A SURVEY OF SUBSTANCE USE AND RELATED FACTORS AMONG SECONDARY SCHOOL STUDENTS IN GRADES 7,9, AND 11 IN THE COUNTY OF ORANGE, FALL 1983

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EXECUTIVE SUMMARY

The Secondary Substance Use Survey, commissioned by the Drug Abuse Services of the County of Orange, was administered in November, 1983 to 6,682 students in eight of the 15 unified or high school districts in the County. Approximately equal numbers of students were assessed in grades 7, 9, and 11. The school districts which participated in the survey comprise a representative, stratified sample of the total student population in the County at the grade levels assessed.

The students who took the survey were randomly sampled from grades 7, 9, and 11 of all secondary schools in each district in the sample. While participation of both school districts and students was voluntary, there was no significant loss of either districts or students because of non-cooperation. An additional survey of day students enrolled in general studies classes of three of the eight community colleges was also conducted. The results of the community college survey will be provided in a supplemental report.

The information generated by the survey is intended for the general public and its representatives, for those affiliated with county and community agencies involved in prevention, intervention, and treatment of substance use, and for all who are associated with schooling.

The survey questionnaire assessed the frequency of use on a scale of "never" to "once a day or more often" of 18 psychoactive substances including three types of alcohol, 13 other drugs or types of drugs such as marijuana or inhalants, and two combination preparations of drugs. Frequency of polydrug use, defined as using more than one substance on a given occasion, was also assessed. Students who had tried one or more of the substances were also asked the age at which they first tried alcohol or other drugs, the age at which they first experienced intoxication, and the age when they began using regularly, if applicable.

In order to identify factors associated with substance use, students were asked to indicate the proportion of adults they knew who used four types of substances. They were also asked what their closest friends would think of other students who (a) become intoxicated or high at social events or who (b) drink or use regularly without visible signs of intoxication. These questions assessed the social context of substance use. So did additional questions on parental attitude to the student's use of alcohol and marijuana. Students were also asked to rate the harmfulness of "regular" marijuana and alcohol use. Finally, students indicated their primary source of information about drugs, rated both parents and teachers on how much they knew about drugs, and rated prevention classes taken in school on

several dimensions of quality.

Without doubt, the single finding of the survey which will be most noted is that approximately 13.5% of 11th grade students reported daily use of one or more of the substances assessed. This is a high figure for daily use, since a substantial proportion of daily users are likely to be dependent or even addicted. Moreover, the more frequently students use substances, the more they are likely to engage in polydrug use, that is, using more than one substance on the same occasion. Polydrug is an especially dangerous form of substance use. This assertion holds for those who use alcohol as much as it does for users of other drugs. In this regard the survey confirms the impressions of personnel in intervention and treatment agencies who have direct contact with problem drinkers and users. Among youth, frequent use of any specific psychoactive substance, including alcohol, is usually accompanied by use of other substances, often on the same occasion. The problem user whose use is confined to a particular substance, including alcohol, may be virtually an anomaly among youth.

The following characteristics, derived from the 11th grade sample, are associated with more frequent alcohol, other drug, and polydrug use:

* Believing that one's closest friends accept or even approve of other students who get loaded at social events or school

* Believing that one's closest friends accept or even approve of other students who use one or more substances on a regular basis, though without getting obviously loaded or causing problems

* Depending primarily on one's own experience as the primary source of knowledge about drugs rather than on that of friends, school classes, or parents

Associated specifically with the use of drugs other than alcohol are the following:

* Knowing substantial numbers of adults who use marijuana

* Viewing regular use of marijuana as less harmful (than do other students)

* Believing that one's parents are relatively less opposed to marijuana use (than do other students)

Finally, an additional set of characteristics is associated specifically with the use of alcohol:

* Knowing substantial numbers of adults who use alcohol

* Viewing regular alcohol use as less harmful (than do other students)

* Believing that one's parents are relatively less opposed to alcohol use (than do other students)

The above findings demonstrate convincingly that students who use substances more frequently feel themselves supported by the attitudes and behavior of their closest friends, the models of substance use provided by adults, and even by what they perceive to be a lower level of opposition to alcohol or marijuana use on the part of their parents. This is the social context which sanctions and supports substance use. In addition, such students are more likely to deny the harmfulness of regular use of alcohol or marijuana and to depend primarily on their own experience for knowledge about drugs.

When do students begin to use alcohol and other drugs in a significant way? From a psychological perspective, the important question is not when they first try substances, but rather when they first experience intoxication. Intoxication, rather than mere experimentation, is the critical and irreversible experience from which dependency and addiction or controlled use or abstinence will evolve. It is the end of innocence.

The survey showed a surprising amount of early experience, especially for alcohol. For example, fully two thirds (66%) of 7th graders reported having tried beer or wine by a median age of 9.6, in other words before or during the fourth grade. However, from this larger group only 19% had experienced intoxication from beer or wine. The median age for first intoxication on these substances was 10.8 (end of fifth grade).

Based on data for 11th graders (which give the most complete picture), the median age of first intoxication, whether from alcohol or other drugs, falls during the latter part of the 13th year, or in Grade 8. By the 11th grade, 69% of the students have been intoxicated from alcohol and 47% from other drugs. The age interval of 12 to 14 years comprising the junior high years is the modal (typical) age of first intoxication for both alcohol and other drugs. Thirty-five percent of 11th graders reported their first alcohol intoxication during that period as compared to 23% for drugs other than alcohol. However, as many as 9% reported intoxication from alcohol, and 6% from other drugs, at age 11 or earlier, or during the elementary years. In contrast, the modal age for regular use is about equally divided between the junior and senior high years (13% for the former and 14% for the latter).

The findings for frequency of substance use will be summarized by grade level.

For students in Grade 7 the three most used substances in order of average frequency were beer, wine, and hard liquor. Alcohol, though legally not a "licit" substance for this or the other age groups in the study, was invariably the most frequently used substance. In addition, two other substances used relatively often were, again in order of frequency of use, inhalants and marijuana.

The level of use of inhalants for this and other grade levels was surprisingly high in comparison with those reported nationally in in other localities of California. The specific substance or substances most commonly inhaled were not identified in the survey. There is informal evidence that hydrocarbons such as gasoline or paint thinner have largely replaced inhalants previously in use. Since hydrocarbons are directly toxic to neural tissue, the extent to which such substances are being used as inhalants should be ascertained. The dangers involved in use of inhalants should be a special focus of preventions efforts in the County.

The percentage of 7th grade students using specific substances at least once during the previous six months again reveals the dominance of alcohol: beer-51%, liquor-24%, inhalants-17%, and marijuana-13%. These are the primary substances for 7th graders. Amphetamine use, which will rise significantly with grade level, was reported by only 4% of 7th grade students.

Regular use of substances is defined in this report at two levels of intensity: (a) once a week or more often and (b) once a day or more often. Despite relatively high percentages of occasional use just cited, 7th grade students hardly register on these two measures of regular use. Three percent use beer once a week or more often. The other substances cited above were used by less than 2% of 7th graders on a weekly basis. Reported daily use was minuscule, falling below 1% in all cases.

Polydrug use, or the use of more than one substance on the same occasion, was reported by approximately 10% of 7th grade students. Of these, 2% engaged in polydrug use more than once a month or more often.

Turning to Grade 9, the average use of common substances is ordered as follows: beer, wine, hard liquor, marijuana, amphetamines, inhalants, hashish, and cocaine. This is a longer list than was the case for grade 7. Inhalants, usually favored by younger users, dropped slightly below amphetamines in average frequency of use but still remain at relatively high levels. Two powerful drugs, hashish and cocaine, make their first appearance.

The percentage of 9th grade students using each substance at least once in the preceding six months shows significant increases over grade 7: beer-68%, liquor-50%, marijuana-32%,

inhalants-17%, amphetamines-16%, hashish-10%, and cocaine-7%. As anticipated, use of amphetamines rises significantly by grade 9. The high level of inhalant use continues to be surprising.

Regular use on a weekly or more frequent basis reaches significant levels in grade 9. Substances used weekly by relatively large percentages of students were: beer-17%, marijuana-9%, and liquor-7%. Amphetamines were used weekly by only 2% of the 9th grade students, and the other substances less frequently.

Regular use on a daily basis also registered significant levels by grade 9. Especially significant is the fact that marijuana leads the list for the first time with 5% of the students using this substance daily. The closest competitor is beer at somewhat over 2% daily use. Other substances were used by less than 2% of students on a daily basis. The reversal of marijuana and alcohol among daily users is noteworthy, since there is a strong presumption of dependency associated with daily use. The preferred substance for daily users (still at grade 9 a relatively small group of students) is thus a "street" drug rather than alcohol.

Polydrug use was reported by 25% of 9th grade students. This is a very significant rise from the level at grade 7. Somewhat over 7% of 9th grade students reported this type of use more than once a month.

For students in Grade 11, the average frequency of use is ordered as follows: beer, wine, liquor, marijuana, amphetamines, cocaine, hashish, and inhalants. Inhalants have dropped to the bottom of the list of frequently used substances, but their level of use was still relatively high compared to previous surveys conducted elsewhere. The three types of alcohol still lead in average frequency of use.

The percentages of 11th grade students using each substance at least once in the preceeding six months shows further significant increases over earlier grade levels: beer-76%, liquor-59%, marijuana-41%, amphetamines 25%, cocaine-19%, hashish 17%, and inhalants-12%. Several other substances or classes of substances were used by between 5 and 10% of 11th grade students, including tranquilizers-9%, sedatives-8%, barbiturates-6%, and LSD-5%. The relatively small percentage for LSD compared to what would have been registered several years ago reflects the loss of favor for this drug. The same is true for PCP, an especially dangerous substance.

The percentages of 11th grade students using various substances on a weekly or more frequent basis were: beer-30%, marijuana-15%, liquor-10%, and amphetamines-5%. Weekly cocaine use stood at slightly over 2% of the students.

The trend toward marijuana as the preferred substance for daily use continues in grade 11. Nine percent of 11th grade students reported daily use of marijuana. Other figures were: beer-5% and amphetamines-2%. The other substances were used by very small percentages of daily users.

Polydrug use was reported by 33% of 11th grade students. Of these, almost 14% engaged in such use more often than once a month. It was asserted at the beginning of this summary that regular polydrug use, an especially dangerous type of substance use, is almost the norm among daily users.

It was noted at the beginning of this summary that students who use substances reported knowing more adults who use the same substances, and that such students also perceived their closest friends to be quite tolerant of other students who exhibit intoxicated behavior or who simply use substances on a regular basis. An increasing proportion of students at each higher grade level report knowing significant numbers of adults who drank or used marijuana or pills (to get high). Only one third of the 7th graders estimated that many or most of the adults they knew drank beer or wine. By grade 11 this proportion increased to almost 60%. Twenty-seven percent of 11th graders reported that many or most of the adults they knew used liquor, 17% indicated the same for marijuana, and 5% for pills to get high. Many students apparently know significant numbers of adults who model substance use.

In a similar manner, there is a progression with advancing grade level in the extent to which students perceived their closest friends as willing to accept or even join another student who gets high or who simply uses regularly. Among 7th graders only about 15% believed that their closest friends would accept or join another student in either category. By grade 11 about one third indicated that their closest friends would accept or join another student who gets high at social functions or school. As many as 44% believed that their closest friends would accept or join a student who used drugs or alcohol on a regular basis. There is thus an increasing level of perceived peer acceptance of both intoxicated behavior and regular use as students advance in grade level. On the positive side, the survey shows that even at grade 11 more than half of the students did not perceive their friends to be tolerant of either type of behavior.

When asked about their primary source of information about drugs, students, irrespective of grade level, most frequently cited school classes and friends. The former were most commonly selected by 7th grade students, but declined significantly in importance by grade 9. Friends were the most important sources of information for 9th and 11th graders, but declined somewhat for the latter, especially in relation to the student's own

experience. It has already been noted that dependence on personal experience is highly correlated with substance use. A recent survey in the Conejo Valley school district suggests that ratings for school classes become more positive as improvements are made in the prevention education curriculum.

When asked to rate the harmfulness of regular alcohol and marijuana use, most students rated both as harmful. However, younger students were more likely to see regular marijuana use as harmful than they were regular alcohol use (86% to 71% at grade 7), but this difference mainly disappears by the 11th grade (73% to 71%). This trend toward similar harmfulness ratings for the two substances reflects increasing sophistication among older secondary students, many of whom may be aware that the harmfulness of alcohol tends to be underestimated in adult society. However, almost 30% of 11th grade students viewed regular use of either substance as harmless or only somewhat harmful. Thus, almost one third of 11th grade students may be unaware of the implications of regular substance use.

Students also rated their parents' attitude toward student use of alcohol vs. marijuana. Not suprisingly, students, regardless of grade level, perceived their parents to be strongly against marijuana, but much less consistent in their attitude toward alcohol. Parents were also seen as more accepting of student alcohol use by older students, while there was only a slight trend toward greater parental acceptance of marijuana use. These results suggest that there is a real need for parent and community education on the harmfulness of alcohol use for teen-aged youth.

Students were asked to rate both teachers and parents on their knowledgeability about drugs. At all three grade levels parents received higher ratings than teachers, although both got progressively lower ratings at higher grade levels. However, even at the 11th grade more than half of the students agreed with the assertion that parents and teachers could be trusted in this regard.

Student ratings of the quality of drug and alcohol education classes revealed generally high ratings at grade 7, moderately high ratings at grade 11, and definitely lower ratings at grade 9. These ratings were made at the beginning of the school year, and thus apply primarily to classes taken the previous year. Since the junior high years have been identified as the modal period for both first substance use and the first intoxication or high, the lower ratings of school classes at this level are definitely not a positive finding.

Finally, sex and ethnic differences were also noted in the report. In general, girls reported lower substance use than did boys, except for wine and amphetamines. The former

difference is probably related to the fact that girls drink considerably less beer than boys, making up some of the difference in wine consumption. The slightly higher level of amphetamine use by girls may be related to the specific effects of the most commonly used of the "upper" drugs. Girls experience more depression than boys. "Upper" drugs like amphetamines tend to counteract feelings of depression. Girls also perceive both parents and peers to be more strongly opposed to substance use than do boys.

The survey revealed ethnic and racial differences on all measures of substance use. These results must be interpreted with caution, since the numbers of students in the sample were quite small for groups other than whites and Hispanics. The very small sample of students identifying themselves as American Indian (only 4.8% of the total sample) reported substantially higher levels of substance use in all categories. Whites (66.5% of the total sample) were second in total substance use, while Hispanics (10% of the sample) and Blacks (3% of the sample) ranked third, distinguished primarily by somewhat higher rates of alcohol use on the part of Hispanics vs. slightly higher rates of marijuana use on the part of Blacks. Lowest of all in measures of substance use were Asians (5.2% of the total sample). The reasons for these ethnic and racial differences are undoubtedly complex. The relatively high levels of use of white students compared to three of the four other groups will not be surprising to those who have extensive contact with the teen-age user population.

A SURVEY OF SUBSTANCE USE AND RELATED FACTORS AMONG SECONDARY SCHOOL STUDENTS IN GRADES 7, 9, AND 11 IN THE COUNTY OF ORANGE, FALL 1983

This report summarizes the findings of a survey of substance use among 7th, 9th, and 11th grade students enrolled in public secondary schools of the County of Orange. The survey was conducted in November, 1983, on a representative sample of approximately 6,500 students enrolled in eight of the fifteen unified and high school districts of the County. Additional data were collected on a sample of approximately 800 first year community college students in three colleges in the County. Results for this latter group of students will be summarized in a supplementary report.

Goals of the Survey

This study was commissioned by the Drug Abuse Services of the County of Orange for use in planning County programs in primary prevention and early intervention. Its primary goal is to provide information which will enable staff of Drug Abuse Services to (a) assess programmatic needs, (b) establish priorities for types and location of programs, and (c) accurately inform the public about the nature and extent of the problem of substance use among secondary school students.

For school districts in the County the information generated by the survey will also be useful for curriculum development and the formulation of school policy. The findings will relate

to concrete steps that schools and community organizations can reasonably be expected to take on the basis of what has been learned.

Specific content of the questionnaire used in the survey will be described in a later section. However, the information generated will address the following information needs:

1. Assess which substances or combinations of substances are used by students and how frequently each is used (curriculum content, law enforcement).
2. Make it possible to identify special target groups of students, e.g., numbers of regular users of single substances, numbers of polydrug users, alcohol vs. other drug users, etc. (develop identification strategies and treatment programs).
3. Determine extent to which students use adults as models for substance use (parent and community education).
4. Establish when students begin using various substances (age or grade level assignment of curricula and programs).
5. Assess student perceptions of parental attitudes toward substance use (parent and community education).
6. Assess student perceptions of peer acceptance of substance use and abuse, e.g., the social climate (involvement of student organizations and self-help groups).
7. Assess student evaluations of school drug and alcohol curricula (program evaluation and revision and staff development).

in all six grade levels should be assessed, or whether something could be gained by testing students at fewer grade levels. Given the size of the total population of students and the practical limitations posed by funding available for the survey, the latter appeared to be a more realistic approach. Moreover, it was obvious that school district administrators, who would arrange and administer the survey, would prefer that fewer grade levels be tested. This latter consideration was important in securing cooperation at the district level.

Grades 7, 9, and 11 were generally agreed upon by both county and school district representatives to be of special interest. Grade 7 provides an entry level baseline to the teenage years and is the beginning of junior high school under traditional school organizational plans. Grade 9 is the end of junior high school or the beginning of high school, again depending on district organization, and under either plan a critical year. From an educational and planning perspective a grade 11 assessment was preferable to a grade 12 assessment, because at this level there is still time for county, school, and community intervention and prevention programs to apply to the results. The 12th grade is somewhat late to introduce new policies and programs.

Given the considerations just elaborated, the three populations assessed in the survey can be defined as English speaking students in Orange County school districts enrolled in grades 7, 9, or 11. These three populations are "reference" populations in that the samples assessed should, insofar as possible, be repre-

sentative of English speaking 7th, 9th, and 11th grade students for the County as a whole.

Sampling Strategies: District Level

Cooperation of school districts in the survey was voluntary. There is no mechanism at the county level for requiring district participation. Forced participation would in any case have been counterproductive. It was hoped that districts would agree to participate because of concern about the problem of substance use by youth and because the information generated would be useful in program planning and development.

Experience suggested that not that all school districts would be willing to participate in a survey of this type. Some district administrators would have other priorities at the time the survey was to be administered and would be unable to assign staff time. For this reason it was more appropriate to select a sample of districts representative of the county as a whole. This strategy allows for replacement of sampling units. In other words, if a district were unable to participate, another similar district could be selected, thus preserving the representativeness of the sample. If, on the other hand, all 15 districts had been approached and five were unable to participate, the sample would probably be in some significant way biased, and there would be no way to compensate for that bias by selecting replacements.

The California Assessment Program administered by the State Department of Education collects and summarizes basic demographic

information on student populations by school district. The most recent summary data for Orange County districts (1981-82) were kindly provided early in 1983 by Dale Carlson of the CAP program. These data for each district consisted of (a) the state stanine score on a Parental Education Index or PEI (a measure of socioeconomic status), (b) the stanine score on percent of students from families receiving Aid to Families with Dependent Children or %AFDC (a second socioeconomic measure), (c) percent minority students, and (d) Average Daily Attendance or ADA. These data were used to rank Orange County school districts on enrollment, socioeconomic status, and percent minority enrollment in order to obtain a representtaive sample of approximately half of the 15 unified or high school districts in the County. In addition, an effort was made to distribute geographically the districts selected.

Eight school districts were selected by inspecting frequency distributions on the above variables. Of the initial eight, one district declined to participate because of other special testing commitments. It was replaced by a district of similar size, socioeconomic makeup, and ethnic mix. Frequency distributions on enrollment, parental education, %AFDC, and percent minority are provided in Tables I-1 to I-4 of Appendix I.

Inspection of these tables confirms that the final sample of eight districts is representative of the total population of county school districts on the variables just cited. In addition, the districts comprising the sample are distributed

geographically in the County of Orange in a manner which balances both population density (high in the north) and location. The participating districts are:

Anaheim Union High School District (north central)
Brea-Olinda Unified School District (north)
Fullerton Joint High School District (north)
Garden Grove Unified School District (north central)
Irvine Unified School District (central)
Placentia Unified School District (north)
Saddleback Valley Unified School District (south)
Santa Ana Unified School District (central)

It should again be emphasized that participation by the above districts was entirely voluntary. Cooperation was sought by meeting with district superintendents and their staffs to explain the purpose of the survey, the guarantee of anonymity to participating students, and the mechanics of participating. In all cases superintendents were highly receptive and fully aware of the potential importance to school and community of objective information on the extent and variety of substance use among youth.

One problem developed in an otherwise positive picture.The Fullerton District does not enroll 7th grade students. Seventh graders within Fullerton's boundaries are enrolled in five separate elementary districts. A meeting was held with the five superintendents of Fullerton elementary districts and all expressed interest in participating in the study. All submitted the issue of cooperation in the survey to their respective school boards and, in each case, received a negative response. The seventh grade sample thus does not include students who would enroll later in Fullerton Joint High School District. Fortunately,

Fullerton falls in the mid range of the socioeconomic measures, and loss of this group of seventh grade students is not likely to bias the 7th grade sample in any discernible way.

Sampling Strategies: School and Student Level

Estimates of the proportion of students in each district in limited or non-English Speaking status were obtained from the County Department of Education. These were used to estimate total English-speaking enrollments in the districts sampled for the three grade levels for Fall, 1983:

Grade 7: 12,063
Grade 9: 16,344
Grade 11: 14,751

It was apparent that a 20% sample at each grade level would yield a total sample of 8,630 students, approximately the figure allowed for in project funding. It was also apparent that 20% of the students could be sampled at each grade level of each school in each cooperating district, by-passing the very complex problem of sampling schools within districts. The districts themselves therefore were asked to randomly sample 20% of students in all schools at each of the three grade levels. Instructions on random sampling of students were supplied to district administrators and are provided in the Instructions document reproduced in Appendix II.

In summary, the three reference populations for the 1983 Orange County Substance Survey were 7th, 9th, and 11th grade English-speaking students enrolled in regular or continuation schools of the 15 unified or high school districts of the County.

The sample consisted of 20% of the English-speaking 7th, 9th, and 11th grade students enrolled in regular or continuation schools in the eight representative school districts listed above.

Securing Cooperation of Parents and Students

In surveys of this type it is vital that both students and their parents understand and accept four principles: (1) accurate, objective information about student use of alcohol and other drugs is highly useful for prevention and intervention, (2) the anonymity of participants is absolutely guaranteed, (3) that students were selected randomly rather than because they were suspected of using drugs, and (4) that participation in the survey is voluntary. These points were made in a proposed letter to parents provided to the participating districts for optional use. It turned out that six of the districts chose to send the letter on district letterhead to parents whose children had been selected. A copy of the letter sent out by the Santa Ana district is included in Appendix II.

District administrators supervising the assessment were asked to reiterate the above principles to students assembled in the testing room. It was requested that the school principal take on this assignment. The overall purpose was to emphasize the seriousness of the task, but in an atmosphere that was in no way punitive or coercive.

Students were to be seated in a way that would guarantee personal privacy in responding. When finished, they were asked

to drop the completed questionnaire in a large box in an isolated section of the room. The conditions of anonymity were thus readily apparent to all participating students. The document stating these and other instructions to local school personnel is also provided in Appendix II.

The Questionnaire

The survey questionnaire evolved from two sources. Questions assessing the frequency of use of various psychoactive substances were developed and used in a long term investigation of student drug use sponsored by the National Institute on Drug Abuse and conducted by the UCLA Center for the Study of Adolescent Drug Abuse Etiologies. This set of questions was shortened somewhat for the current questionnaire. Additional items on polydrug abuse have been added. The latter were developed to assess the growing use of packaged combinations of substances such as "loads" (doriden and codeine) and other use of more than one substance on a given occasion. Polydrug use is a disturbing feature of much current adolescent (and adult) substance use because of the unpredictability of its effects on the user and the danger of overdose.

A second and somewhat larger set of questions assessed the attitudes and experiences of students in relation to the use of alcohol and other drugs. These questions were developed to identify factors that relate to substance use by students and to provide information useful in the planning and evaluation of community and school prevention and intervention programs.

These questions have also been tested through repeated use.

A brief description of the questions by content category follows.

1. Single substance use: the first 16 questions assess the frequency of use of 16 substances on a seven point scale of "never" to "more than once a day".
2. Packaged combinations: two questions assess on the same seven point scale the use of the two most common packaged combinations of substances ("loads" and "T's and blues").
3. Polydrug use: this item assesses on a six point scale from "never" to "more than ten occasions" the number of occasions on which more than one substance was used in the previous six months.
4. Age of first use and intoxication: this set of seven items elicits, separately for alcohol and other drugs, (a) student's age the first time he or she tried the substance, (b) age the first time intoxication was experienced, and (c) age when regular use (once a month or more often) began. Each of these items has a "never did" alternative for students who have never used a given substance. These items were developed to determine the ages at which children begin to use substances and experience their effects. Such information will help define target populations and, if measured over the long term, provide important evaluative

information on the effects of prevention efforts.

5. Number of adults who use: students were asked how many of the adults they know use each of four classes of substances (beer or wine, liquor, marijuana or hashish, and pills to get high) on a scale of "none" to "all". These items were designed to assess the availability of adult models of substance use.

6. Social climate: two questions assess the degree of approval vs. disapproval the respondent's closest friends would be likely to feel toward (a) a student who gets obviously intoxicated on drugs or alcohol on a regular basis vs. (b) another student who uses regularly but who does not show signs of intoxication. These items measure the perception by students of the social acceptability within their own peer groups of these two types of behavior.

7. Where students learn about drugs: students were asked to indicate which of four sources provides them with the most knowledge about drugs: friends, parents, school classes or programs, or their own experience. This item is useful for evaluating the credibility and influence of school programs vs. other sources of information.

8. Perceived harmfulness of marijuana vs. alcohol: students are asked to rate marijuana vs. alcohol in terms of the harmfulness associated with daily use. These ratings

provide important information for planning prevention education.

9. Parents' attitudes about marijuana vs. alcohol: students rate attitudes of their parents about student use of marijuana and alcohol. Parental attitudes have been found in previous research to relate to student substance use and may reflect to some extent the effects of community and school prevention programs.

10. Ratings of teacher and parent knowledgeability: students are asked to rate their parents and teachers on knowledgeability about drugs. Results of these ratings are relevant to inservice training of teachers and for community education.

11. Ratings of drug/alcohol education: students rate on six semantic differential scales (e.g., "helpful" vs. "unhelpful") the quality of substance education courses they had the previous year. This information is useful for evaluating community and school programs.

In addition, on the facesheet of the questionnaire students were asked to indicate their grade level, sex, age, and ethnic classification. This information was used to establish sub-groups of students for purposes of comparison. The questions were written to be understandable to secondary students in both middle and high school. The survey could be completed in ten to 15 minutes by virtually all students.

The Assessment

Cooperating school districts received delivery of the questionnaires on November 4th and were asked to complete the administration before the end of the month. All districts conformed with this request.

In order to determine whether the assessment went smoothly, a brief questionnaire was sent to the administrator who was responsible for the assessment in each district. This questionnaire, reproduced in Appendix II, asked for (a) the specific sampling procedures used by the district, (b) whether a letter was sent to parents, (c) if there were negative reactions from parents or others, (d) if any students, on their own or at their parents' behest, declined to participate, (e) whether the assessment was conducted in special rooms or in regular classrooms, (f) if any problems arose which might bias the results, and (g) the supervisor's answer to the following question from a hypothetical reporter or TV newscaster:

> "Do you really believe that the way in which the survey was conducted in your schools led students to take the drug survey seriously and to respond honestly?"

The last question was designed to elicit the type of response that would be given under conditions of public scrutiny. Two responses, representative of the full set of eight, were:

> "We believe our students were serious about the questionnaire. There were no fun and games."

> "Seriously? Absolutely honestly? Who knows? One would hope that having followed

> Chemical People so closely would have contributed to its credibility. Suffice it to say that we got good reports from the schools."

The "Chemical People" was a widely publicized television program on drug use among youth. The program was coordinated with local public meetings in an effort to enhance awareness and facilitate prevention and intervention activity in the community. Without doubt the airing of this series immediately before the survey helped create a favorable climate.

Responses by supervisors to other questions about the survey are summarized next:

(1) Sampling was done on a central computer by four districts. Two districts assigned sampling to local schools according to instructions provided, one of the latter sampled randomly by classroom (required subjects for 7th and 9th graders, 11th grade elective subjects for 11th graders). One district selected its 20% sample of English speaking students at the district level "by hand" from district rosters.

(2) Six of the districts sent the letter (or a modified version) in Appendix II home to parents of participating students. Another made the letter available to those students who wished to take it home. One district developed its own letter to parents.

(3) Five district supervisors reported that they were aware of no parents or students who declined to participate. Two districts reported one or two refusals.

(4) Five of the districts conducted the assessment in special rooms such as meeting rooms or auditoriums. Three districts

tested mainly in regular classrooms, though usually with participating students isolated.

(5) None of the district supervisors reported problems during the assessment. A typical response was:

> "The survey was conducted smoothly and efficiently. No problems were brought to the attention of Testing, Research, and Evaluation personnel."

One respondent astutely suggested a possible problem:

> "A few may not have taken it seriously and thought it smart to respond by giving false answers."

Previous experience in substance use surveys with secondary school students verifies the latter observation. When fully confident of their anonymity, some students will report vastly exaggerated levels and amounts of substance use. Fortunately, only a very few students do so, typically less than 1% of the total sample. These student records were eliminated by means of validity check procedures described in the next section.

The Final Sample

All completed questionnaires were first examined by clerks who removed those unsuitable for keypunching due to (a) absence of identifying information on the face sheet (age, sex, grade, etc.), (b) more than two items left blank, and (c) multiple responses on more than two items (marking two or more alternatives where only one response was specified). Of the total of 6,751 questionnaires returned for the three grade levels, 69, or almost exactly 1%, were eliminated through the initial check on validity. The number of cases by grade level comprising the data sets

originally entered into the computer are given in Table 1. The obtained sample sizes at each grade level are compared to the numbers anticipated had all of the randomly selected students been present on the day of the assessment.

Table 1

Comparison by Grade Level Between Sample N's and Projected N's Based on a 20% Sample of English-Speaking Students[1]

Grade	Projected N	Sample N	% of Projected
7	2413	2069	85.7%
9	3269	2432	74.4%
11	2950	2181	73.9%

The differences between projected and obtained samples are in large part explained by attrition due to absence on the day of testing. Supervisor reports reviewed in the last section reported no basis for any systematic bias at any of the districts, although this question will be addressed again for one of the districts in relation to the district level information which follows. The samples at each grade level are sufficiently large to permit generalization to students in these grade levels for the County as a whole.

A second validity check was performed once the above data

[1]The sample N's do not include 69 cases eliminated before keypunching because of incomplete or otherwise invalid patterns of response.

sets were assembled for computer analysis. It has already been observed that, when students are fully confident of their anonymity, a few may amuse themselves by giving highly exaggerated reports of substance use. Records of this type are readily identified from the following response patterns: (a) reported use of all substances on a daily basis or (b) (more conservatively) reported regular use of two or three potent substances (such as hard liquor and heroin or marijuana and cocaine) one or more times a day. Records showing these patterns were eliminated.

This second culling of cases was based on the assumption that the effects of daily or more frequent use of these substances in combination would render it impossible for a secondary student to function well enough to remain in school. A total of 47 such cases, or .7% of the initial data set, were identified and eliminated by this final check on the validity of responses.

It may well be that the 69 incompletely filled-out questionnaires eliminated clerically plus the 47 questionnaires with exaggerated patterns of substance use were submitted by students who use alcohol and drugs more than the average student. In other words, the findings with these students eliminated might be biased in the direction of less overall drug use than would be the case if they had been included.

There is no way to test this hypothesis, although it is a plausible one. Fortunately, the number of students eliminated is quite small compared to the total assessed. The largest group eliminated (incomplete, multiple responses, etc.) were

unusable in any case. The less then one percent of improbably excessive users most certainly would have biased the overall results in the direction of higher levels of substance use. It is best to eliminate this known distortion.

Table 2

Comparison by School District of Obtained vs. Projected Sample Sizes and Percentages of Total

District	Projected		Obtained	
	N	%Total	N	%Total
Anaheim	2260	(26.2%)	2084	(31.2%)
Brea-Olinda	231	(2.3%)	157	(2.3%)
Fullerton	1107	(12.8%)	951	(14.2%)
Garden Grove	1627	(18.8%)	743	(11.1%)
Irvine	749	(8.7%)	696	(10.4%)
Placentia	764	(8.8%)	558	(8.4%)
Saddleback	1071	(12.4%)	903	(13.5%)
Santa Ana	822	(9.5%)	590	(8.8%)
Total	8631		6682	

Table 2 reports the obtained vs. projected sample numbers by school district. Inspection of this table reveals that six of the eight districts were at or within one or two percentage points of their projected size relative to the total sample. Anaheim accounted for 4% more of the total sample than anticipated, while Garden Grove fell under by a somewhat larger margin of about 7%.

The relatively lower participation rate at Garden Grove apparently reflected an especially democratic stance on the part of administrators of the District about the level of local school participation. However, there is no evidence that the Garden Grove sample is in any way biased as to the students assessed. All schools in the District did participate.

The percentages of male and female students in the obtained

Table 3

Number and Percentage of Male and Female Students in Sample Compared to Populations for Grades 7, 9, and 11 in Participating Districts[2]

Sex	Population	Sample
Male	24,928 (51.6%)	3,330 (51.0%)
Female	23,380 (48.4%)	3,204 (49.0%)

sample are compared in Table 3 to district totals for the grade levels assessed. It is readily apparent that the sample is balanced with respect to gender and very close to the proportion for the population at each grade level.

Finally, Table 4 provides a breakdown of the racial and ethnic composition of the total sample. These figures are not compared with population figures on ethnic representation in

[2]The total for the eight districts in the sample includes Limited English and Non-English Speaking students.

each district. Data from the County were not available on the proportion of racial or ethnic group which is LES or NES. Estimates

Table 4

Racial and Ethnic Composition of Total Sample[3]

	Asian	Black	Hispanic	Amer. Indian	White	Other
Number	339	198	664	317	4,356	679
Percent	5.2%	3.0%	10.1%	4.8%	66.5%	10.4%

of population totals of English speakers in each group therefore could not be derived.

Table 4 reveals that the largest minority ethnic or racial groups are Hispanics followed by Asians. This is consistent with the patterns for the County as a whole.

In summary, the total valid sample is roughly balanced with repect to district size, is comprised of appropriate proportions of male and female students, and includes members of the major racial and ethnic groups enrolled in County secondary schools. Considering that the national survey of 12th graders conducted annually by the Institute of Social Research by the University of Michigan is based on samples of only 16,000 to 17,000 students, the total valid sample of 6,682 students in Orange County is indeed a sizable number from the perspective of statistical

[3]Does not include 129 students who did not report ethnicity.

precision.

Findings of the Survey

The survey findings will be organized under six topics: (1) measures of frequency of use, (2) age of first use and first intoxication, (3) social context of substance use, (4) attitudes relating to substance use, (5) student ratings of knowledgability of parents and teachers and quality of prevention education classes, and (6) relationships between frequency of use and other factors. Concise summary tables will be provided in the text itself, while more complete findings will be provided in appendices to each section.

Frequency of Substance Use

There are several ways to assess current (last six months) frequency of use of psychoactive substances, given that the seven points on the scale used on the questionnaire varied from "never" to "more than once a day". The average frequency of use on this scale provides an overall measure which is especially useful for detecting change over time, but which is less meaningful intuitively than the following percentage measures: percent used at least once, percent using once a week or more often, and percent using once a day or more often. All of this information is provided by sex of respondent in Appendix III. The various percentage measures are dealt with in more detail below:

Average frequency of use: Tables III-1 through III-3 of Appendix III present average frequency of use of the 18 substances or combination-substances assessed. These data are broken down

by sex and grade level. As just noted, means are most useful for detecting trends over time. The means in these tables are included primarily to provide a basis of comparison should future surveys of substance use be conducted.

A few specific observations can be made despite the above qualification. The mean for beer use over the previous six months for 11th grade students was 3.13, with a rating of 3 representing "a few times" in the last six months. Beer is the most commonly used substance, and its use by male students exceeds that for females (3.39 vs. 2.81). In contrast, 11th grade girls have a slightly higher mean for wine than do boys (2.4 vs. 2.18). The overall mean (sexes combined) for hard liquor is 2.29, with a rating of 2 defined as "once or twice" in the last six months. The fourth highest mean after the three forms of alcohol is 2.18 for marijuana, with boys again well ahead of girls (2.43 vs. 1.91).

Sex differences are consistently apparent in Tables III-1 through III-3. Male students report higher use of each substance with the exception of wine (as already noted) and amphetamines. The difference for the latter drug is slight and probably reflects the fact that girls are more likely to use diet pills or use amphetamines to medicate themselves for depression (the common street name for amphetemines being "uppers").

Ethnic differences in average use of each substance are summarized in Tables III-4 to 6 of Appendix III. The three tables compare the five major ethnic groups, American Indian,

Asian, Black, Hispanic, and White, by grade level. Ranked in order of overall amount of substance use the groups are: (1) American Indian, (2) White, (3) Hispanic and Black, and (4) Asian. Hispanic and Black students differ primarily in that the former use somewhat more alcohol and the latter more marijuana.

To show how strong the differences are, results for beer,

Table 5

Average Use by Ethnic Group of 11th Grade Students during Previous Six Months of Six Substances

Substance	Amer. Ind.	Asian	Black	His-panic	White
Beer	3.78	2.05	2.30	2.81	3.23
Liquor	2.70	1.65	1.58	1.96	2.40
Marijuana	3.36	1.45	1.95	1.83	2.21
Amphetamines	1.74	1.26	1.23	1.28	1.60
Cocaine	1.82	1.07	1.19	1.24	1.42
LSD	1.34	1.00	1.02	1.07	1.14
N	79	114	76	211	1,622

liquor, marijuana, amphetamines, cocaine, and LSD for grade 11 students are reproduced here in Table 5. A word of caution is in order. The number of cases in other than white groups is relatively small, especially for American Indians and Blacks, who total less than 100 at the 11th grade level. These two estimates in particular are less reliable. Also recall that the scale used refers to use in the previous six months with 1 = no use, 2 = once or twice, 3 = a few times, 4 = once a month,

etc. These findings for average frequency of substance use by ethnic group will be supplemented later by comparisons among the same groups for number of abstainers vs. regular users.

Percent using: Table III-7 of Appendix III provides by grade and sex the total percent of students using each of the following seven commonly used substances one or more times in the previous six months: beer, liquor, marijuana, amphetamines,

Table 6

Percent of Students by Grade Level Using
Seven Commonly Used Substances in the Previous Six Months

Substance	Grade (Age) 7 (12)	9 (14)	11 (16)
Beer	50.8%	67.8%	75.6%
Liquor	24.1	50.1	58.6
Marijuana	13.0	31.7	41.4
Amphetamines	4.2	16.0	24.7
Cocaine	3.0	6.7	19.1
LSD	1.3	4.1	7.3
Inhalants	17.8	17.0	12.2

cocaine, LSD, and inhalants. These data are summarized in Table 6 by grade level for males and females combined. Table 6 really provides two parallel types of information.

The figures given indicate the percentages of students who used each substance during the previous six months. Subtracted from 100, these same figures indicate the percent who abstained from each substance during that period. Thus, for beer as the most frequently used substance there is a progression from grade

7 where 51% used at least once (and 49% abstained entirely) to grade 11 where 76% used at least once (and 24% abstained). Only for inhalants was there a reverse progression, with more 7th graders using (18%) than 11th graders (12%).

It is especially important to note that the two types of alcohol show the highest rates of total use at all grade levels. Even in the 7th grade 24% of the students reported trying hard liquor at least once. Marijuana, by comparison, was tried at least once by only 13% of the 7th grade students and inhalants by a surprsingly high 18%. Alcohol remains the most commonly used drug throughout the three grade levels. The extent to which alcohol is also the first drug used will be examined in a later section.

Table 6 also shows that by grade 11 the following percentages of students had used each of the seven substances at least once in the previous six months: beer 76%, liquor 59%, marijuana 41%, amphetamines 25%, cocaine 19%, LSD 7%, and inhalants 12%. Alcohol is the only substance used at least once by more than half of the 11th grade students. Marijuana use is substantial, but well below that for hard liquor. Considering that it is an expensive and powerful drug, the use of cocaine at least once by almost 20% of these students may surprise many.

Comparisons among the five ethnic groups on percent using each substance during the previous six months are provided in Table 7. The differences between groups are again strikingly apparent. Moreover, on this measure Black and Hispanic students

are clearly differentiated, with fewer of the former reporting use of any of the seven most commonly used substances. In other words, while Black and Hispanic students are similar on average

Table 7

Percent of 11th Grade Students Using Seven Commonly Used Substances by Ethnic Group

Substance	Amer. Ind.	Asian	Black	His-panic	White
Beer	91.7%	48.7%	54.0%	72.9%	78.2%
Liquor	75.7	35.2	27.4	48.4	63.0
Marijuana	66.5	19.1	30.9	35.8	42.3
Amphetamines	36.3	11.4	6.5	15.5	27.1
Cocaine	39.0	4.3	7.8	13.2	20.4
LSD	23.8	0.0	1.5	4.3	7.2
Inhalants	20.5	7.3	6.4	14.5	11.9

frequency of substance use, a larger proportion of Hispanics report at least some use of each substance than is the case for Black students.

The dramatic nature of these differences among ethnic groups is illustrated in the following observations from Table 7. Ninety-two percent of the small sample of American Indian students had tried beer at least once compared to only 49% of Asian students and 54% of Black students. Sixty-six percent of American Indian students had used marijuana at least once as compared to only 19% for Asians. For White students the figures for beer and marijuana were 78% and 42%, closer to the level of use of the American Indian students than to that of Asian students.

It is naturally of interest to compare the above rates with similar data from other sources. Dr. Lloyd Johnson of the Survey Research Center at the University of Michigan kindly released pertinent results of the 1983 national substance use survey prior to its publication. Before making these comparisons two qualifications must be stated. (1) The national survey is conducted on 12th, rather than 11th, grade students. (2) On the national survey respondents reported on their use over the previous year rather than over the past 6 months as was the case for the current survey. These differences may be of relatively little importance. Substance use may have peaked by grade 11, with little overall increase likely a year later. In addition, asking for use rates over the previous six months (as in the current survey) is likely to produce results that

Table 8

Comparison Between 1983 National Survey of 12th Grade Students vs. Current Survey of 11th Graders on Percent of Students Using Substances at Least Once

Substance	National (grade 12)	West (grade 12)	Orange County (grade 11)
Alcohol	87.3%	82.9%	76.8% (beer) 58.6 (liquor)
Marijuana	42.3	44.8	41.4
Stimulants	17.9	18.2	24.7 (amphe-tamines)
Cocaine	11.4	19.2	19.1
LSD	5.4	4.2	7.3
Inhalants	4.3	4.3	12.2

are similar to an estimate for the previous year (as in the national survey).

Table 8 presents the results for (a) the nation as a whole, (b) the West only, and (c) the Orange County survey results. While the national survey assesses alcohol use in general, and the current survey breaks this category down, it nevertheless appears that a sightly smaller proportion of alcohol use characterizes the Orange County sample, although the one year difference in age may account for this result. However, alcohol use among Western 12th graders is also lower than for the nation as a whole by about 5 percentage points. Marijuana use, higher for the West than for the nation as a whole, is roughly comparable to that reported by Orange County students. The percentage of students reporting use of cocaine in Orange County is virtually identical to that for the West, but definitely higher than that for the nation. Finally, the Orange County sample shows higher rates of use of amphetamines alone as compared to stimulants in general for both the West and entire nation (25% compared to 5%) and especially for inhalants (12% vs. slightly over 4%). The biggest discrepancy in the table is for the latter class of substances.

In summary, when compared to national and Western samples at the 12th grade, somewhat fewer Orange County 11th graders use alcohol and marijuana, the local rates for use of cocaine are identical to the Western rates but higher than for the nation as a whole, while use of amphetamines and inhalants is much

higher locally than for either national comparison group. The reason for the higher use of the latter two substances by Orange County students is not known, nor do we know the specific substances inhaled.

The surprisingly high numbers of inhalant users at all grade levels is a disturbing finding. Many of the substances commonly used as inhalants are directly toxic to body tissue. Hydrocarbons, for example, destroy brain cells. There is some informal evidence that gasoline and solvents such as paint thinner (both in the hydrocarbon family) are being used by children in the County. An immediate inquiry into the specific substances currently used as inhalants would provide essential input to prevention agencies.

Monthly or more frequent use: The most frequent rates of substance use assessed in the national survey are for monthly or more often. Although assessed in the survey, this category of use is not summarized for all substances in Appendix III since the data for once a week and once a day are judged to be more useful indicators of the number of students engaged in regular substance use. However, for purposes of comparison between national and local surveys these data in summary form are provided in Table 9.

The local vs. national results for students using the substances at least once a month contrast rather sharply with those for total use in the previous section. Monthly or more frequent alcohol and marijuana use are considerably lower for the local

sample. The use of stimulants and inhalants is moderately lower. Monthly cocaine use is higher than for seniors nationally, but lower than that for seniors in the West. Only LSD use on a monthly basis by Orange County students compares to that for

Table 9

Comparison Between 1983 National Survey for 12th Grade Students vs. Current Survey of 11th Graders on Percent of Students Using at Least Once a Month

Substance	National (grade 12)	West (grade 12)	Orange County (grade 11)
Alcohol	69.4%	62.9%	40.0% (beer) 20.7 (liquor)
Marijuana	27.0	27.1	19.4
Stimulants	8.9	8.0	7.0 (amphe-tamines)
Cocaine	4.9	10.0	5.9
LSD	1.9	1.2	1.8
Inhalants	1.7	1.6	1.2

the national sample, and this is an infrequently used drug.

The logical explanation for these results is that regular (monthly or more often) use of the substances increases between grades 11 and 12. When total use, including occasional experimentation, is considered, as in Table 8, 11th grade students in Orange County do not differ greatly from the national Western sample (except for amphetamines and inhalants). But when a more regular pattern of use is assessed, the younger students in the Orange County sample generally show lower rates of use. In other words, the national results suggest that some students

who use only occasionally in the 11th grade have "graduated" to a more regular pattern of use by grade 12. This explanation also implies that students who are willing to experiment with alcohol and other drugs have already done so by grade 11, and that further increase in substance use is in the direction of more regular use by those students who have already engaged in experimental use.

Weekly or more frequent use: Students who drink or use weekly or more often have developed a pattern of substance use that is both regular and frequent. Table III-8 of Appendix III provides these percentages for male and female students by grade level. These data are summarized by grade level for the combined sample in Table 10.

At all three grade levels the substance most frequently used once a week or more often is beer, with 14% of 9th graders

Table 10

Percent of Students Using Seven Substances Once a Week or More Often by Grade Level

Substance	Grade (Age) 7 (12)	9 (14)	11 (16)
Beer	3.0%	14.0%	30.0%
Liquor	1.2	6.6	10.4
Marijuana	1.8	8.7	15.2
Amphetemines	0.4	2.0	4.8
Cocaine	0.2	0.7	2.3
LSD	0.1	0.3	0.7
Inhalants	1.3	1.6	0.8

and 30% of 11th graders reporting such use. (While beer is generally viewed as a benign substance, at least in comparison with the others on the list, it is nevertheless true that one can of beer contains approximately the same amount of alcohol as does 1 oz. of 100 spirits.) Marijuana is second on the list, being used weekly or more often by 9% of the 9th graders and 15% of the 11th graders. Table III-8 of Appendix III reveals clear sex differences, with weekly beer and marijuana use by 11th grade boys at 37% and 19%, respectively. These rates are substantial, especially considering that the users are mainly 16 year olds.

It is also apparent that weekly use of substances other than the two types of alcohol and marijuana occur at much lower rates. Weekly amphetamine use is highest at slightly less than 5% for 11th graders, and other substances, including inhalants,

Table 11

Percent of 11th Grade Students Using Seven Substances Once a Week or More Often by Ethnic Group

Substance	Amer. Ind.	Asian	Black	His-panic	White
Beer	34.8%	6.4%	11.5%	21.3%	32.9%
Liquor	10.2	3.3	6.6	6.4	11.5
Marijuana	36.2	4.4	13.5	8.8	15.8
Amphetamines	4.4	1.9	2.8	1.3	5.5
Cocaine	7.1	0.7	3.0	1.3	2.0
LSD	0.0	0.0	0.0	0.0	0.6
Inhalants	1.1	0.8	1.5	0.0	0.9

are used weekly or more often by relatively small numbers of students. The fact that regular use of inhalants is relatively low suggests that most use of this damaging class of substances is only occasional for all but a small group of students.

Table 11 compares the five ethnic groups on weekly or more frequent use of the seven substances. While the overall ordering of the groups is approximately the same, American Indian and White students share the dubious distinction of being well ahead of the other four groups on weekly or more frequent alcohol use. American Indians have a slightly higher percentage of beer drinkers (35% to 33%), and Whites are slightly higher on liquor consumption (10% to 12%). However, the percentage of weekly marijuana users among American Indian students is over twice that for Whites (36% compared to 16%). Hispanic and Black students fall well below the two "leading" groups on all measures and are distinguished from one another primarily in that Hispanics drink more beer on a weekly basis (21% to 11.5%), while using less marijuana (9% to 14%). Asian students rank well below the other groups on all substances when the measure of frequency of use is once a week or more often.

The ethnic groups will not be compared below on a measure of daily or more frequent use, since the number of cases in some of the groups is fairly small (Table II-9, Appendix III). A satisfactory explanation of these comparisons among ethnic groups is not easy to generate. American Indians are generally held to be the most economically and educationally deprived

group in American society. Yet deprivation alone does not explain the results, since Whites as the most favored group economically and educationally rank second in substance use behind American Indians. Another explanation focuses on affluence, arguing that free time, money, and lack of responsibility are the major factors in drug use. This would perhaps explain the high use of substances by White students, but it does not account for the even higher overall use by American Indians. Some sort of interactive explanation would probably be more plausible. At this point the important finding is that some groups are more heavily involved than others and that the differences are substantial.

Daily or more frequent use: Daily use by secondary students of any of the substances assessed surely implies substance dependency by virtually any definition. If the drug is alcohol, some may argue that such use might involve only "a can of beer a day". This argument assigns a special status to beer not granted to marijuana, a less socially approved substance. The relative potency of these two substances does not justify this argument, even if the minimum level of one can of beer a day occurs with the approval of the student's family.

Table 12 reveals that the most commonly used substance when the criterion is once a day rather than once a week is no longer beer, but rather it is marijuana. Only about 5% of 11 graders report using beer once a day or more often as compared to 9% for marijuana. About 5% of 9th grade students report

daily marijuana use. Daily amphetamine use at about 2% of the 11th grade sample involves a small number of students (in this case 41 out of a total 11th grade sample of 2,244).

These results will be used later on to provide estimates of the total number of students at each grade level who are

Table 12

Percent of Students Using Seven Substances Daily or More Often by Grade Level

Substance	Grade (Age) 7 (12)	9 (14)	11 (16)
Beer	0.5%	2.4%	4.8%
Liquor	0.4	1.5	1.3
Marijuana	0.9	4.9	8.9
Amphetemines	0.2	0.8	1.9
Cocaine	0.1	0.0	0.2
LSD	0.0	0.0	0.2
Inhalants	0.5	0.8	0.5

seriously involved with psychoactive substances.

Polydrug use: The use of more than one substance on a given occasion is a disturbing practice whether engaged in by youth or adults. Because it is hard to predict the effects of different substances in combination, the danger of injury and brain damage or death from overdosing is significantly greater. Clinical experience also reveals that polydrug use, usually incorporating alcohol, is now a common practice among adults who seek treatment for substance dependency and addiction. It is likely that these especially pathological patterns of substance use are widely experimented with by young people.

Polydrug use should be a special target of prevention programs of all types.

Table III-10 of Appendix III summarizes by grade level and sex of respondent the percentage of students who reported each of the following frequencies of polydrug use during the 6 months preceding the survey: (a) none, (b) once or twice, (c) 3 - 6 times, (d) 7 - 10 times, and (e) more than 10 times. These results are further summarized below for three combined categories of use (never, a few times, and often) for the total sample at each grade level.

Table 13

Percent of Students by Grade Level Reporting None, Some, or Frequent Polydrug Use

Frequency	Grade (Age) 7 (12)	9 (14)	11 (16)
Never	90.3%	76.9%	66.9%
A few times (1 - 6)	7.6	15.4	19.5
Often (7 or more)	2.1	7.4	13.7

The summary data in Table 13 reveal disturbing trends. At grade 7 about 10% of the students have at least experimented with polydrug use. This figure rises to 23% in grade 9 and 33% in grade 11. Even in grade 7 about 2% of the students report frequent polydrug use ("7 or more times" means more than once a month). By grade 9 this percentage rises to over 7% and to

almost 14% by grade 11. These figures are quite consistent with the rates observed in previous surveys in the Conejo Valley School District.

If one is willing to accept the assumption that polydrug use more frequently than once a month is a reasonably accurate single indicator of the percentage of students who are serious abusers or substance dependent, then the percentages in the bottom line of Table 13 can be used to estimate the approximate number of problem users at each grade level. A more rigorous criterion of 10 or more occasions of polydrug use in the previous six months is given for the sexes separately in the bottom line of Table III-10 of Appendix III. One is tempted to add a mental exclamation point to the observation that 10.5% of the 11th grade boys (and 6% of the girls) reported polydrug use 10 or more times in the previous six months. For grade 9 these figures are 5.4% for boys and 3.6% for girls.

Any of the percentages in Tables 13 and III-10 can be converted to proportions and used to estimate the number of English-speaking students (the current reference population) who are regular polydrug users and hence arguably in the serious abuser category. For example, the eight participating districts in this survey enrolled in Fall 1983 an estimated 14,751 English speaking 11th grade students. Using the criterion of 7 or more occasions of polydrug use in the previous six months (and multiplying by .137) yields an estimated 2,021 students. For the more rigorous criterion of 10 or more occasions the estimate for the eight

districts is 1,239 for the sexes combined. These are large numbers if one accepts the assertion that polydrug use is a particularly dangerous form of substance use.

Age of First Use, Intoxication, or Regular Use

Students were asked to give the age at which they (1) first tried beer or wine, (2) liquor, or (3) other drugs; (4) the age at which they first became intoxicated from alcohol vs. (5) other drugs; and (6) the age at which they first used alcohol vs. (7) other drugs regularly (once a month or more often). For each of these seven questions students could also indicate that they had never engaged in the type of use specified. Table IV-1 of Appendix IV provides by grade level the median age for each of the seven types of use as well as the percent of the grade cohort on which each median was based, e.g., the percent reporting each type of use at each grade level. For example, 66.2% of 7th graders reported that they had already tried beer or wine. The median age for the first such experience was 9.6 years. Only 6.8% of 7th graders reported regular use of drugs other than alcohol. The median age at which regular use began was 11.4 years, and so on.

Medians rather than means are reported in Table IV-1 because distributions for the seven types of use are negatively skewed. Medians, which give the point above and below which exactly 50% of the observations lie, are superior to means for skewed distributions because they are not influenced by extreme scores, in this case by relatively small numbers of students reporting

very early use or intoxication.

The experience of getting high or intoxicated for the first time is the most critical single event in drug and alcohol use. Students who find the experience pleasant and rewarding are likely to continue their experimentation, some of them moving ultimately to dependency and addiction. A student who has been intoxicated or high on any psychoactive substance is no longer innocent. He or she has crossed an irreversible threshold of experience, one which may lead to controlled use or even abstinence on the one hand, or to dependency and addiction on the other. For this reason, it is worthwhile to abstract from Table IV-1 the percent of students who have been intoxicated from alcohol vs. other drugs and the median ages at which this experience occurred. This information is given in Table 14.

This table reveals that almost 20% of the students had felt the effects of alcohol by grade 7, this experience having occurred at a median age of less than 11, e.g., before grade 6. Over 10% reported having been high on some other drug by a median age of approximately 11 years. By grade 11 almost 70% of students had been intoxicated on alcohol and 47% on other drugs, for at least half of both groups the experience having occurred at or before age 13, e.g., during or before grade 8.

At each of the three grade levels considerably more students report having been high on alcohol than on other drugs, but the figures are substantial for both classes of substances. There is not much difference between alcohol and other drugs

Table 14

Median Age and Percent of Sample for First Alcohol vs. Other Drug Intoxication by Grade Level

Substance		Grade (Age) 7 (12)	9 (14)	11 (16)
Alcohol	Md	10.8	12.6	13.7
	%	19.1	46.7	69.0
Other Drugs	Md	11.2	12.8	13.9
	%	12.2	30.0	46.8

in average age for the first intoxication experience, especially for students in grades 9 and 11. Moreover, on the average, this experience occurred earlier than the immediately prior grade level. For example, the modal age of 9th graders is 14 years. At least half of the 9th graders who reported they had been high on alcohol or drugs located this experience in or before their 12th year, e.g., during the 7th grade or earlier. This observation suggests a closer examination of just when it is agewise that students most frequently report first use, first intoxication, and first regular use of alcohol vs. other drugs.

Table IV-2 of Appendix IV summarizes the above information for ages 8 or before, 9 - 11, 12 - 14, and 15 - 17 (corresponding to the traditional early elementary, upper elementary, junior high, and high school age groupings). This table is based on 11th grade data only, since this higher grade level gives the most compete picture. Two generalizations are immediately apparent.

(1) Where the measure is first experimentation or first intoxication, the modal age group is 12 - 14 years, or during junior high school. (2) If the measure is regular use, the modal age shifts upward to ages 15 - 17, that is to the high school years. Table 15 shows these results for the first intoxication experience.

It may be surprising that as many as 2.4% of 11th grade students report having felt the effects of alcohol by age 8. However, alcohol is a readily available substance in many homes. It may be incorporated in the family rituals of some groups, or parents or others may allow their children to have a sip of beer or wine at a very early age. This observation is confirmed

Table 15

Percent of 11th Graders Reporting First Alcohol vs. Other Drug Intoxication at Ages 8 or Earlier, 9-11, 12-14, and 15-17

Substance	Age Groupings			
	8 or before	9-11	12-14	15-17
Alcohol	2.4%	6.8%	35.3%	24.8%
Other drugs	1.3	4.6	23.2	17.8

by the fact that 16% of 11th graders reported having tried beer or wine by age 8. However, for reasons already given the age of first intoxication is a more informative measure.

Table IV-3 of Appendix IV compares national survey findings on age of first use of alcohol vs. other drugs for the class of 11th grade students in Orange County. Because the categories

used in the two surveys were somewhat different, the table compares age of first use of beer and wine and other drugs for the Orange County students with alcohol and marijuana for the national sample. In spite of the differences in categories the two samples show remarkably similar patterns. For example, for ages 12 - 13 (grades 7 and 8) the local vs. national samples report 26.1% vs. 21.8% first use of beer or wine/alcohol and 15.6% vs. 15.3% first use of other drugs/marijuana. The only consistent difference in the table shows considerably more students in the national sample reporting first use of alcohol in the 14 to 15 age range. Overall, these data tend to validate the current survey in the sense that results are generally similar to those of the national survey.

In general, these results confirm that early use and intoxication from both alcohol and other drugs is relatively common, although certainly alcohol leads in all categories. There is a significant escalation in all measures of consumption from ages 12 through 14. The junior high years and earlier are critical periods for both community and school prevention activities.

Social Context of Substance Use

The great majority of youths who experiment with alcohol and other drugs do so in a social context. In other words, drinking and using drugs is ordinarily a type of social behavior. Research shows that adults and peers are influential agents in choices students make about the use of substances. Both can serve indirectly as positive or negative models. Both can

act even more directly to discourage or enable substance use. In this section, the potential influence of adults and peers is reflected in three types of measures: (a) the number of adults the student knows who use four types of substances, (b) students' perceptions of the attitudes of close friends toward other students who drink and use, and (c) the primary source of information about drugs.

Adults who drink or use: Respondents were asked to indicate the proportion of "adults they know" who used each of four types of substances. The 5 point scale for these questions ran from "none" to "all". Complete results are summarized in Table V-1 of Appendix V. Table 16 further summarizes these data for the combined response categories of "many", "most", and "all". The reasoning behind combining these categories is that their combined endorsement reveals the proportion of students at each grade level for whom contact with adult models for substance use is a common experience. This combined measure reflects a general permissiveness with regard to substance use in the adult world as experienced by the student. Indeed, the much higher rates of alcoholism among children of alcoholics suggests strongly that adult models do not necessarily have to be positive ones to influence young people.

It is evident in Table 16 that the proportion of adults students know who use marijuana or drink alcohol rises with grade level. This trend undoubtedly reflects the fact that older students are more aware of what the adults in their environment

are doing. Only use of "pills to get high" remains relatively stable.

Table 16 also shows that alcohol is by far the most common substance used by adults known to students, especially by grade

Table 16

Percent of Students by Grade Level Reporting that Many/Most/All of the Adults They Know Use Each of Four Types of Substances

Type of Substance	Grade (Age) 7 (12)	9 (14)	11 (16)
Beer or Wine	33.3%	49.5%	56.5%
Liquor	13.3	22.5	27.1
Marijuana	8.6	14.2	17.1
Pills (to get high)	3.9	5.1	4.8

11. Only at this age level do more than half of the students report that many of the adults they know use some form of alcohol. In contrast, only 17% of 11th grade students are aware that many or most of the adults they know use marijuana. To the extent that adults serve as models of substance use, they do so primarily through the consumption of alcohol.

Attitudes of closest friends: To assess the perceived attitudes of peers students were given two vignettes about substance use and asked to select that response statement which most closely reflected what their best friends would think of the behavior described. The first vignette described a student who "usually gets loaded on drugs or alcohol at social events and often at

school." The second described a student who "uses drugs or alcohol socially on a regular basis, but who rarely gets obviously loaded or causes any problems." The first behavioral pattern of regular intoxication is typical of the inexperienced user. The second, implying controlled use, is like that of most adults who drink or use. Controlled use requires psychological and physiological tolerance to the drug. The effects are hidden from others. While use or even heavy use of alcohol and sometimes other drugs may be tolerated in adult social contexts, obvious signs of intoxication are ordinarily censured. High consumption is often esteemed if accompanied by high tolerance.

Tables V-2 and V-3 of Appendix V provide complete results by sex for the four responses describing peer attitudes toward the user described in the vignettes ("would avoid, see as unhealthy or unfortunate"; "would tolerate, but not be particularly friendly towards"; "would see as OK and sometimes join in"; "my friends are pretty much like that student as far as drugs and alcohol are concerned"). Tables 17 and 18 below summarize these results for the intoxicated and controlled users, respectively.

Table 17 reveals that there is an increasing acceptance of intoxicated users with advance in grade level, although even at Grade 11 two thirds of the students report that their closest friends would avoid another student who was regularly intoxicated. For the other third of the 11th graders peers apparently provide a social context which accepts and often practices this type of behavior.

Table 18 also shows an increasing acceptability with advancing grade level of regular uses of substances as long as the user does not show intoxication or cause problems. About 44% of 11th grade students report that their friends would find this type of regular substance use to be acceptable. Most important,

Table 17

Comparison of Percent of Students by Grade Level Whose Best Friends Would Avoid vs. Accept or Join Another Student Who Gets Loaded at a Social Event or at School

Attitude of Best Friends	Grade (Age) 7 (12)	9 (14)	11 (16)
Avoid	85.7%	72.0%	66.8%
Accept/ Join	14.3	27.9	33.2

Table 18

Comparison of Percent of Students by Grade Level Whose Best Friends Would Avoid vs. Accept or Join Another Student Who Uses Regularly Without Causing Problems

Attitude of Best Friends	Grade (Age) 7 (12)	9 (14)	11 (16)
Avoid	85.3%	69.5%	55.9%
Accept/ Join	14.7	30.4	44.1

a larger percentage of students, mainly at Grade 11, report that their friends would accept this kind of regular substance

use than was the case for regular use accompanied by intoxication (44% compared to 33%). In other words, for almost half of the 11th graders, regular drinking and using is socially acceptable within the peer context as long as obvious signs of intoxication are not present. This is essentially the attitude held by most adults to the regular consumption of alcohol.

Tables V-2 and V-3 in Appendix V reveal differences between the sexes, with girls more often reporting that their close friends would avoid both types of substance users. However, these differences are relatively moderate. For example, at Grade 11, 52% of boys vs. 61% of girls report that their friends would avoid the regular user who does not show signs of intoxication. Lower perceived acceptance by peers is undoubtedly one of the main reasons why substance use is lower for girls than for boys.

Primary source of information about drugs: Students were asked to indicate which of four sources of information about drugs was their primary source. These results are summarized in Table 19.

Irrespective of grade level, the two most commonly cited sources are school classes and friends. School classes are most often cited by 7th grade students but decline significantly in importance by grade 9. Friends are most important in 9th and 11th grades, but show some decline with older students, especially in relation to the student's own experience. Parents are in third place for 7th grade students and decline thereafter.

Experience with previous surveys has revealed that this particular question is a sensitive indicator of the extent to which students accept information on prevention disseminated in school classes. In the annual survey conducted in the Conejo Valley, for example, school classes rose to first place after

Table 19

Percent of Students by Grade Level Indicating that Most of What They Know About Drugs Comes from Each of Four Sources

Source	Grade (Age) 7 (12)	9 (14)	11 (16)
friends	29.3%	43.9%	39.8%
parents	20.9	10.3	6.0
school classes	41.2	32.4	33.6
own experience	8.6	13.4	20.6

installation in the 9th grade of a redesigned, and presumably improved, substance education curriculum. This was taken as a highly positive evaluation finding.

Attitudes about Substances

Students were asked to rate the harmfulness of frequent (daily or almost daily) use of marijuana and alcohol. They were also asked to indicate how opposed they perceived their parents to be to their own (student's) use of these two substances.

Harmfulness of regular alcohol and marijuana use: Students indicated the harmfulness of alcohol and marijuana use on a 6 point scale from "harmless" to "extremely harmful". These responses are compared for alcohol vs. marijuana in Table VI-1

of Appendix VI. They are also summarized in three combined categories of "harmful", "somewhat harmful", and "harmless" in Table 20.

Most students, regardless of grade level, view regular use of both substances as harmful. Younger students are more likely to rate regular use of marijuana as harmful than regular use of alcohol (86% to 71% at grade 7), but this difference mainly disappears by the 11th grade (73% to 71%). This trend is a realistic one in the sense that the harmfulness of alcohol tends to be underestimated in our society. However, regular

Table 20

Comparison of Harmfulness Ratings
of Alcohol vs. Marijuana by Grade Level

Ratings	Grade/Substance					
	7		9		11	
	Alco.	Mari.	Alco.	Mari.	Alco.	Mari.
Harmful	70.6%	85.7%	65.0%	73.6%	70.8%	72.7%
Somewhat Harmful	20.8	9.7	25.1	18.2	21.6	18.9
Harmless	8.7	4.6	9.9	8.2	7.6	8.4

use of either substance is a reasonably accurate indicator of psychological dependency. The fact that almost 30% of 11th grade students accept such regular use as harmless or only somewhat harmful suggests that a substantial number of students are unaware of the implications of regular substance use.

In the national survey students were asked how much harm to themselves regular smokers of marijuana risked. About 63% of the class of 1983 saw "great risk" in regular use. This figure is somewhat below the 71% for Orange County students, possibly because of the difference in the phrasing of the questions. When asked about the risk involved in taking four or five drinks every day, 67% perceived great risk, again comparing fairly closely to the 71% of Orange County students who saw daily alcohol use as harmful.

Parental attitudes about student use: Students were also asked to indicate on a scale of "strongly against" to "strongly favor" the attitude of their parents toward use of alcohol or marijuana by students themselves. These results are summarized by response category in Table VI-2 in Appendix VI.

It is not suprising that most students regardless of grade level place their parents in the "strongly against" or "moderately against" categories. The difference is that parents tend to be seen as strongly against marijuana use by their children, but much less consistent in their attitudes about alcohol. This trend increases as grade level advances. The results for grade 11 only are shown in Table 21 by way of illustration.

Table 21 dramatically illustrates the need for parent and community education on the harmfulness of alcohol. In terms of its demonstrated relation to crime, accidents, and physical and mental illness, alcohol is unquestionably the statistical leader among drugs currently in use, licit or illicit. While

Table 21

Perceived Attitudes of Parents about Student Use of Alcohol vs. Marijuana for 11th Grade

Attitude	Alcohol	Marijuana
Strongly against	42.2%	82.3%
Moderately against	34.5	9.2
Neutral	20.5	7.2
Favor (moderate to strong)	2.8	1.3

it is difficult to assess which drug is more harmful, there are certainly no scientific grounds for the relatively greater tolerance on the part of parents for alcohol as compared to marijuana use, at least as perceived by their children.

Comparative Ratings of Information Sources (Teachers, Parents, Classes)

Students were asked to rate both teachers and parents on their knowledgeability about drugs. This was accomplished by asking them to respond on a scale of "strongly agree" to "strongly disagree" to the statement, "...what my teachers/parents have to say about drugs can be trusted because they are well-informed on the subject." Results for teachers and parents are summarized in Table 22 (ratings of "strongly agree" and "agree" have been combined as have "disagree" and "strongly disagree").

It is apparent that for students at all three grades parents receive higher ratings than do teachers. This difference almost disappears by grade 11, however. Generally both teachers and parents are seen as less well-informed about drugs as grade

Table 22

Percent Agreeing/Disagreeing with Assertion that What Teachers/Parents Say About Drugs Can be Trusted Because They Are Well-Informed

Ratings	Grade (Age) 7 (12) Parents	Teachers	9 (14) Parents	Teachers	11 (16) Parents	Teachers
Agree	84.3%	77.8%	72.1%	60.1%	59.7%	56.5%
Uncertain	8.5	13.9	17.5	27.1	23.6	29.0
Disagree	7.2	8.2	10.4	12.8	16.6	14.4

combined as have "disagree" and "strongly disagree").

It is apparent that for students at all three grades parents receive higher ratings than do teachers. This difference almost disappears by grade 11, however. Generally both teachers and parents are seen as less well-informed about drugs as grade level progresses. Still, even by grade 11 more than half of the students continue to agree with the assertion that what parents and teachers have to say about drugs can be trusted. The fact that teachers do not fare better is bothersome nevertheless. Admittedly, the question asked about teachers in general rather than about teachers in prevention education classes.

Student Ratings of Drug/Alcohol Education

Students who took drug and alcohol education classes during the previous school year were asked to rate those classes on six evaluative dimensions. Each dimension was defined by a pair of bipolar adjectives, e.g., valuable vs. worthless, which

served as endpoints on a 5-point rating scale, with a rating of "5" being high. Table 23 provides means for each of the six scales by grade level.

Examination of this table reveals that most ratings of school prevention education classes are relatively high, especially for 7th grade students. However, 9th grade ratings are perceptibly lower than those for the 7th grade. Ratings by grade 11 students fall between the other two grade levels. These results suggest that there is some room for improvement, especially at grade

Table 23

Mean Ratings of School Drug/Alcohol Education Classes by Grade Level

Scale	Grade (Age) 7 (12)	9 (14)	11 (16)
Helpful/unhelpful	4.2	3.9	4.0
Clear/unclear	4.2	3.9	4.1
Believable/unbelievable	4.3	4.0	4.2
Informative/uninformative	4.3	4.0	4.2
Interesting/uninteresting	4.1	3.9	3.9
Valuable/worthless	4.1	3.8	4.0

9. It was reported earlier that the modal period for the first drug or alcohol intoxication experience incorporates the junior high or middle school years. Grade 9 therefore belongs to a critical period for prevention education, and the relatively low ratings reported in Table 23 for alcohol/drug education signal a need for improvement.

Relationships Among Measures

Two types of relationships will be examined in this section. The first reveals the extent to which regular users of alcohol and regular users of all substances including alcohol also use more than one substance on a given occasion (polydrug use). The second type of relationship involves the identification of student characteristics which are associated with substance use. Specifically, this second set of analyses will determine which student characteristics assessed in the survey are the best predictors of the amount of substance use.

Polydrug use among regular users: Experience with school age populations suggests that the pattern of substance use among regular users often incorporates use of more than one substance at a time. This practice was referred to as "polydrug" use earlier in the report. It has already been asserted that polydrug use is a particularly dangerous type of use because of the unpredictability of its effects on the user.

Clinical experience also suggests that in younger age groups "pure" alcohol drinkers are increasingly rare among regular users. In other words, regular alcohol drinkers frequently use other substances at the same time. To the extent that this practice is common, approaches to prevention, intervention, and treatment in both school and community ought to be adapted accordingly. In particular, the risks associated with polydrug use should be made clear.

Members of the younger generation may be more aware than

their elders that alcohol is a drug, one of many drugs currently available. The fact that it is licit, rather than illicit, at least for those who are old enough to buy it legally, does not obscure the fact that it, too, is a psychoactive substance with potentially powerful effects on the user.

To determine the extent to which regular alcohol drinkers use other drugs at the same time, Table 24 compares the total 11th grade sample with two categories of regular alcohol users: (a) those who drink once a week or more often and (b) those who report drinking once a day or more often. This comparison is made in terms of the percent of students in each of the three

Table 24

Frequency of Polydrug Use: Regular Users vs. Total Sample for Alcohol at Grade 11

Polydrug Frequency	Total Sample	Alcohol Once a Week or More	Alcohol Once a Day or More
Never	66.9%	30.3%	14.8%
Once or twice	11.4	17.3	7.6
A few times (3-6)	8.1	17.8	12.9
Several times (7-10)	5.3	11.4	18.0
Often (more than 10)	8.4	23.2	41.8
N	2,229	732	133

groups (total sample, weekly alcohol users, and daily alcohol users) who reported each of five levels of polydrug use (never, once or twice, etc.) in the preceding six months.

The positive relation between regular alcohol use and polydrug use is graphically apprent in Table 24. For the total sample (which includes the two categories of regular alcohol users) two thirds (67%) of the students have never used more than one drug on the same occasion. For weekly or more frequent alcohol users (33% of the 11th grade sample) this figure drops to less than one third (30%) reporting no polydrug use. For the very small number of daily alcohol users (about 6% of the total sample) only about 15% report no polydrug use.

If one defines regular polydrug use as using more than one drug at least once a month, then the last two categories in Table 24 may be combined to give percentages of students who are both regular alcohol and regular polydrug users. For the total 11th grade sample about 14% report polydrug use more often than once a month. For weekly alcohol users this figure rises to slightly over one third at 35%. For daily alcohol users the percentage of regular polydrug users rises again to three fifths of the sample (60%).

In other words, a substantial majority of 11th grade students who are regular alcohol users report at least some polydrug use during the preceding six months. Moreover, the majority of these reported such use on more than one or two occasions. Finally, substantial numbers of regular alcohol users are also

regular polydrug users, and the relationship is stronger with more frequent alcohol use.

These results suggest that as early as the 11th grade a frequency of alcohol use which is associated with alcohol dependency and high risk of alcoholism is accompanied by frequent polydrug use. The more regularly students use alcohol, the more regularly they use more than one substance on the same occasion. These results strongly support clinical impressions from the field of alcoholism treatment. "Pure" alcoholics, those who are dependent only on the substance alcohol, are becoming relatively unusual among younger persons referred to treatment. These findings have serious implications for prevention education, intervention, and treatment.

Table 25 presents the same information for regular weekly and daily users of any substance, including alcohol. The pattern of results in this table shows the relationship between regularity of substance use that was apparent for alcohol, except that the relationship with polydrug use is ever stronger. For example, only slightly over one tenth of daily substance users (11%) report no polydrug use in the previous six months. Regular polydrug use (more than once a month) stands at 35% for weekly substance users and 63% for daily users. In fact, 46% of the 300 students who report daily use of at least one substance also report very frequent (more than 10 times in the previous six months) polydrug use. This is especially disturbing, since the 300 regular daily users represent 13.5% of the 11th grade

Table 25

Frequency of Polydrug Use: Regular Users vs. Total Sample for All Substances at Grade 11

Polydrug Frequency	Total Sample	Any Substance Once a Week or More	Any Substance Once a Day or More
Never	65.9%	29.8%	11.0%
Once or twice	11.4	17.9	9.8
A few times (3-6)	8.1	17.9	16.0
Several times (7-10)	5.3	12.5	17.5
Often (more than 10)	8.4	22.2	45.7
N	2,229	823	300

sample! That is, well over ten percent of the 11th grade students in Orange County report using at least one substance every day. Of these, almost 90% report some polydrug use in the previous six months, and almost two thirds (63%) report using more than one substance more often than once a month.

Unfortunately, the national survey quoted earlier does not provide the information which makes the above comparisons possible, since it does not include a question on polydrug use. To the extent that Orange County students are like students elsewhere in the country (and the comparisons made earlier suggest that they are), these findings can only be described as alarming for the country as a whole. Over 13% of 11th grade students

are daily users of at least one substance, and the overwhelming majority of this group also reports a significant amount of polydrug use.

Predicting substance use: Stepwise multiple regression is a statistical technique which selects according to a systematic procedure the best predictors of a given criterion variable from a larger set of potential predictors. The selection process proceeds systematically by first finding the most powerful single predictor, then scanning the remaining set to identify the predictor which will make the next most significant independent contribution, and so on. The end products are (a) a subset of weighted predictors which are interpreted as at least partially independent correlates of the criterion variable under examination, plus (b) a multiple coorelation coefficient which reflects the accuracy with which a criterion variable is predicted from the variables identified. A multiple correlation coeffcicient (R) is interpreted exactly as a simple correlation coefficient (r), e.g., its square equals the proportion of variance in the criterion variable accounted for by the predictor(s).

In terms of the current survey, three criterion variables were defined: (a) total alcohol use, or the sum of responses of each student to the three items on alcohol, (b) total other drug use, or the sum of the responses to the other 15 questions on substances other than alcohol, and (c) polydrug use, the score on the single question on frequency of use of more than one substance at a time.

The predictor variables consist of all the other questions on the survey with the exception of the group of questions on age of first use, intoxication, and regular use. These questions were not entered into the regression equations because they were answered only by a small subset of the sample in most cases, for example those who used drugs regularly. In any case, it is already known that there will be a negative relationship between the various age measures and the criteria. In other words, students who use substances more heavily by grade 11 are also likely to have tried substances earlier, been intoxicated earlier, and so on, than will students who use moderately. We would not learn anything new by including age in the regression analysis.

All the other questions on the survey were included in the analysis plus racial/ethnic classification. Analyses were conducted separately for the two sexes in case systematic differences emerged in the pattern or weight of predictors. Finally, the regression analysis was conducted on the 11th grade sample only. This is the age level at which there is a maximum level and variation of substance use, and where relationships are likely to be most clearly established.

The results of the regressiona analyses for the three criteria are summarized in Tables VII-1 to VII-3 of Appendix VII. These results are for the two sexes combined, since significant differences did not emerge in the separate analyses. The predictor variables summarized in these tables are the "best" six for total alcohol

and total other drug and the "best" five for polydrug.[4] Multiple correlations for the subset of predictors were total alcohol = .64, total other drug = .69, and polydrug = .71. These are relatively high values, showing that the three types of substance use can been effectively predicted by other information on the survey.

Table 26 summarizes the predictor variables across the three criteria. There is both commonality and differentiation. Because these results are so important, they will be summarized as a set of declarative statements:

(1) Students who use more of each type of substance believe that their closest friends accept or approve of intoxicated behavior on the part of other students at social events or school.

(2) Students who use more of each type of substance depend on their own experience as the primary source of knowledge about drugs rather than on their friends, school classes, or parents.

(3) Students who use more alcohol and report more frequent polydrug use believe that their friends accept and approve of regular use of drugs on the part of other students as long as that use does not cause "problems".

(4) Students who report higher levels of other-drug and polydrug use know more adults who use marijuana and hashish.

(5) Students who report higher levels of other-drug and polydrug use think regular marijuana use is less harmful than do other students.

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[4] In order to compare the predictor sets across the three criteria, arbitrary cut-offs were added when the change in R^2 attributable to the next variable added to the equation dropped below approximately .01. In the case of the polydrug criterion there was a very sharp drop after the fifth variable, so only the first five were used. For the other two criteria the significant drop below R^2 change=.01 occured after the sixth variable had been entered.

(6) Students who use more alcohol think regular alcohol use is less harmful than do other students.

(7) Students who use more alcohol know more adults who use hard liquor.

(8) Students who use more alcohol report that their parents are relatively more accepting of student use of alcohol.

(9) Students who report more other-drug use report that their parents are relatively more accepting of student marijuana use.

(10) Students who report more other-drug use know more adults who use pills to get high.

The above statements reflect four very important generalizations. First, students who use more alcohol and other drugs and report more polydrug use believe their closest friends will accept or join other students who get high at social events. They also believe their closest friends will accept or join students who simply use regularly in an adult fashion without showing signs of intoxication. The primary role of the peer culture in sanctioning the use of psychoactive substances as well as the effects of that use is fully evident in these two relationships. As suggested earlier, substance use among adolescents is social behavior. Social networks sanction substance use and abuse.

Second, students who use either alcohol or other drugs report that they know more adults who use these same substances. They also perceive their parents to be more accepting of alcohol or drug use. Along with the peer support network, there is a concomitant adult support network, at least in the mind of the adolescent substance user. It is not only peers who model

Table 26

Summary of Best Predictor Variables for Total Alcohol, Total Other Drug, and Total Polydrug Criteria, from Stepwise Multiple Regression Analyses for Grade 11

Variable Description	Total Alcohol	Total Other Drug	Polydrug
Friends' attitude to student who gets loaded	X	X	X
Own experience is primary source drug knowledge	X	X	X
Friends' attitude to student who uses regularly	X		X
Number of adults student knows using marijuana/hashish		X	X
Opinion on harmfulness of regular marijuana use		X	X
Opinion on harmfulness of regular alcohol use	X		
Number of adults student knows using hard liquor	X		
Parents' acceptance of student alcohol use	X		
Parents' acceptance of student marijuana use		X	
Number adults student knows using pills (to get high)		X	

and support substance use. Adults have an important role as well.

Third, students who use more alcohol or other drugs also think there is less harm in regular use of these substances.

Again there is differentiation in the predictors, e.g., between alcohol and other drugs. The lower harmfulness ratings of students who drink and use more frequently may reflect the denial process which is so important in substance dependency. This particular finding strongly suggests that school and community prevention programs need to stress the potential harm that is associated with regular substance use, especially as a sign of psychological dependency.

Fourth, student who use more of all substances depend on their own experience for knowledge about alcohol and other drugs. They have stopped listening to others. Even their friends, likely to be users themselves, take second place. This phenomenon represents a kind of perverse autonomy. Information from others about substances and their effects can be disregarded. Perhaps no other factor other than regular use itself is more important in laying the foundations for substance dependency. Information and feedback from friends, parents, and authorities has been shut out.

APPENDIX I

Demographic Characteristics of the Districts

Table I-1

Frequency Distribution of District Enrollments by Thousands (Average Daily Attendance Divided by 100)

ADA/100	County*	Sample
38-40	1	1
35-37		
32-34		
29-31	1	1
23-25		
20-22	1	1
17-19	3	1
14-16	1	1
11-13	1	
8-10		
5-7	2	1
2-4	1	

*The county distribution excludes three high school districts: Anaheim, 24.9: Fullerton, 12.7; and Huntington Beach, 19.23, the first two of which are also excluded from the sample distribution.

Table I-2

District Standing on CAP Parental Education Index (PEI), Statewide Stanines

Stanine	County	Sample
9	1	
8	6	2
7	5	3
6	1	1
5	1	1
4		
3	1	1
2		
1		

Table I-3

District Standing on CAP Aid to Families with Dependent Children (AFDC) Index, Statewide Stanines

Statewide Stanine	County	Sample
9		
8		
7	1	1
6		
5	1	1
4	3	2
3	5	1
2	5	3
1		

Table I-4

District Standing on Percent Minority from CAP Data

%Minority	County	Sample
82-84%	1	1
.		
.		
.		
34-36	1	1
31-33		
28-30		
25-27	2	2
22-24	1	1
19-21	2	1
16-18	4	1
13-15	2	
10-12		
7-9	1	1
4-6	1	
1-3		

APPENDIX II

Project Documents

Instructions for Administering the Survey

Letter to Parents

Supervisor Questionnaire

INSTRUCTIONS FOR ADMINISTERING THE SUBSTANCE USE SURVEY

We hope that you will find administration of the survey to be a simple process that will not consume a great deal of time. The following instructions should answer questions that you may have about procedure. If additional questions arise, please call Professor Rod Skager at (213) 825-8313.

Students Sampled

The survey should be administered to 20% of the students in grades 7, 9, 11. All regular schools and continuation schools are to be included. The 20% figure should hold for each grade level at each school to assure that there is appropriate weighting of local enrollment in the District total. The 20% figure will allow for meaningful local school summary reports if funding permits.

You should allow for absenses by selecting somewhat more than 20% of the students at each grade. There is no provision for make-up testing. The numbers for your district, based on enrollment figures for last year (provided by the County), are as follows:

Grade 7: _____

Grade 9: _____

Grade 11: _____

You have been provided with approximately 50 extra questionnaires beyond the above total, by the way.

Sampling Procedure

Sampling is to be random. This can be done at the District level or locally, whichever is easiest and most accurate. Normally this is done by dividing the total enrollment at the grade level by the number of students to be assessed to obtain the constant C and then counting off every Cth name from the school roster at that grade level.

Notification of students can be handled in whatever way you find easiest. Students selected should be informed that they have been selected randomly and that they will not be asked to give their name or in any other way be identified with the questionnaire they fill out. They should also be offered the opportunity to decline to participate.

For a number of reasons, sampling by classroom is undesirable. This should only be done where random sampling of individual students is impossible, and if there is good reason to believe that sampling by classroom can produce the same result. It goes without saying that male and female students should be represented proportionally to their numbers in the population at each grade level.

Notification of Parents

The District or principals at local schools may wish to notify parents that their child has been selected as a participant. The notification should indicate that the survey has the sanction of the County Board of Supervisors, that it is being conducted for purposes of planning and allocation of resources to prevention education, that is it absolutely anonymous, and that it is voluntary. A draft letter to parents has been provided in case you wish to use it.

Testing Conditions

Prior experience strongly suggests that the assessment be conducted outside the regular classroom. Students respond seriously when tested in large groups as long as conditions are not crowded. It is appropriate to test all of the respondents at once, although grade level breakdown might be preferred.

It is essential that students have privacy from (a) other students who might look at their responses and (b) adult proctors. The latter should be present and visible, but remain sufficiently separated physically to insure student privacy. Selection of the testing room should take this need into account.

A box should be placed on a table at the entrance or front of the room. Students will be informed that they are to drop their completed questionnaires in the box when they have finished. These visible arrangements help assure a sense of anonymity.

Motivation

Students should be convinced of the importance of the survey. If possible the Principal should make a brief statement at the beginning. The following points are usually covered by principals:

(1) Drug and alcohol abuse by youth is a grave concern of both school and community. National surveys show that secondary students themselves rate drug abuse as the number one problem in their schools. It is important to know about the pattern of drug and alcohol use among students in the District so that educational and community prevention programs can be modified or strengthened as appropriate.

(2) Students in the room have been selected randomly. No one will ever be able to connect an individual with his or her responses. Participation is also voluntary. Anyone who wishes to decline participation may do so at this time. (The principal at this point can invite such students to return to their classes.)

(3) Students should be urged to respond as honestly and accurately as possible. The results of the survey for the County as a whole will receive a great deal of attention in the media, and the cooperation of each individual student is essential to the validity of the results. Finally thanks to the students for their cooperation.

District Coding

When the questionnaires have been passed out, the principal or one of the proctors should ask the students to write the following number in the box at the upper right hand corner of the first sheet. This is the number which identifies the questionnaire as coming from your district. This instruction should be repeated until it is clear that all students have responded. The code number for your district is:

____

____

Then remind the students to complete the rest of the information on the first page (school, sex, age, ethnicity), and, when finished, to turn to the first page of the questionnaire and begin.

Depending on school policy, students may be allowed to leave individually, dropping the completed questionnaire in the box described above.

Problems

If any problems or irregularities occur during the testing this should be communicated to you as district coordinator. We would appreciate your passing on this information.

Questionnaire Collection

Please collect the questionnaires in batches by school and hold them for pick up. The latter procedure seems safer than having them mailed and also hopefully saves you some trouble.

YOUR HELP IS GREATLY APPRECIATED

TO THE DISTRICT SUPERVISOR FOR THE SUBSTANCE ABUSE SURVEY:

Your response to the following are needed for answering questions about the validity of the survey. The spaces provided show that you need answer only briefly. Your frankness about possible problems would be most helpful. It is better to hear now from a knowledgeable source than later by rumor. Thanks for your help one more time.

District: _____

Supervisor: _____

1. Briefly describe how the District sample was selected. _____

2. Was a letter sent to parents of students selected for the sample? Did you use the letter provided or a different letter? _____

3. Did you hear of any negative reations from parents or others? Were there a significant number of such reactions, e.g., enough to bias the results in some way? _____

4. Did any of the schools report refusals to participate on the part of individual students of their parents? Approximately how many at each school? _____

5. Did the schools conduct the assessment in regular classrooms or in special rooms? Briefly describe general pattern for your District.

6. Do you know of any problems during the assessment itself that might bias the results for any school in your District? If so, describe.

_____

_____

_____

_____

_____

7. Imagine that you have to answer the following question from a reporter or TV newscaster:

   "Do you really believe that the way in which the survey was conducted in your schools led students to take the drug survey seriously and to respond honestly?"

How would you answer the question? _____

_____

_____

_____

APPENDIX III

Frequency of Substance Use

Table III-1

Average Frequency of Use of Substances for 7th Grade Males, Females, and Total*

Substance	Male	Female	Total
Beer	1.93	1.64	1.81
Wine	1.68	1.57	1.64
Liquor	1.46	1.25	1.37
Marijuana	1.32	1.13	1.24
Hashish	1.07	1.02	1.05
Amphetemines	1.11	1.03	1.08
Cocaine	1.06	1.03	1.05
LSD	1.03	1.01	1.02
Psychedelics	1.04	1.02	1.03
Barbiturates	1.03	1.02	1.02
Sedatives	1.04	1.02	1.03
Tranquilizers	1.04	1.04	1.04
Inhalants	1.35	1.22	1.29
PCP	1.02	1.02	1.02
Heroin	1.02	1.02	1.02
Other Narcotics	1.03	1.02	1.03
Loads	1.02	1.02	1.02
T's & Blues	1.01	1.01	1.01

*In tables III-1 to III-3 means were calculated on the following scale: 1 = never; 2 = once or twice; 3 = a few times; 4 = once a month; 5 = once a week; 6 = once a day; 7 = more than once a day.

Table III-2

Average Frequency of Use of Substances for 9th Grade Males, Females, and Total

Substance	Male	Female	Total
Beer	2.60	2.42	2.52
Wine	1.98	2.14	2.07
Liquor	2.02	1.94	1.99
Marijuana	1.95	1.64	1.80
Hashish	1.30	1.14	1.22
Amphetamines	1.30	1.31	1.31
Cocaine	1.17	1.08	1.13
LSD	1.10	1.03	1.07
Psychedelics	1.11	1.05	1.08
Barbiturates	1.10	1.06	1.08
Sedatives	1.11	1.06	1.09
Tranquilizers	1.11	1.10	1.10
Inhalants	1.36	1.22	1.29
PCP	1.06	1.03	1.05
Heroin	1.03	1.01	1.02
Other Narcotics	1.12	1.07	1.10
Loads	1.05	1.01	1.03
T's and Blues	1.04	1.01	1.02

Table III-3

Average Frequency of Use of Substances for 11th Grade Males, Females, and Total

Substance	Male	Female	Total
Beer	3.39	2.81	3.12
Wine	2.18	2.40	2.30
Liquor	2.37	2.18	2.29
Marijuana	2.43	1.91	2.18
Hashish	1.43	1.21	1.35
Amphetamines	1.50	1.56	1.54
Cocaine	1.46	1.32	1.40
LSD	1.19	1.07	1.14
Psychedelics	1.22	1.08	1.15
Barbiturates	1.12	1.08	1.10
Sedatives	1.15	1.09	1.13
Tranquilizers	1.13	1.13	1.13
Inhalants	1.23	1.14	1.19
PCP	1.08	1.02	1.06
Heroin	1.05	1.01	1.03
Other Narcotics	1.20	1.14	1.18
Loads	1.05	1.01	1.03
T's & Blues	1.03	1.02	1.02

Table III-4

Average Frequency of use of Substances
by Racial/Ethnic Group, Grade 7

Substance	Group				
	Amer. Ind.	Asian	Black	His-panic	White
Beer	2.08	1.51	1.78	1.81	1.81
Wine	1.67	1.35	1.63	1.44	1.71
Liquor	1.53	1.09	1.17	1.36	1.39
Marijuana	1.47	1.05	1.36	1.21	1.22
Hashish	1.14	1.00	1.03	1.01	1.05
Amphetamines	1.17	1.00	1.12	1.04	1.08
Cocaine	1.07	1.04	1.02	1.04	1.04
LSD	1.02	1.02	1.00	1.03	1.02
Psychedelics	1.04	1.03	1.02	1.06	1.03
Barbiturates	1.07	1.00	1.01	1.02	1.03
Sedatives	1.05	1.00	1.09	1.02	1.25
Tranquilizers	1.09	1.00	1.02	1.02	1.04
Inhalants	1.33	1.32	1.37	1.32	1.28
PCP	1.05	1.01	1.00	1.04	1.02
Heroin	1.07	1.00	1.05	1.00	1.01
Other Narcotics	1.05	1.00	1.03	1.02	1.02
Loads	1.07	1.02	1.00	1.01	1.01
T's & Blues	1.01	1.00	1.00	1.00	1.01

Table III-5

Average Frequency of Use of Substances
by Racial/Ethnic Group, Grade 9

Substance	Group				
	Amer. Ind.	Asian	Black	His-panic	White
Beer	2.99	1.83	2.30	2.30	2.61
Wine	2.48	1.55	1.71	1.75	2.16
Liquor	2.31	1.48	1.58	1.77	2.07
Marijuana	2.39	1.29	1.95	1.67	1.84
Hashish	1.50	1.02	1.27	1.17	1.22
Amphetamines	1.53	1.12	1.22	1.17	1.35
Cocaine	1.37	1.07	1.19	1.10	1.12
LSD	1.19	1.05	1.02	1.06	1.07
Psychedelics	1.24	1.06	1.02	1.04	1.09
Barbiturates	1.00	1.06	1.03	1.01	1.09
Sedatives	1.13	1.04	1.03	1.04	1.10
Tranquilizers	1.10	1.06	1.10	1.05	1.12
Inhalants	1.43	1.20	1.13	1.28	1.31
PCP	1.08	1.04	1.09	1.06	1.05
Heroin	1.04	1.04	1.08	1.04	1.02
Other Narcotics	1.07	1.06	1.16	1.04	1.12
Loads	1.02	1.04	1.08	1.02	1.03
T's & Blues	1.02	1.04	1.03	1.01	1.02

Table III-6

Average Frequency of Use of Substance
by Racial/Ethnic Group, Grade 11

Substance	Group				
	Amer. Ind.	Asian	Black	His-panic	White
Beer	3.78	2.05	2.30	2.81	3.23
Wine	2.42	1.75	1.70	2.07	2.41
Liquor	2.70	1.65	1.58	1.96	2.40
Marijuana	3.36	1.45	1.95	1.83	2.21
Hashish	1.73	1.11	1.27	1.15	1.38
Amphetamines	1.74	1.26	1.23	1.28	1.60
Cocaine	1.82	1.07	1.19	1.24	1.42
LSD	1.34	1.00	1.02	1.07	1.14
Psychedelics	1.33	1.06	1.02	1.08	1.17
Barbiturates	1.18	1.05	1.03	1.04	1.11
Sedatives	1.27	1.05	1.03	1.04	1.14
Tranquilizers	1.22	1.04	1.10	1.07	1.15
Inhalants	1.34	1.10	1.13	1.20	1.19
PCP	1.10	1.01	1.09	1.07	1.05
Heroin	1.00	1.00	1.08	1.03	1.03
Other Narcotics	1.29	1.12	1.16	1.08	1.19
Loads	1.09	1.04	1.08	1.05	1,02
T's & Blues	1.02	1.04	1.03	1.03	1.02

Table III-7

Percent of Male and Female Students by Grade Level Using Seven Commonly Used Substances at Least Once in the Previous Six Months

Substance	Grade 7		Grade 9		Grade 11	
	Male	Female	Male	Female	Male	Female
Beer	55.1%	44.5%	70.2%	65.0%	80.2%	70.5%
Liquor	29.0	17.7	51.1	48.6	60.7	55.8
Marijuana	17.1	8.1	35.6	27.3	46.9	35.3
Amphetamines	5.7	2.1	15.4	16.1	22.6	25.9
Cocaine	3.8	1.8	8.3	5.3	21.3	15.8
LSD	1.6	0.9	5.7	2.4	10.1	4.2
Inhalants	20.8	14.2	20.3	13.5	15.6	8.9

Table III-8

Regular Users Type I:
Percent of Male and Female Students Using Seven Commonly Used Substances
Once a Week or More by Grade Level

Substance	Grade 7		Grade 9		Grade 11	
	Female	Male	Female	Male	Female	Male
Beer	1.2%	4.3%	12.6%	15.3%	22.5%	36.6%
Liquor	0.5	1.6	5.8	7.2	8.9	11.4
Marijuana	0.7	2.6	6.1	11.3	10.7	18.8
Amphetamines	0.1	0.5	1.7	2.2	5.2	3.8
Cocaine	0.2	0.2	0.1	1.3	2.0	2.6
LSD	0.0	0.2	0.1	0.5	0.3	1.1
Inhalants	0.6	2.0	0.8	1.8	0.5	0.9

Table III-9

Regular Users Type II:
Percent of Male and Female Students Using Seven Commonly Used Substances
Once a Day or More Often by Grade Level

Substance	Grade 7		Grade 9		Grade 11	
	Female	Male	Female	Male	Female	Male
Beer	0.1%	0.8%	1.7%	3.1%	3.0%	6.6%
Liquor	0.1	0.4	0.9	2.1	0.5	2.0
Marijuana	0.5	1.3	2.9	6.9	5.9	11.3
Amphetamines	0.0	0.3	0.9	0.7	1.9	1.5
Cocaine	0.1	0.0	0.0	0.1	0.1	1.0
LSD	0.0	0.0	0.1	0.1	0.2	0.2
Inhalants	0.2	0.8	0.5	0.9	0.4	0.5

Table III-10

Percent of Male and Female Students
Reporting Various Frequencies of Polydrug Use
by Grade Level

Frequency	Grade 7		Grade 9		Grade 11	
	Female	Male	Female	Male	Female	Male
Never (last six months)	93.8%	87.8%	78.7%	75.4%	70.95	63.9%
Once or twice	2.7	6.7	10.3	9.6	11.9	10.7
3 - 6 times	2.5	2.4	5.1	5.9	7.0	9.1
7 - 10 times	0.4	1.2	2.3	3.7	4.2	5.8
More than 10 times	0.7	2.0	3.6	5.4	6.0	10.5

APPENDIX IV

Age of First Use, Intoxication, and Regular Use

Table IV-1

Median Age and Percent Sample for First Use, First Intoxication, and First Regular Use for Alcohol vs. Other Drugs by Grade Level

Grade		Alcohol				Other Drugs		
		1st Beer/ Wine	1st Liquor	1st High	Regular Use	1st Use	1st High	Regular Use
7	Md	9.6	10.6	10.8	10.8	11.0	11.2	11.4
	%	66.2	31.2	19.1	6.8	13.7	12.2	6.8
9	Md	10.8	12.1	12.6	13.1	12.7	12.8	13.0
	%	82.5	61.4	46.7	21.0	37.5	30.0	15.2
11	Md	12.4	13.6	13.7	14.8	13.9	13.9	14.4
	%	90.1	75.3	69	40.1	52.0	46.8	28.2

Table IV-2

Percent of 11th Graders Reporting
First Use, First Intoxication, and First Regular Use
at Ages 8 or before, 9 - 11 (Upper Elementary), 12 - 14 (Middle School), and 15 - 17 (Senior High)

Ages	Alcohol				Other Drugs		
	First Used Beer/Wine	First Used Liquor	First High	Regular Use	First Used	First High	Regular Use
8 or before	16%	4.0%	2.4%	0.3%	1.6%	1.3%	0.4%
9 - 11	18.4	8.9	6.8	0.8	4.8	4.6	1.3
12 - 14	40.6	40.1	35.3	14.2	26.9	23.2	13.2
15 - 17	16.1	22.5	24.8	25.0	18.9	17.8	13.7

Table IV-3

Comparison Between Orange County 11th Graders and National Survey Class of 1983 (Grade 12) on Age of First Use of Alcohol vs. Other Drugs*

Age/Grade	Beer, Wine/ Alcohol		Other Drugs/ Marijuana	
	Orange Co.	Nation	Orange Co.	Nation
11/6	6.2%	9.6%	2.5%	3.0%
12-13/7-8	26.1	21.8	15.6	15.3
14/9	14.0	24.9	11.6	15.2
15/10	11.4	18.5	12.5	11.5

*Different categories used in the two surveys required comparing "beer and wine" and "other drugs" for Orange County with "alcohol" and "marijuana" for the national survey.

APPENDIX V

Social Context of Substance Use

Table V-1

Percent of Adults Students Know Who Use Various Substances

Substance/ % Adults Using	Grade 7	Grade 9	Grade 11
Beer/Wine			
None	18.7%	10.0%	6.2%
Some	48.0	40.6	37.3
Many	20.0	25.8	28.1
Most	9.5	16.6	21.7
All	3.8	7.1	6.7
Liquor			
None	56.1%	38.2%	29.3%
Some	30.6	39.4	43.6
Many	8.3	13.9	17.3
Most	3.2	6.2	7.4
All	1.8	2.4	2.4
Marijuana/Hashish			
None	68.3%	51.2%	43.6%
Some	23.1	34.7	39.4
Many	5.2	9.2	12.0
Most	2.6	3.3	3.8
All	0.8	1.7	1.3
Pills (to get high)			
None	85.6%	76.1%	74.2%
Some	10.5	18.8	21.1
Many	2.6	3.5	3.4
Most	0.9	1.0	1.0
All	0.4	0.6	0.4

Table V-3

Perceptions of Male and Female Students of Attitudes of Best Friends to Student Who Uses Drugs or Alcohol Regularly But Does Not Show or Cause Problems

Attitudes of friends	Grade 7		Grade 9		Grade 11	
	Male	Female	Male	Female	Male	Female
Avoid/see as unhealthy	48.4%	54.3%	29.5%	24.6%	16.1%	19.5%
Tolerate/but not friendly	31.7	34.0	39.2	46.2	35.8	41.1
Accept/sometimes join	12.0	9.1	22.7	22.6	34.6	27.1
Friends like student	4.9	2.6	8.6	6.7	13.4	12.3

APPENDIX VI

Attitudes about Substances

Table VI-1

Comparison of Percent Harmfulness Ratings of Alcohol vs. Marijuana by Grade Level

Attitude	Grade/Substance					
	7		9		11	
	Alco.	Mari.	Alco.	Mari.	Alco.	Mari.
Extremely harmful	36.9%	66.1%	33.5%	48.6%	38.9%	46.3%
Harmful	33.7	19.6	31.5	25.0	31.9	26.4
Somewhat harmful	20.8	9.7	25.1	18.2	21.6	18.9
Mainly harmless	6.5	2.7	7.8	6.0	6.0	5.9
Harmless	2.2	1.9	2.1	2.2	1.6	2.5

Table VI-2

Comparison of Perceived Attitude of Parents
Toward Student Use of Alcohol vs. Marijuana

Attitude	Grade/Substance					
	7		9		11	
	Alco.	Mari.	Alco.	Mari	Alco.	Mari.
Strongly against	59.1%	90.3%	52.1%	85.4%	42.2%	82.3%
Moderately against	24.8	4.4	28.8	8.0	34.5	9.2
Neutral	13.0	3.5	15.5	5.2	20.5	2.2
Favor*	3.2	1.8	3.6	1.4	2.8	1.3

*"Favor" category combines "moderately in favor" and "strongly in favor".

APPENDIX VII

Relationships Among Measures

Table VII-1

Stepwise Multiple Regression for
Total Alcohol Use, Grade 11

Variable Description	Simple r	Beta	R^2 Change	R
Friends' attitude to student who gets loaded	.51	.163	.260	.51
Friends' attitude to student who uses regularly	.50	.193	.052	.56
Opinion on harmfulness of regular alcohol use	.37	.139	.045	.60
Number of adults student knows using hard liquor	.39	.115	.030	.62
Own experience is primary source drug knowledge	.34	.178	.013	.63
Parents' acceptance of student alcohol use	.28	.098	.008	.64

Table VII-2

Stepwise Multiple Regression for
Total Other Drug Use, Grade 11

Variable Description	Simple r	Beta	R^2 Change	R
Friends' attitude to student who gets loaded	.54	.200	.286	.54
Own experience is primary source drug knowledge	.48	.253	.096	.62
Opinion on harmfulness of regular marijuana use	.52	.173	.057	.66
Number adults student knows using marijuana/hashish	.46	.109	.023	.68
Parents' acceptance of student marijuana use	.29	.093	.008	.68
Number adults student knows using pills (to get high)	.39	.092	.008	.69

Table VII-3

Stepwise Multiple Regression for Polydrug Use, Grade 11*

Variable Description	Simple r	Beta	R^2 Change	R
Friends' attitude to student who gets loaded	.58	.205	.339	.58
Own experience is primary source drug knowledge	.49	.258	.088	.65
Opinion on harmfulness of regular marijuana use	.52	.175	.046	.69
Friends' attitude to student who uses regularly	.52	.147	.020	.70
Number adults student knows using marijuana/hashish	.45	.091	.041	.71

*Only five variables were selected for polydrug use because the sixth and later variables produced only miniscule changes in variance accounted for by R.