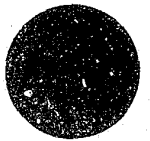


IMPROVING THE HEALTH OF MINORITIES PUBLIC HEALTH REPORTS



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Mexican American and White American School Dropouts' Drug Use, Health Status, and Involvement in Violence

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Synopsis

A group of Mexican American and white American school dropouts were compared with a control group and a group of academically at-risk students in three locations in the Southwest. The sample group consisted of school dropouts and comparison subjects in grades 6 through 12. Both comparison groups were matched with the dropouts by sex, ethnicity, and school grade. At risk students also were matched by age and grade point average.

Dropout subjects were found to have the highest rates of alcohol and drug use, followed by at risk

student subjects. The relative rates of use were about the same for nearly all drugs, with the largest differences found for drinking to intoxication and use of marijuana, uppers, and cocaine. Among the dropouts, 75 percent of Mexican American males and 90 percent of white American males had tried marijuana. More than a third of the dropouts had tried cocaine. One-third of the Mexican American males and more than half of the females in both the Mexican American and the white American group had tried uppers.

Females, especially dropouts, had higher rates of tobacco smoking than males. The rates of cigarette smoking among dropouts were significantly greater than among the control group only for males. Health problems of parents were not related to dropping out of school for any of the ethnic or sex groups. However, dropouts were more likely to have had serious illness within the preceding year than members of the control group.

Many dropouts live in a violent and dangerous world. As an example, about one in five dropouts had held a gun on someone in a confrontation, and 20 percent had cut someone with a knife. Nearly half had been badly beaten. Females were rarely perpetrators of crimes or misdemeanors, but were often victims. Forty-two percent of the white American female dropouts had been either raped or sexually assaulted. Mexican American females were found less likely to be victims of violence, which perhaps reflects cultural values of marianisma and machismo, involving protectiveness toward females.

FIFTY PERCENT of the U.S. Hispanic population is Mexican American, the largest Hispanic subpopulation. In the Southwest, more than 80 percent of Hispanics are Mexican American. Estimates show that Mexican Americans will be the majority

of the population younger than 30 years of age in the Southwest by the year 2000. Their median age is 22 years, with almost a quarter younger than 10 years (1). The economic and social welfare of the region will be heavily dependent in the near future

on the capabilities and earning power of this population.

Dropping out of school before high school graduation clearly affects societal functioning. Morgan (2) has estimated that high school graduates have salaries that average \$60 a week more than the salaries of their dropout peers. The Appalachian Regional Commission estimated that high school dropouts nationwide will have lifetime earnings \$237 billion less than those of graduates, resulting in a potential tax loss to State and local governments of an estimated \$71 billion (3).

Mexican American youths are known to drop out of school more frequently than their white American counterparts, but accurate rates for Mexican American dropouts are difficult to determine. In many States, only those who attend the ninth grade and later leave school are counted as dropouts. In many locations, students are not counted as dropouts if they do not re-enroll for the next year, but they are counted if they leave school during the year. Estimates of dropout rates among Mexican American youths run as high as 45 percent in some locations.

Although white American youths probably drop out of school less frequently, their rates are not negligible, with estimates ranging as high as 30 percent. Although the costs of dropping out are acknowledged to be potentially high, both for the student and society, there is no clear understanding of the causes and consequences, especially among specific minority, ethnic, or racial groups.

Rumberger's review of the literature summarized national survey data indicating that the overall long-term dropout incidence rate is declining, but the short-term rate, especially for minority groups, is increasing (4-6). He identifies as major research issues the problems involved in establishing dropout incidence rates, determining rate trends, identifying factors associated with the phenomenon and their consequences, and developing possible solutions and providing information on them. Factors that have been found to contribute to dropping out are socioeconomic status, family-related educational and occupational variables, school-related behaviors of the dropout, economic components that contribute to the dropout's decision to leave, and a variety of personal factors. The author concludes with the statement, "new research efforts should focus on developing multivariate, longitudinal, and comprehensive models of the causes and consequences of dropping out."

A Teachers College Record issue in 1986 focused on the subject of dropouts. Natriello and coworkers

'More than a third of white females either had, for example, been beaten by a parent or a sibling, or had been raped or sexually assaulted.'

ers argued for attention to four aspects of dropout research: student characteristics, school processes, definitions of dropping out, and consequences of the behavior (7). Ekstrom and coworkers summarized data collected by the National Center for Education Statistics for its High School and Beyond study (HSB) (8). HSB reported on a survey of 24,000 students who were sophomores in 1980. More than 2,000 had dropped out when resurveyed in 1982. Dropouts were disproportionately represented by low socioeconomic status persons and members of ethnic and racial minorities. Dropouts were more likely to come from homes which offered less educational support. The authors reported that dropouts had low school grades and test scores, did less homework, and self-reported more disciplinary problems. The dropouts were more likely to select friends who were alienated from and had difficulty in school. The data collected suggested that one-third of those who leave school do so because they are performing poorly and are alienated from the educational process. The study reported that 29 percent of the dropouts were unemployed, not in job training, and looking for work 2 years after dropping out.

Kolstad and Kaufman analyzed HSB data and reported that many of the dropouts changed their minds and returned to school or received a General Educational Development diploma or certificate (GED) (9). Four years after graduation would have taken place, 44 percent of dropouts had completed their high school education, 30.7 percent had received GEDs, and 13.5 percent had obtained high school diplomas.

Fine presented data on interviews with dropouts from an urban high school (10). She concluded that some students dropped out because they had negative perceptions of education. Others left because they were discouraged by poverty, negative educational experiences, and feelings of hopelessness. A third group was actively pushed out of school by the educational system.

Steinberg and coworkers, in the most thorough review on language-minority youths, discussed the

'The reason for lower school performance of Mexican American youth is not known, but is likely a result of a conjunction of economic and social factors, such as poverty and prejudice, and a lack of expectations, language skills, and parental education.'

language variable, and in particular, that relating to Hispanics (11). They reported that speaking only Spanish significantly increased the likelihood of dropping out. Hispanic students with low socioeconomic backgrounds were one and one-half times more likely to drop out than white students of similar social and economic status. Family size, absence of one parent, and having fewer material possessions and reading materials were found to significantly predict dropping out.

Using the data base from HSB, Peng reported that females in the Hispanic and Native-American groups were more likely to drop out than males (12). Two Canadian studies investigated the relationship between academic success and drug usage. Whitehead reported that drug use was higher for academically successful students, but the data were obtained in the 1960s, when drug use was still low. Later studies all showed greater drug use among those with poor school performance (13). Annis and Watson found drug use to be higher for ninth graders who dropped out (14). The dropouts in the Annis study had higher use rates both before and after dropping out.

Kandel reported higher drug use patterns for school absentees than for those who attended regularly (15). In a later study, Kandel reported that dropouts were more likely to have higher drug use rates than students attending school (16). More recently, Mensch and Kandel reported on data collected in 1984 by the National Longitudinal Survey of Young Adults (17), which was supported by the National Institute on Drug Abuse and the National Institute of Mental Health. Mensch and Kandel found that for adults 19 to 27 years, the "lifetime and annual prevalence of the use of various legal and illegal substances and the intensity of use were higher, with the exception of alcohol, among those who dropped out of high school than those who did not." Although ethnic

and racial data were available, the authors did not report those results.

Others have indicated a similar association between dropping out and drug use (18, 19). McCaul and coworkers discussed data from the 1986 HSB data base and reported significantly higher alcohol use among dropouts, with sex, socioeconomic status, and academic ability held constant (20). The authors suggested caution in interpreting the results, given that the unit of measurement for alcohol included both number of days of drinking per month and number of drinks consumed per day.

Bruno and Doscher reported on the relationship between drug use and dropping out among Hispanic youths (21). Their sample was Mexican American and white youths who were involved in a truant program. Seventy-eight students completed a questionnaire on their drug use. Sixty-seven percent of the sample indicated that they had used marijuana, with a majority of that percentage indicating a use rate of once a week or oftener. There are two difficulties with this study. First, the population was composed of potential dropouts and followup was needed to assess the number of actual dropouts. Second, the number of Mexican Americans in the final sample was not specified.

In 1987 we began a long-term study of Mexican American and white American dropouts in order to examine a wide range of social, psychological, and environmental variables, with emphasis on drug use. During the first year we trained staff, developed methods for reaching dropouts, and tested the instruments for reliability and appropriateness of use with this population. Using data from the interviews and questionnaires, dropouts were compared with randomly selected controls in school and with students identified as at risk, matched with the dropouts for academic risk. Subjects were debriefed after completing the surveys and asked whether we should have asked about other topics. Some subjects suggested questions about sexual and physical abuse. During the 1988-89 school year we included a series of questions about violence.

We describe a preliminary analysis of data obtained during the 1988-89 academic year to examine links between drug use, self-ratings of health status, involvement with violence, and dropping out. This report described part of the study, which when completed is to include analyses of the psychosocial characteristics that link to drug use and dropping out. Subjects will be followed to determine what happens to them and how well incidence of drug use and violence predicts outcome.

Table 1. Mean age and age range of three groups of Mexican Americans and white Americans of high school age

Group	Males				Females			
	Mexican American (N = 73)		White American (N = 33)		Mexican American (N = 41)		White American (N = 54)	
	Mean age in years	Age range in years	Mean age in years	Age range in years	Mean age in years	Age range in years	Mean age in years	Age range in years
Control	16.74	13-19	16.74	15-19	16.59	14-19	16.47	14-18
At risk	16.82	14-19	17.18	15-20	16.60	14-19	16.55	14-18
Dropout	16.71	13-20	16.97	15-19	16.71	14-19	16.44	14-18

NOTE: There were no statistically significant age differences by race or sex.

Table 2. Average grade point average of three groups of Mexican American and white Americans of high school age

Group	Males		Females	
	Mexican American	White American	Mexican American	White American
Control	2.69	2.97	2.63	2.81
At risk	¹ 1.76	1.88	¹ 1.71	¹ 2.07
Dropout	¹ 1.47	1.93	¹ 1.52	¹ 1.56

¹ Groups differ significantly (chi-square $P < 0.05$).

Method

The sample consisted of school dropouts and comparison subjects in grades 6 through 12 in three southwestern locations, a large metropolitan city, a mid-sized community, and a small rural town. Dropout subjects included those who had stopped attending and had had no contact with school for a month. They were compared to two groups, controls matched to dropouts only for ethnicity, sex, and grade in school; and a second comparison group of youths matched with dropouts for academic risk. At risk students were matched with dropouts for ethnicity, sex, grade in school, and as closely as possible, for age and grade point average.

Approval to participate was obtained from subjects and parents. Dropouts either came to the school or were met in another public building to complete the survey; comparison subjects were tested during school hours. Dropouts were paid \$20 and controls \$10 for participating. The tests were individually administered and were paper and pencil measures. Tests were in relatively simple language and took about an hour and a half to complete. All instruments were in English because, in those school systems, the few students who lacked adequate English skills to complete the questionnaires were likely to lack reading skills in

Spanish. Only one subject needed to have the questions read aloud because of inability to read English.

On completion, questionnaires were placed in an envelope by the subject and sealed. The interviewer and the subject together mailed the questionnaire to the study laboratory. Interviewers did not see the responses.

The sample available for analysis included 114 Mexican American dropouts (73 male and 41 female) and 67 white American dropouts (33 male and 34 female). Each dropout was matched with a subject selected for equivalent academic risk, and with a randomly selected control, for a total of 543 subjects.

Results

The preliminary analysis, which covered only part of the data expected to be available at the end of the study, included the survey responses that had been entered into the computer system and that were available for analysis. Being a partial data set, it differed in numbers of subjects and distributions by sex. Because they are artifacts of the preliminary nature of the report, the differences should not be taken as indications of relative rates of dropout by ethnicity or sex. Comparisons of dropouts, at risk subjects, and controls within sex and ethnic groups, however, are accurate comparisons across matched subjects and would not be influenced by differences owing to the nature of the partial data set.

Table 1 shows the age distribution and number of subjects in each cell of the sample. The subjects were matched for ethnicity, sex, and school grade with comparison subjects. Within ethnic and sex groups, the match for age worked well. There were no significant differences between dropouts and either control or at risk subjects.

Table 2 shows the grade point average (GPA) of

Table 3. Substance use among three groups of Mexican American and white American males of high school age, lifetime prevalence

Use	Mexican American males			White American males		
	Control	At risk	Dropout	Control	At risk	Dropout
Alcohol	81.7	89.2	89.4	¹ 85.3	¹ 97.0	¹ 100.0
Intoxication	¹ 60.7	¹ 76.7	¹ 80.3	¹ 64.7	¹ 84.4	¹ 96.3
Cocaine	18.3	33.3	32.3	8.8	21.2	33.3
Marijuana	¹ 56.7	¹ 66.2	¹ 77.3	¹ 35.3	¹ 71.9	¹ 92.6
Heroin	4.9	2.7	6.2	5.9	3.0	7.4
Other narcotics	11.5	19.2	12.1	0.0	¹ 24.2	¹ 33.3
Inhalants	16.4	23.9	33.8	17.6	31.3	44.0
Uppers	21.3	32.9	34.4	¹ 15.2	¹ 40.6	¹ 46.2
Downers	8.2	12.5	9.1	2.9	12.1	20.0
Tranquilizers	...	4.1	1.5	2.9	15.2	7.4
PCP	6.7	13.9	7.6	6.3	24.2	18.5
Quaaludes	10.0	7.0	3.0	6.3	15.2	3.7
Cigarettes	¹ 49.2	¹ 72.6	¹ 80.0	¹ 54.5	¹ 84.8	¹ 85.2
Smokeless tobacco	52.5	45.2	34.8	¹ 45.5	¹ 75.8	¹ 66.7

¹ Groups differ significantly (chi square $P < 0.05$).

Table 4. Substance use among three groups of Mexican American and white American females of high school age, lifetime prevalence

Use	Mexican American females			White American females		
	Control	At risk	Dropout	Control	At risk	Dropout
Alcohol	90.2	90.9	90.2	94.1	100.0	97.1
Intoxication	65.9	78.8	80.5	¹ 55.9	¹ 83.3	¹ 91.2
Cocaine	¹ 12.8	¹ 36.4	¹ 42.5	¹ 8.8	¹ 32.1	¹ 41.2
Marijuana	¹ 48.8	¹ 75.8	¹ 82.9	¹ 44.1	¹ 63.3	¹ 85.3
Heroin	2.4	3.0	10.0	2.9	...	2.9
Other narcotics	7.3	12.1	7.3	14.7	24.1	29.4
Inhalants	9.8	31.3	17.5	18.2	31.0	20.6
Uppers	¹ 24.4	¹ 51.5	¹ 52.5	¹ 20.6	¹ 46.4	¹ 52.9
Downers	7.3	18.2	19.5	8.8	10.3	26.5
Tranquilizers	4.9	6.1	2.4	2.9	10.3	11.8
PCP	5.0	21.2	12.2	5.9	6.9	8.8
Quaaludes	5.0	9.4	7.3	5.9	10.3	14.7
Cigarettes	73.2	81.8	68.3	76.5	79.3	91.2
Smokeless tobacco	2.3	6.1	14.6	20.5	24.1	50.0

¹ Groups differ significantly (chi square $P < 0.05$).

all groups. As expected, the GPA of control subjects is much higher than that of dropouts or at risk subjects. An attempt was made to match at risk subjects with dropouts for GPA during the latest full year of completed school. Some dropouts, however, had all F grades (zero GPA) during their last full semester in school, and subjects with equivalent GPAs could not be found who were still attending school. White males had the highest average GPA, and a matching at risk group could be formed. For the other three ethnic and sex groups, the at risk group had a significantly higher GPA.

Drug use. Tables 3 and 4 show the ever used, or lifetime prevalence, rate of use of each drug. The

preferred drugs were essentially those of other American youths: alcohol, marijuana, stimulants (uppers), inhalants, and cocaine. The rates of use among the control subjects were not identical, but generally similar, to rates of use of the drugs among Mexican American and white American youths in the Southwest (22). Chi-square provides a conservative test of significance within ethnic and sex groups, because it does not take into account the fact that subjects were matched. There were significant differences in every ethnic and sex group. Wherever differences occurred, the drug use of dropouts and academically at risk subjects was higher than that of controls. Even when differences were not significant, lifetime prevalence rates showed the same general pattern of lower drug use

Table 5. Involvement with violence among three groups of Mexican American and white American males of high school age

Type of violence	Mexican American males			White American males		
	Control	At risk	Dropout	Control	At risk	Dropout
Perpetrator:						
Held knife	15.0	26.0	27.1	15.6	33.3	37.9
Held club	18.3	28.8	28.2	¹ 3.1	¹ 36.4	¹ 28.6
Held gun	¹ 3.4	¹ 20.8	¹ 19.7	6.3	21.2	17.9
Cut with knife	¹ 1.7	¹ 13.5	¹ 19.7	6.3	15.2	10.7
Hit with club	¹ 8.5	¹ 27.4	¹ 18.3	3.1	24.2	21.4
Shot with gun .....	...	5.5	2.9	...	3.0	3.6
Victim:						
Beaten by parents	11.7	21.9	19.7	15.6	24.2	27.6
Beaten by sibling	21.7	20.5	21.1	12.5	33.3	34.5
Beaten by friend	13.3	15.3	11.3	19.4	18.2	24.1
Beaten by other	¹ 23.3	¹ 43.2	¹ 41.4	¹ 12.9	¹ 60.6	¹ 51.7
Raped or sexually assaulted	3.3	1.4	...	3.1	3.0	3.4
Robbed	20.0	28.8	21.1	25.0	36.4	35.7
Stabbed	6.8	15.1	15.7	6.3	12.1	13.8
Shot	1.7	4.1	4.3	...	...	13.8

¹ Groups differ significantly (chi square $P < 0.05$).

among controls for most drugs. For 11 or more of the 14 drugs, differences were seen in the expected direction in every ethnic and sex group.

Given the consistent trends, we expect that when the study is completed, the larger sample size and more powerful methods of analysis that will be available will show that dropouts have higher rates of lifetime prevalence for nearly every drug, that control subjects have the lowest rates of use, and that subjects at risk academically have rates of use lying between them, often closer to the rates of use of dropouts than to those of controls.

For several drugs, the differences between rates of use among dropouts and controls were very large. Among male white Americans, for example, only a third of the controls had tried marijuana, but more than 90 percent of the dropouts had. In that group, three times as many dropouts as controls had tried cocaine, and a third of dropouts had used a narcotic, such as Demerol or Percodan, compared with none of the controls. The differences were not as marked for the Mexican American males because the dropouts seemed to have slightly lower rates and controls appeared to have slightly higher rates than those found for white American males.

The differences between female dropouts and controls was equally marked. Less than half of the control group females had tried marijuana, but more than 80 percent of dropout group females had. More than three times as many dropouts had tried cocaine and twice as many had tried stimulants. Female students in the at risk group had rates of drug use lying between those of controls

and dropouts, but closer to dropouts.

Tobacco use among dropouts and controls showed a similar pattern. Rates for female control subjects were so high (nearly 75 percent had used tobacco), however, that the differences between dropouts and controls were not significant. Only a few of the Mexican American females had tried smokeless tobacco, but among white American females, one in five controls and half the dropouts had tried it. Only about half the control males had tried tobacco, but more than 80 percent of dropouts had.

Use of tobacco within the preceding 30 days was checked to determine whether the high rates were attributable to experimentation, or whether the subjects were continuously smoking. There were significant differences between dropout, at risk, and control subjects for all groups. About 15 percent of male controls had smoked in the preceding 30 days, but 63 percent of Mexican American male dropouts and 73 percent of white male dropouts had done so. One-third of the control Mexican American females and nearly half of white control females had smoked in the preceding month, while 60 percent of at risk Mexican American females and 81 percent of dropout white females had done so. There were no significant differences for smokeless tobacco, but slightly fewer than 20 percent of males had used it within the preceding 30 days.

Violence. Tables 5 and 6 show the results from the sections of the survey that dealt with violence. In general, more males than females had perpetrated

Table 6. Involvement with violence among three groups of Mexican American and white American females of high school age

Type of violence	Mexican American females			White American females		
	Control	At risk	Dropout	Control	At risk	Dropout
Perpetrator:						
Held knife	7.5	8.6	7.5	8.8	13.3	15.2
Held club .....	...	2.9	2.9	5.9	10.0	...
Held gun .....	...	8.6	7.5	2.9	...	...
Cut with knife	2.5	8.6	2.5	2.9	6.7	9.1
Hit with club .....	...	2.9	10.0	5.9	10.0	...
Shot with gun .....	...	...	...	2.9	...	...
Victim:						
Beaten by parents	10.0	14.3	22.5	17.6	16.7	36.4
Beaten by sibling	30.0	20.6	20.0	26.5	23.3	39.4
Beaten by friend	12.5	8.6	7.7	8.8	10.0	27.3
Beaten by other	25.0	28.6	20.0	¹ 8.8	¹ 23.3	¹ 39.4
Raped or sexually assaulted	10.0	20.0	20.0	23.5	23.3	42.4
Robbed	12.5	11.4	12.8	20.6	16.7	12.1
Stabbed	2.5	2.9	7.5	5.9	3.3	12.1
Shot .....	...	...	...	5.9	6.7	...

¹ Groups differ significantly (chi square $P < 0.05$).

violence, and females had generally low rates of perpetrating, regardless of group.

Although there were significant differences between male dropouts and controls, nonsignificant differences were consistently in the same direction, with greater perpetration of violence by dropouts and at risk subjects. We believe the completed study will show male dropouts and at risk subjects not differing in the extent to which they have engaged in physical attacks or threats of violence, but differing from controls on essentially every variable.

There is one significant difference between male dropouts and at risk subjects and controls in victimization, defined as having been beaten by someone other than a relative or a friend. Both Mexican American and white dropouts, and at risk males, were two to three times more likely to be victims of violence. (The chi-square for white males for having shot someone with a gun and for having been shot would have been significant, but the cell frequencies were too low to meet the requirements for the test.)

Although females had low rates of having perpetrated violence, they often were victims of violence. The one significant difference between dropout, at risk, and control subjects for females was that more white females had been beaten by someone other than a friend or a relative. There were, however, other differences that may prove to be significant in the final analysis. More than a third of white females either had, for example, been beaten by a parent or a sibling, or had been raped or sexually assaulted. There were no significant

differences between groups of Mexican American females. In general, their rates of victimization may be slightly lower than those of whites.

Health. Tables 7 and 8 show data from questions about personal and family illness and self-ratings of health. Dropouts and at risk subjects did not differ from controls on presence of parental health problems, a factor that has been considered of possible importance in dropouts' rates.

When all data are considered, there may be differences in self-reported health status between dropouts and the at risk youths and controls, both male and female. Available rates of reported serious illness among males were too low to allow a test of significance. Male controls, however, did rate their health as above average more often than dropouts or at risk subjects, and the difference was significant for Mexican American males.

Females reported more health problems than males. Fewer female controls reported a serious illness and the difference was significant for white females. Almost a third of the white female dropouts had had a serious illness in the preceding year.

Discussion

Dropouts in this study probably are not representative of all dropouts, even within the three study locations. In the metropolitan area, dropouts frequently disappeared before they could be reached. There is more communication and less anonymity in smaller locations, and there it was easier to reach dropouts and encourage them to

Table 7. Incidence of serious illness during preceding year, self-assessment of personal health status, and father-to-be status among three groups of Mexican American and white American males of high school age

Type of violence	Mexican American males			White American males		
	Control	At risk	Dropout	Control	At risk	Dropout
Illness last year .....	...	7.2	6.3	7.1	...	15.4
Mother sick last year	13.1	11.6	12.7	7.4	12.0	7.7
Father sick last year	4.9	14.7	8.2	14.8	16.0	4.2
Personal assessment of health:						
Better than peers	¹ 63.6	¹ 44.6	¹ 31.7	74.1	52.0	59.0
Same as peers	¹ 31.1	¹ 52.3	¹ 61.9	25.9	44.0	45.5
Worse than peers	3.3	3.1	6.3	...	4.0	4.5
Father-to-be status	5.1	1.4	4.3	...	...	3.4

¹ Groups differ significantly (chi square $P < 0.05$).

Table 8. Incidence of serious illness during preceding year, self-assessment of personal health status, and pregnancy rates among three groups of Mexican American and white American females of high school age

Characteristic	Mexican American females			White American females		
	Control	At risk	Dropout	Control	At risk	Dropout
Illness last year	7.5	13.3	12.9	¹ 12.5	¹ 6.9	¹ 32.3
Mother sick last year	20.0	10.0	10.0	18.8	13.8	12.9
Father sick last year	12.8	10.3	9.7	3.1	10.7	6.5
Personal assessment of health:						
Better than peers	43.6	40.0	34.5	25.8	32.1	29.0
Same as peers	56.4	60.0	65.5	54.8	60.7	45.2
Worse than peers .....	...	...	...	19.4	7.1	25.8
Pregnant .....	...	2.9	15.4	2.9	3.3	12.1

¹ Groups differ significantly (chi square $P < 0.05$).

participate in the study. The study group, however, includes few of the more deviant dropouts, such as runaways, young prostitutes, or those living on the streets, especially in metropolitan locations. Once a dropout was met, only 10 percent refused, or their parents refused their permission, to participate. The rate dropped when we stopped asking for social security account numbers as identifying data.

Eventually, by tracking comparison groups of controls and youths matched for academic risk, we will be able to identify characteristics of dropouts who disappear immediately. In interpretation of the current results, note that there may be a group of more deviant dropouts that were not included.

Few female dropout subjects were pregnant. A generation ago, we might have found more female dropouts who were pregnant, possibly precociously pregnant. However, today there are community programs to keep pregnant girls in school. The program in the study's metropolitan area may even be considered a model for such programs. The

female dropouts in our study, therefore, were more likely to have problems other than pregnancy that led to their leaving school.

White American youths tended to have better grades than Mexican American youths. The poorer school performance of the Mexican American youths in general may have something to do with the ethnic differences seen in dropout rates: The reason for lower school performance of Mexican American youths is not known, but is likely a result of a conjunction of economic and social factors, such as poverty and prejudice, and a lack of expectations, language skills, and parental education.

The grade point averages of the dropouts, taken from school records, were very low for all but the white American males. For the white male dropouts to have an average GPA of 1.93, almost half of them must have had grades that were passing. A later examination of their reasons for leaving school may prove helpful. Their grades were aver-

'Although only one difference was significant, dropouts in all ethnic and sex groups were more likely to have experienced a serious illness in the preceding year. Almost one-third of the white female dropouts were seriously ill.'

aged for the last complete year that they spent in school. Although dropouts leave school for many reasons, it is clear that their performance in school suffers badly long before they leave. Although not specifically analyzed, we noted that dropouts were absent with increasing frequency before they finally left school, and this may have been a factor in low grades.

We were not always able to match the average GPA of the academically at risk students with that of the dropouts. Except for white males, the grades of some of the dropouts were too low to find matches with other students. In interpreting any differences between dropouts and at risk students who were still in school, this difference must be considered. For three of the four groups, the level of adjustment to school of the at risk students is not quite as low as that of the dropouts.

Drug and alcohol use. The study findings were consistent with prior research in finding higher rates of drug use among dropouts. However, unlike the findings of Mensch and Kandel (17), there were indications of greater alcohol use. The National Longitudinal Survey of Young Adults panel they used, however, was surveyed long after the subjects had left school. They had an age range of 19 to 27 years, suggesting that their dropout group differed from ours, who were surveyed immediately after leaving school and had an age range of 13 to 20 years.

There were significant differences between dropouts and at risk students and control groups for the use of several drugs, particularly marijuana, as well as for drinking to intoxication and using uppers. The consistent pattern for nearly all drugs, however, suggested that, when this study is completed, dropouts are likely to show higher rates of use for essentially all drugs. The differences between dropouts and controls were especially large among the more frequently used drugs. It was not unusual to find that from two to three times as many dropouts

as controls had tried a drug. The subjects who were still in school, but matched with dropouts for academic risk, tended to have lifetime prevalence rates between those of controls and dropouts, but generally closer to the rates for dropouts. A strong general case can be made that youths who are having academic problems are much more likely to be involved with drugs.

Although the general pattern of higher drug use among dropouts was present in all groups, there were ethnicity and sex differences, many of which are likely to hold up in the final results. The largest differences between controls and dropouts were among white males. Differences were smaller among Mexican American males because rates for controls were somewhat higher and rates for dropouts were somewhat lower. White male dropouts had the highest percentages of drug use for a number of different drugs. The dropout rate was lower for whites than for Mexican Americans, and white dropouts may, therefore, be a more deviant segment of the population than Mexican American dropouts. It appears that this is the most deviant group, in terms of drug use, in the study.

Dropout rates were lower for white females, but they had percentages of drug use similar to the Mexican American female dropouts. One possibility is that dropping out of school is not considered as deviant for females in either of the subpopulations from which the dropouts were drawn. In other studies, and probably in this one, although the data have yet to be analyzed, dropouts were more likely to come from low socioeconomic backgrounds, in which traditional sex roles may be maintained. It may be more deviant for the male, who has the traditional breadwinner role, to drop out, than for the female, who has less investment in that role.

Both drug use and dropping out have long-term consequences for the individual and society, and it is likely that, for at least some of these youths, the problem behaviors exacerbate each other. Lack of employment potential probably makes a drug lifestyle more attractive, and the use of drugs may reduce employment potential even more.

This reciprocity may be present in the evolution of the problems while the youth is still in school. Other studies will have to determine whether there are temporal relationships between drug use and problems in school that suggest the direction of causation. We suspect that there is a feedback loop between these two behaviors. We have shown in other research that school adjustment problems may lead to the formation of peer clusters (best

friend dyads, couples, or small groups of friends) that have a higher potential for drug involvement (23). Drug use, in turn, may interfere directly with school performance, and perhaps more important, distance the student from teachers, counselors, and nondrug-using students who might otherwise have had a positive influence on school adjustment.

Health. Although only one difference was significant, dropouts in all ethnic and sex groups were more likely to have experienced a serious illness in the preceding year. Almost one-third of the white female dropouts were seriously ill. Further study may show that there is a small, but important, group of students for whom illness is a dropout-precipitating factor. If so, special supportive programs for seriously ill students may be useful in prevention. The programs might affect only a small proportion of potential dropouts, but may be essential for those few.

Long-term health risks may be a greater problem. The figures on tobacco use within the preceding month showed that rather than merely experimenting, many were using tobacco on a continuing basis. Females in general, and white dropouts in particular, were likely to be smokers. Eight out of 10 white female dropouts and almost three-fourths of white male dropouts were found to have smoked in the preceding month, adding health consequences of smoking to other problems they were likely to experience. A few males were using smokeless tobacco, with its particular risks.

Violence. The data present a picture of dropouts living in a very dangerous environment. Only some of the differences were significant, but the consistent pattern of the results suggests that many of the differences between dropouts and controls will be seen to be significant in the final analyses.

In keeping with cultural stereotypes, the females, in general, were less likely to be perpetrators of violence. They were, however, more likely to be victims of violence, particularly white female dropouts, almost half of whom reported having been raped or sexually assaulted. More than a third of the white females had been physically assaulted. A surprising number of control subjects had been assaulted, so that some of the differences are not significant.

At least in the preliminary data, Mexican American females showed slightly lower levels of victimization than any of the other groups. If the differences hold up in the final analyses, less victimization may relate to the cultural factor of

marianisma, the image of the Hispanic female as relatively passive, innocent, and virginal, as well as to the element of female protectiveness in *machismo*. The lower level may be related to under-reporting of family related and violence issues caused by strong Hispanic family values which lead to denial.

About one in five male dropouts had held a gun on someone in a confrontation, and the same proportion had used a club to hit a person. Almost one in five Mexican American dropouts had cut someone with a knife, and several had shot someone with a gun. Male dropouts also were victims of violence, that is, having being beaten or robbed, and a few had been shot. The at risk group who were still in school were similar to dropouts in levels of violence and victimization. Male dropouts and at risk students seemed to be both perpetrators and victims of violence. There were considerable differences between dropouts and controls in rates of having perpetrated violence, but smaller differences in having been the victim.

The problems of violence have received very little attention in previous studies of dropouts, but may be a critical factor. A victim of violence, particularly when the perpetrators are present in the school environment, may have increased motivation for dropping out. Perpetrators engaging in behaviors that may lead to criminal records add to dropout and drug use by reducing their employability. Perpetrators may be isolating themselves even further from the elements of society that provide social control, thus increasing their potential for drug involvement.

Summary

Dropouts and subjects matched for similarly poor academic records have higher rates of drug use and are more likely to be both the victims and perpetrators of violence. The image is one of youths with multiple problems, which exacerbate each other. The results indicate that dropouts may have many more problems in life than those that are caused by failure to complete high school. The results suggest that prevention or treatment programs may not be effective if they try to deal only with a single facet of the dropouts' lives.

Although the results show very high rates of drug use and violence among dropouts, not all dropouts are alike. There are those not using drugs, and most, including dropouts, are not involved with violence.

The future of dropouts is not entirely negative.

National studies report that as many as 40 percent of dropouts will complete their education, or receive a GED. Little is known of the long-term consequences of the temporary dropouts and further longitudinal research is needed. Although high levels of drug use and involvement in violence are believed to limit positive outcomes, the relationship has not been established. Our long-term goals are to identify the social and psychological patterns that not only distinguish between dropouts and those who complete school, but that identify youths who are likely to fail in the future as well. The results should help focus prevention and treatment programs on the factors that need to be changed to reduce dropping out, drug use, and violence, and to increase the chances of positive outcomes for those who do leave school.

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