

Although there were general increases in drug involvement for males and decreases for females, the percentage of each group at each level of drug involvement remained generally stable over a four year interval. As other research (Beauvais et al 1996; Fagan, Pabon 1990; Mensch, Kandel 1988) has shown, academic status was related at both initial and follow-up assessments to the percentage of youth at each level of drug involvement. Specifically, dropouts tended to be more highly involved than academically at risk youth, and both groups were more involved than control students. These differences were not only statistically significant but also socially significant, because more than a quarter of dropouts were involved in a high drug use lifestyle, one with serious personal and social consequences over time. Gender was also related at the follow-up assessment, with a higher percentage of males showing greater drug involvement than females. Ethnicity, however, was not related to drug involvement. That is, although Mexican American and White American youth may differ in the use of specific

drugs as suggested by Beauvais et al (1996) and Maddahian et al (1986), results suggested similar percentage involvement with drugs for Mexican American and White American youth generally. Although there were no differences as a function of ethnicity, the scope of the public health concern for Mexican American youth must be interpreted in light of the demographics of this group. Approximately 50 percent of Mexican American youth drop out such that the absolute number of Mexican American youth at risk for heavy drug involvement is likely to be elevated by this educationally related risk factor. Moreover, they are one of the youngest, most rapidly growing segments of the population, suggesting that the numbers of heavily drug involved Mexican American youth may be quite high in the near future. Young dropouts are more likely to be unemployed or under employed and are less likely to have health insurance and receive early medical attention, which also suggest a considerable public health concern and the need for early prevention and remediation strategies.

Although general distributions of percentage drug involvement remained fairly constant across groups and time, considerable change (i.e., movement into and out of drug involvement category) was also noted. For example, over 50 percent moved out of the high drug involvement group from the first to second assessment, and over 50 percent new youth moved into this group. The type of movement observed in this sample was not minor. Forty percent of those who reported change moved from the high drug involvement into the low/minimal use category. Thus, change was substantial both quantitatively in terms of the numbers moving and qualitatively in terms of the type of changes made.

In predicting this change, demographic variables such as gender, ethnicity, academic standing, employment status, graduation status, and presence or absence of a consistent, ongoing relationship did not predict this movement into and out of high drug involvement. However, peer variables derived from peer cluster theory (Oetting, Beauvais 1987) contributed significantly to understanding of change, accounting for 33 percent of the variance in change. Peer cluster theory as outlined by Oetting and Beauvais (1986) contends,

...that small, identifiable peer clusters determine where, when, and how drugs are used and

that these clusters specifically help shape attitudes and beliefs about drugs. (Oetting, Beauvais 1986)

Specifically in this study, peer drug use and peers asking the participant to use predicted both movement into and out of high drug involvement, with the individual's own willingness to ask peers to stop using drugs adding to the prediction of those who moved out of high drug involvement. Change on these variables closely mirrored change in high drug involvement status. Individuals who remained unchanged in high involvement also remained unchanged on these variables, whereas individuals who moved into high drug involvement reported an increase in peer drug use and peer requests to partake of drugs and a decrease in a tendency to ask others to stop using drugs, and individuals who moved out of high drug involvement experienced a decrease in peer drug use and requests to use. Thus, movement into or out of a high level of drug involvement was best predicted by peer variables, especially peer drug use and peer requests of others to use. From the current data, the sequencing of and processes of this change are not totally clear. That is, it is not clear whether the changers changed peers, had peers change their behavior, or a combination of both. Nonetheless, further longitudinal study of peer behaviors and interactive processes is warranted to understand those processes which naturally influence change in high levels of drug involvement. Such information will clarify the development of drug involvement and other deviant behaviors and inform the design of prevention and remediation efforts (e.g., designing interventions to alter the early stages of drug-involved peer structures and to enhance movement to less drug-involved peer groups or change in peer group norms and behaviors regarding drug use).

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