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## Six years of cross-sectional surveys of student drug use in Toronto

By Reginald G. SMART and Dianne FEJER  
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Recently many studies have been made of drug use by adolescents but almost all of these are of populations at one point in time. However, the study reported here is the fourth conducted among Toronto students in the past 6 years. Smart and Fejer (1971) reviewed many of these studies conducted in Canada up to 1970 and Berg (1970) provided a comprehensive review of non-medical drug use in the United States. A more recent review of the world-wide literature on the epidemiology of hallucinogenic and psychoactive drugs was undertaken by Mercer and Smart (1974).

As mentioned above, this study is one of a series conducted in metropolitan Toronto. The first was undertaken in 1968 and studies were repeated at two-year intervals until 1974. With the exception of 1970 when grade 6 students were also included, each study has sampled students in grades 7, 9, 11, and 13. Data from the earlier studies indicated a dramatic increase in the use of alcohol, marihuana, barbiturates, opiates, LSD, and other hallucinogens between 1968 and 1970. At this time, references to a "chemical revolution", "the drug age", and "the turned-on" generation were common and probably apt. However, between 1970 and 1972 the use of many drugs, especially the illicit ones (marihuana, opiates, speed,<sup>1</sup> LSD and other hallucinogens) appeared to stabilize; increases were small or little change was found. Alcohol use continued to increase between 1970 and 1972 but at a slower rate than during the preceding two years. The present study attempted to assess whether this relative stabilization continued to the present or whether new patterns of drug use emerged.

The authors have been unable to find more than one long term study of drug use in English.<sup>2</sup> The only other study following drug use in a particular area over an extended period of time has been conducted by the San Mateo County Department of Public Health and Welfare (1974). Annual studies were conducted among high school students in San Mateo County from 1968 to 1974. As in the Toronto study the use of many drugs (i.e., alcohol, amphetamines, barbiturates, marihuana and LSD) increased substantially between 1968 and 1971 and then the rate of increase tended to slow down or stabilize. The 1974 data from this study indicated that the use of very few drugs had increased over the past year and definite declines were found in the use of barbiturates and tobacco. Alcohol use continued to increase in San Mateo County as it had from 1968. Since so few long term trend studies are available it is of interest to compare the data from the Toronto studies with that of the San Mateo study.

<sup>1</sup> Generally understood to mean methamphetamine.

<sup>2</sup> Personal communication from Dr. O. Irgens-Jensen indicates that a Norwegian study has been made but no descriptions are available in English, although one is in preparation.

As in previous studies the 1974 metropolitan Toronto high school survey retained the following aims:

(1) Determine the prevalence of use of various drugs by students in grades 7, 9, 11 and 13.

(2) Measure changes in drug use which have occurred over the past six years by comparing the studies conducted in 1968, 1970, 1972 and 1974.

(3) Investigate the relationship among drug use, social and demographic characteristics and observe any changes which have occurred in these relationships over time.

New additions to the 1974 study included a section on the students' experiences with drug education programmes and a section concerned with the use of drugs and driving. Both of these sections will be included in separate reports.

### Method

#### *The sample*

The sampling procedures used in 1974 were basically the same as used in the three previous Toronto studies (conducted in 1968, 1970, and 1972). However, the sample size was reduced by about half. A total of 3,479 students in grades 7, 9, 11 and 13 completed the questionnaire, compared to 6,641 in 1972. The sampling method has been described in detail in earlier studies (Smart and Jackson, 1969; Smart, Fejer, and White, 1970; 1972). Thus, attention will be given here to the deviations from these procedures. It should be noted that the study is a cross-sectional trend study not a longitudinal one in which the same students are studied each year.

In order to reduce the sample, classes were selected from the 1972 list by randomly excluding half the classes in each grade, in each school which had two or more classes. If an odd number of classes had been surveyed within a school in 1972 an extra class from that school was included before randomly taking half the classes. Among those schools with only one class within each grade in 1972 only half the schools were randomly selected. Two schools withdrew from the survey and two other schools from the 1972 study were included as replacements. Two schools were later excluded from the study because in one case letters of permission had not been distributed and in the other only 3 parents gave consent. Representation by schools did not change greatly within the school boards and the total number of schools was only reduced from 66 to 53.<sup>3</sup>

As in previous re-surveys, an attempt was made to return to the same classes as used in 1972, but this was not always possible. Most secondary schools are concerned with individual programmes rather than class programmes. The homeroom system in use in schools during earlier surveys in some cases no longer was used. To overcome these problems in several schools the school staff was asked to designate a group of students equivalent to those who were in the class in 1972.

#### *Letters of permission*

The same letter of permission used in the 1972 study was sent to parents of students in classes to be included in the study. As in the previous studies the form and wording of the letter varied from board to board, as required. The letters

<sup>3</sup> All surveys were done at the same time of the year, i.e. in the middle weeks of May.

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were also sent, where appropriate, in Greek, Ukrainian, Italian, Polish, Portuguese, and Chinese. Students of 18 years of age or older were allowed to sign their own letters of permission.

### Procedure

The questionnaires were administered in the classroom by trained interviewers unassociated with the school staff. Students recorded their answers on optical scanning forms and were asked not to sign the forms.

Of the sample selected, 69 per cent completed the questionnaire and this is similar to the 69 per cent completing in 1972 and 72 per cent in 1970.

The questionnaire included the following:

- (a) Demographic characteristics — age, sex, grade, grade average, and father's occupation.
- (b) Prevalence and frequency of use of alcohol, tobacco, marihuana, glue, other solvents, barbiturates, opiates, speed, other stimulants, tranquillizers, LSD and other hallucinogens.
- (c) Sources of information about drugs.
- (d) A 15 item attitude toward drugs and drug users scale.
- (e) A 15 item drug knowledge scale.
- (f) Driving history and use of alcohol and other drugs by drivers, as well as accidents and offences involving drug use and driving.

The questions regarding demographic characteristics and drug use were identical to those used in the 1972 survey and similar in most respects to those used in earlier surveys.

### Results

#### (1) Prevalence of drug use

Table 1 shows the changes in drug use in the four surveys. It was observed in the 1972 report that the pattern of drug use has changed only slightly between 1970 and 1972. Much the same tendency was evident in the present data comparing 1972 and 1974. This contrasts sharply to the dramatic increases in the use of many types of drugs between 1968 and 1970. Only the use of alcohol, marihuana and glue increased significantly ( $p < .05$ ) from 1972 to 1974. The prevalence of use of tobacco, LSD, and other hallucinogens decreased significantly ( $p < .05$ ); while the use of other solvents, opiates, speed, tranquillizers, stimulants, and barbiturates remained essentially unchanged.

The most encouraging change to take place between 1972 and 1974 involved the use of tobacco. Smoking has declined over the past two years by 5 per cent from 38.3 per cent to 33.7 per cent. The present rate is the lowest it has been in all surveys to date.

Of the illicit drugs only marihuana showed an increase in use between 1972 and 1974. In 1972, 20.9 per cent of the students reported using marihuana at least once in the last 6 months but 22.9 per cent reported use in 1974. The use of opiates and speed did not change significantly between surveys. LSD use declined

TABLE 1

## Prevalence of drug use by Toronto students in grades 7, 9, 11, and 13

|                        | Percentage using drugs at least once in past six months |       |       |       |
|------------------------|---------------------------------------------------------|-------|-------|-------|
|                        | 1968                                                    | 1970  | 1972  | 1974  |
| Alcohol .....          | 46.3                                                    | 60.2  | 70.6  | 72.9* |
| Tobacco .....          | 37.6                                                    | 35.5  | 38.3  | 33.7* |
| Marihuana .....        | 6.7                                                     | 18.3  | 20.9  | 22.9* |
| Glue .....             | 5.7                                                     | 3.8   | 2.9   | 3.8*  |
| Other solvents .....   | <sup>a</sup>                                            | 6.3   | 6.5   | 7.4   |
| Barbiturates .....     | 3.3                                                     | 4.3   | 18.2  | 18.0  |
| Opiates .....          | 1.9                                                     | 4.0   | 4.0   | 3.6   |
| Speed .....            | <sup>a</sup>                                            | 4.5   | 3.3   | 2.7   |
| Stimulants .....       | 7.3                                                     | 6.7   | 6.4   | 5.8   |
| Tranquillizers .....   | 9.5                                                     | 8.8   | 10.2  | 9.0   |
| LSD .....              | 2.6                                                     | 8.5   | 6.4   | 4.1*  |
| Other hallucinogens .. | 2.0                                                     | 6.7   | 7.2   | 5.7*  |
| Total students .....   | 6 447                                                   | 6 890 | 6 641 | 3 479 |

\* Significant difference ( $p < .05$ ) between 1972 and 1974.<sup>a</sup> Data not collected in 1968.

from 6.4 per cent in 1972 to 4.1 per cent in 1974. As well, the prevalence of use of other hallucinogens decreased from 7.2 per cent in 1972 to 5.7 per cent in 1974.

As has occurred consistently from 1968 on, alcohol use continued to increase. Presently, 72.9 per cent of the students have used alcohol at least once in the six months preceding the survey. In 1968 only 46.3 per cent of the sample reported alcohol use. This increased to 60.2 per cent in 1970; then to 70.6 per cent in 1972.

No significant changes occurred in the use of psychoactive drugs; barbiturates, tranquillizers, and stimulants. Barbiturates increased greatly from 1970 to 1972. However, in 1972 the question was changed to include painkillers and at this time we raised the question of whether some students were referring to non-barbiturate painkillers. The question used in 1974 was the same as in 1972. Tranquillizer and stimulant use have remained relatively stable since 1968.

The use of glue as an intoxicant increased to 3.8 per cent (the level it had been at in 1970) from 2.9 per cent in 1972. But the present rate of use is still considerably lower than that of 5.7 per cent found in 1968. Solvents did not increase in use significantly ( $p > .05$ ) between 1972 and 1974.

## (2) Frequency of drug use

While the proportion of students using alcohol increased slightly between 1972 and 1974 there was very little change among drinkers in the frequency of use. In 1972, 23.3 per cent reported drinking four times a month or more often compared to 24.5 per cent in 1974. Only about 2.0 per cent reported drinking every day in

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1972 and this has not changed in 1974.<sup>4</sup> On the other hand, the frequency with which tobacco users smoked did show a small decline, accompanying the over-all decline in the proportion of users. In 1972, 17 per cent of the students smoked three or more cigarettes a day but only 14 per cent smoked this many a day in 1974.

The frequency of marihuana use did not change substantially between 1972 and 1974 despite the slight increase in the proportion of users. Changes in the frequency of use of opiates, speed, LSD, and other hallucinogens were all very small. However, over-all there appears to have been a slight tendency toward a decrease in the frequency of use of these illicit drugs.

As found with illicit drugs, frequency of use of tranquillizers, barbiturates, and stimulants did not change between 1972 and 1974. The majority of those using each of these drugs did so only one or two times in the last six months.

The frequency of use of glue and solvents did not change substantially in the past two years.

### (3) *The relationship between drug use and social and demographic characteristics*

#### *Sex*

In the earliest survey (1968) drug use was much more common among males than females but the difference declined in 1970 and 1972 for most drugs. For many drugs (alcohol, marihuana, opiates, speed and LSD) males were still significantly more often users than females in 1972. Only for solvents, barbiturates and tranquillizers was use more common among females than males. In 1974 it could no longer be said that drug use is more common among males than females. For three drugs — alcohol, marihuana and LSD — males were significantly ( $p < .05$ ) more often users than females, while for three other drugs — tobacco, barbiturates, and tranquillizers — females were more often ( $p < .05$ ) users. No significant sex differences were found in the use of glue, other solvents, opiates, speed, stimulants or other hallucinogens.

The most notable change in the sex pattern of drug use occurred for tobacco. In 1968 and 1970 males were significantly more often smokers of tobacco than females. There was no difference between males and females in 1972. In 1974 34.8 per cent of females smoked tobacco compared to 32.6 per cent of males. The

<sup>4</sup> *Setting for alcohol consumption.* In earlier studies some question had arisen as to the proportion of students whose only alcohol consumption occurred within the family setting; specifically, wine with dinner. In this study students were asked what proportion of their drinking was taking wine with the family. About 21 per cent of the students reported all their drinking was taking wine with the family. An additional 21.2 per cent said almost all their drinking occurred in this setting. Only 36.1 per cent reported none of their drinking involved taking wine with the family. An additional 858 students responded to this question but reported not drinking in the last six months. Since there was no time period on the question concerning wine consumption with their parents we assume that for some of these students drinking experiences occurred prior to the last 6 months. Also, for some students this drinking may have been of such a small quantity and frequency that they would not consider themselves as falling into the category of drinking less than once a month.

When those reporting not drinking in the last 6 months were removed from the analysis the proportions falling into each category did not change greatly. A considerable proportion of student drinking appeared, then, to take place in the family setting.

proportion of males and females using each of the 12 drugs from 1968 to 1974 is shown in table 2.

Male users of alcohol and marihuana tended to take these drugs more frequently than female users. On the other hand, females who used barbiturates did so more frequently than males. For the other drugs, few differences between male and female users were found in the frequency with which they used them.

TABLE 2  
Drug use by sex in 1968, 1970, 1972 and 1974  
Percentage using drugs at least once in past six months

| Drugs               | Male  |                   |       |       | Female |                   |       |       |
|---------------------|-------|-------------------|-------|-------|--------|-------------------|-------|-------|
|                     | 1968  | 1970 <sup>a</sup> | 1972  | 1974  | 1968   | 1970 <sup>a</sup> | 1972  | 1974  |
| Alcohol             | 51.7  | 56.4              | 73.0  | 74.8  | 40.4   | 49.6              | 68.1  | 71.0* |
| Tobacco             | 43.1  | 32.4              | 38.3  | 32.6  | 32.7   | 28.3              | 38.4  | 34.8* |
| Marihuana           | 8.6   | 16.9              | 24.3  | 25.5  | 4.1    | 12.0              | 17.3  | 20.3* |
| Glue                | 7.4   | 4.7               | 2.9   | 3.9   | 4.6    | 3.5               | 3.0   | 3.7   |
| Other solvents      | —     | 6.8               | 5.3   | 6.9   | —      | 7.7               | 7.9   | 7.6   |
| Barbiturates        | 3.7   | 3.8               | 15.8  | 15.8  | 3.6    | 3.8               | 20.8  | 20.1* |
| Opiates             | 2.3   | 4.1               | 4.9   | 4.1   | 1.6    | 2.9               | 3.1   | 3.0   |
| Speed               | —     | 4.7               | 3.8   | 3.0   | —      | 3.4               | 2.8   | 2.3   |
| Stimulants          | 8.7   | 5.7               | 6.3   | 6.2   | 5.6    | 5.9               | 6.5   | 5.5   |
| Tranquillizers      | 8.3   | 6.2               | 8.8   | 7.2   | 10.4   | 8.9               | 11.6  | 10.8* |
| LSD                 | 5.6   | 8.4               | 7.1   | 4.8   | 1.3    | 5.9               | 5.6   | 3.3*  |
| Other hallucinogens | 3.2   | 7.0               | 7.7   | 6.3   | 1.6    | 5.7               | 6.6   | 5.1   |
| Total students      | 3 298 | 4 395             | 3 382 | 1 771 | 3 097  | 4 453             | 3 255 | 1 708 |

\* Significant difference ( $p < .05$ ) between males and females in 1974.

<sup>a</sup> Grade 6 students included in 1970 data.

#### Grade

As in previous studies rates of drug use vary greatly with grade level. However, over the 4 years the grade pattern of drug use has been inconsistent. In 1969 the use of many drugs was highest among grade 9 students. In 1970 use of most drugs peaked in grade 11. While in 1972 use was highest among both grade 9 and 11 students for many drugs.

In the present study there were significant relationships ( $p < .001$ ) between grade and use for ten drugs (alcohol, tobacco, marihuana, glue, other solvents, barbiturates, stimulants, tranquillizers, LSD, and other hallucinogens). As in previous studies alcohol use increased with increasing grade level. Only 51.5 per cent of grade 7 students drank alcohol compared to 92.6 per cent in grade 13. Tobacco use, on the other hand, was highest in grade 11 (41.3 per cent using) followed by grade 9 (37.9 per cent using). Tobacco use followed the same grade pattern in 1972. The greatest decline in smoking over the two years occurred among grade 9 students. There were 7 per cent fewer tobacco smokers in grade 9 in 1974 than in 1972.

#### Six years of cross

A higher percentage than in any other study. Grade 13 students in 1972 and 1974 showed an increase among grade 11 students and other hallu- grade 9 students also in grades 7 and 9 were no significant.

The largest increase in grade 13 students

Tranquillizers. Among grade 9 and 11.4 per cent of grade 9 students. Stimulant use was 11 students 7.7 occurred in grade 13 and

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#### Grade Average

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#### Father's occupation

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| <i>a</i> | 1972  | 1974  |
|----------|-------|-------|
|          | 68.1  | 71.0* |
|          | 38.4  | 34.8* |
|          | 17.3  | 20.3* |
|          | 3.0   | 3.7   |
|          | 7.9   | 7.6   |
|          | 20.8  | 20.1* |
|          | 3.1   | 3.0   |
|          | 2.8   | 2.3   |
|          | 6.5   | 5.5   |
|          | 11.6  | 10.8* |
|          | 5.6   | 3.3*  |
|          | 6.6   | 5.1   |
|          | 3 255 | 1 708 |

A higher proportion of students in grade 11 (37.3 per cent) smoked marihuana than in any other grade. In 1972 similar rates of use were found in grade 11 and 13 students in marihuana use. However, use of marihuana had continued to increase among grade 11 students but declined slightly among grade 13 students between 1972 and 1974. Use of LSD, and other hallucinogens also peaked among grade 11 students. LSD was used by 6.7 per cent of grade 11 students in 1974 and other hallucinogens by 9.2 per cent. A relatively large proportion of grade 9 students also used these two drugs. Only about half the proportion of students in grades 7 and 13 had used these two drugs compared to grade 11 students. There were no significant relationships between grade and the use of speed or opiates.

The largest decline in the use of LSD and other hallucinogens occurred among grade 13 students: rates of use were almost halved between 1972 and 1974.

Tranquillizer and barbiturate use were highest among grade 9 and 11 students. Among grade 9 students 11.8 per cent had used tranquillizers in the last 6 months and 11.4 per cent of grade 11 students had taken them. Similarly 21.7 per cent of grade 9 students and 21.5 per cent of grade 11 students had taken barbiturates. Stimulant use was slightly higher among grade 9 students (8.6 per cent) than grade 11 students 7.7 per cent. The most notable decline in the use of barbiturates occurred in grades 7 and 13; for stimulants in grades 13 and 9 and for tranquillizers in grades 13 and 7.

As in 1972, the use of glue and other solvents was highest among grade 7 students and declined with increasing grade level. Eight per cent of students in grade 7 had sniffed glue at least once in the last 6 months and 14.0 per cent had used other solvents.

In general, then, the pattern of drug use by grade had not changed greatly in the last two years. Alcohol use still increased with grade level while glue and solvents decreased with grade level. For other drugs where a significant grade difference was found, either students in grade 9 or 11 were most often users. With the exception of alcohol most drug use among grade 13 students either did not change or declined from 1972 to 1974. Table 3 presents drug use by grade from 1968 to 1970.

#### Grade Average

A statistically significant relationship was found between over-all scholastic average and use of each of the twelve drugs. Use of alcohol was lowest (46.2 per cent using) among those with grade average under 40 and highest (77.3 per cent) among those with averages between 51 and 65. This pattern for alcohol use and grade average did not differ markedly from that found in the earlier surveys. For all other drugs use was most common among students with over-all averages of under 40 or from 41 to 50 and tended to decrease with grade averages above 50. Rates were especially low among those with averages over 75. For example only 18.5 per cent of students with averages of more than 75 smoked tobacco and only 12.7 per cent used marihuana compared to 51.9 per cent tobacco smokers and 35.3 per cent marihuana users with averages of 41 to 50.

#### Father's occupation

As in previous surveys the use of drugs was related to the occupation of the student's father. In this study significant relationships were found for father's

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TABLE 3  
Drug use by grade in 1968, 1970, 1972 and 1974  
Percentage using drugs at least once in past six months

| Drugs                 | Grade |      |      |      |      |      |        |      |      |          |      |      |
|-----------------------|-------|------|------|------|------|------|--------|------|------|----------|------|------|
|                       | Seven |      |      | Nine |      |      | Eleven |      |      | Thirteen |      |      |
|                       | 1968  | 1970 | 1972 | 1968 | 1970 | 1972 | 1968   | 1970 | 1972 | 1968     | 1970 | 1972 |
| Alcohol *             | 22.9  | 39.5 | 45.0 | 41.6 | 53.9 | 60.3 | 59.7   | 71.5 | 84.9 | 70.9     | 82.3 | 91.8 |
| Tobacco *             | 24.6  | 26.0 | 24.2 | 44.3 | 35.1 | 45.1 | 46.6   | 44.0 | 46.5 | 39.7     | 38.0 | 38.7 |
| Marihuana *           | 2.6   | 5.6  | 4.7  | 10.8 | 15.9 | 21.1 | 8.9    | 28.1 | 31.6 | 7.5      | 26.2 | 31.3 |
| Glue *                | 7.2   | 6.8  | 6.1  | 9.4  | 4.9  | 3.3  | 2.6    | 1.7  | 0.7  | 0.7      | 0.8  | 0.7  |
| Other solvents *      | —     | 10.0 | 12.0 | —    | 8.7  | 7.3  | —      | 3.5  | 2.8  | —        | 1.5  | 1.7  |
| Barbiturates *        | 1.3   | 2.3  | 12.3 | 3.9  | 5.1  | 21.4 | 4.4    | 7.0  | 21.6 | 3.8      | 2.7  | 18.0 |
| Opiates *             | 1.1   | 2.5  | 1.9  | 3.0  | 4.7  | 5.6  | 1.8    | 5.8  | 5.0  | 1.0      | 2.8  | 3.6  |
| Speed *               | —     | 2.5  | 1.8  | —    | 5.2  | 4.3  | —      | 6.7  | 3.8  | —        | 3.7  | 3.6  |
| Stimulants *          | 4.3   | 4.6  | 3.0  | 9.4  | 9.3  | 9.5  | 7.8    | 7.9  | 7.5  | 5.6      | 4.6  | 5.3  |
| Tranquillizers *      | 4.8   | 5.4  | 5.9  | 11.4 | 9.0  | 12.6 | 11.6   | 10.8 | 11.7 | 14.6     | 10.4 | 10.9 |
| LSD *                 | 1.1   | 3.4  | 2.0  | 3.9  | 9.5  | 9.2  | 2.1    | 13.4 | 8.8  | 3.8      | 7.6  | 5.7  |
| Other hallucinogens * | 1.0   | 5.1  | 2.2  | 3.1  | 7.5  | 9.8  | 1.9    | 8.7  | 9.8  | 0.9      | 5.5  | 7.5  |
| Total students        | 1816  | 1868 | 1890 | 1752 | 1875 | 1875 | 1733   | 1725 | 1661 | 1446     | 1422 | 1198 |

\* Significant differences ( $p < .05$ ) among grades 7, 9, 11, and 13 in 1974.

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\* Significant differences (p < .05) among grades 7, 9, 11, and 13 in 1974.

occupation and the use of alcohol, tobacco, marihuana, other solvents, barbiturates, opiates, stimulants and LSD.

The use of alcohol, marihuana and barbiturates was highest among students whose fathers were in professional or managerial occupations. The use of tobacco, stimulants and tranquillizers peaked among those who had no father. Those with unemployed fathers were most often users of opiates. Among those with fathers employed as proprietors other solvent use was highest. Drug use, then appears to be most prevalent among the children of professionals and managers or among students who have no father.

The pattern of drug use by father's occupation found in 1974 differs from that found in 1972. In the earlier study the use of most drugs was highest among students having no father (5 drugs), and among those whose fathers were unemployed (4 drugs). Only alcohol use was highest among the children of professionals and managers in 1972.

(4) Sources of information about drugs

In all of the previous surveys students reported acquiring their knowledge about drugs most often from the various mass media. The second most important source in each study was "the kids I hang around with". The church and school, their family or their own experiences were much less often reported as the source from which they acquired most of their information about drugs.

The results in the present study differ considerably from those found in other years. The most used source in 1974 was "the kids I hang around with" which accounted for 33.3 per cent of responses. This is compared to 27 per cent who chose this response in 1972. The mass media declined as the most used source from 39 per cent in 1972 to 30.9 per cent in 1974. The church and school was given by 17.5 per cent of the students; also an increase from 1972 when 15 per cent of the students chose this response.

The source of information chosen by students continued to vary greatly with drug use. A greater proportion of users of tobacco, alcohol, marihuana, glue, other solvents and barbiturates acquired their information from "the kids they hang around with" than did non-users of these drugs. Own experience was also an important source for users. Users of opiates, speed, stimulants, LSD and other hallucinogens report own experience most often as the source of their knowledge about drugs. "Own experience" was rarely given as the major source of knowledge for non-users of these drugs.

Students were also asked where they would go to acquire information on drugs. The source categories included were their teacher, doctor, the public library, the Addiction Research Foundation, the school library, their parents, their friends, or none of these. The largest proportion of students (40.9 per cent) said they would go to the Addiction Research Foundation for information. About 15 per cent would ask their friends; while 12.8 per cent would ask their doctor and 12.6 per cent would go to the public library. Very few would ask their teacher or go to the school library for such information.

For all drugs there was a significant difference ( $p < .001$ ) between users and non-users in the sources they would go to for information about drugs. However, only for speed and LSD was there a difference in the source which was given the largest proportion of responses. Tobacco, alcohol, marihuana, barbiturate, opiate,

tranquillizer, glue, other solvent, and other hallucinogen users, as well as non-users of these drugs were most likely to go to the Addiction Research Foundation. Users of LSD and speed were most likely to ask friends for information and users of other hallucinogens were almost as likely to ask friends as go to the Addiction Research Foundation. The major difference between users and nonusers was that users more often would consult friends; nonusers would more often ask a doctor or go to the public library.

### Discussion

In general, drug use in Toronto changed very little over the past two years especially in comparison to the dramatic changes which took place between 1968 and 1970. The decline in tobacco use from 38.3 per cent in 1972 to 33.7 per cent in 1974 is particularly encouraging. It suggests that the numerous anti-smoking campaigns may have had some effect especially upon males. As well, the decline in use of LSD and other hallucinogens suggests that the attraction of so called "psychedelic drugs" may be diminishing, or that drug education has been effective.

The use of alcohol and marihuana have continued to increase since 1968. Alcohol use, in particular, now involves almost 73 per cent of the students in grades 7, 9, 11 and 13. The finding that about 42 per cent of the students do all or almost all of their drinking at the dinner table with their families suggests that heavy consumption would be rare for them. However, it also illustrates a widespread permissiveness regarding alcohol consumption by parents for their children many of whom would be under the legal drinking age. As well, not all of the increase in the proportion of drinkers can be accounted for on the basis of a change in the legal drinking age in 1971. The lowering of the drinking age may have had a rippling effect, increasing use among progressively younger age groups. Glue use also increased slightly from 1972 to 1974 but it is still lower than the 1968 rate of 5.7 per cent.

The use of opiates, speed, stimulants, barbiturates, and solvents (other than glue) have remained relatively unchanged in the past two years. As well, for most drugs the frequency of use by the users showed little or no change from 1972 to 1974. Tobacco smoking was the only exception; a small decline in frequency of use was found for tobacco.

The trends in drug use in Metropolitan Toronto do not differ greatly from those found in San Mateo, California (San Mateo County, Department of Public Health and Welfare, 1974). Alcohol and marihuana use have continued to increase from 1968 in both studies. As well, tobacco smoking showed recent declines in both Toronto and San Mateo County while speed and opiates in the former and amphetamines and heroin in the latter remained relatively unchanged for the past two years. Barbiturate use appeared to decline in San Mateo but remained relatively unchanged in Toronto. On the other hand, the decline in LSD use in the past two years in Toronto was not evident in San Mateo where the rate of use did not change.

Rates of use of most drugs (i.e., alcohol, amphetamines, LSD, marihuana and tobacco) were much higher in San Mateo than in Toronto for almost every year where both were surveyed. Only barbiturate use was lower in San Mateo while heroin use in San Mateo did not differ greatly from opiate use in Toronto. There were differences in the samples. In San Mateo students in grades 7, 8, 9, 10, 11, and 12 were surveyed, while in Toronto students in 7, 9, 11, and 13 were studied.

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The sampling differences would not appear to account for the differing rates of drug use since both samples include grade 7 which has the lowest rates of use for most drugs. As well, for most drugs the frequency of use by the users showed little or no change from 1972 to 1974. Tobacco smoking was the only exception; a small decline in frequency of use was found for tobacco.

Over the past six years one of the most notable changes in Toronto has occurred in the relationship between sex and drug use. In 1968 drug use appeared to be primarily a male dominated activity but gradually over the past six years sex differences have been diminishing. At present, drug use no longer can be associated primarily with males but patterns of drug use do differ for males and females. Females are more likely to use tobacco, barbiturates, and tranquillizers than males while males are more likely to use alcohol, marihuana and LSD. The tendency for sex differences to diminish may be related to the recent concern given to sexual equality in many areas of life. This may be particularly the case regarding smoking, once felt to be the privilege of only males. However, the tendency for females to use tranquillizers and barbiturates more often than males appears to relate more to other social and psychological concerns not shared by males.

Few changes were found in the relationship between grade and drug use. Again the use of many drugs was highest among grade 9 and 11 students. Alcohol has always tended to increase with grade level and glue and solvent use to decline. Perhaps the most interesting change to occur is the decline in use of many drugs among grade 13 students. With the exception of alcohol use, drug use appears to be rapidly losing popularity among this group of students.

In the present study children of professionals and those with no fathers appear most likely to use drugs. In the earlier studies drug use was more common among those who either had no father or whose father was unemployed. The reason for the increase in drug use among the children of professionals and managers is not clear at present. Perhaps they are exposed to an atmosphere more concerned with current economic problems than other groups and more readily take drugs in response to depressing predictions.

The changes which occurred in the source of information about drugs used by students are quite striking. The decline in importance of the mass media appears to coincide with reduced interest on the part of the various media on the topic of drugs. Increasing attention over the past few years to school drug education appears to have had some impact. More students reported acquiring their information from the church and school than in previous years. However, the increase in the use of peers as the source of information about drugs is not encouraging as such information is not always scientifically accurate.

The use of many drugs appears to have reached a plateau over the past four years and the chemical revolution of the late 1960s seems to be waning at least for high school students. There are clear indications that usage has declined for the most dangerous illicit drugs after the peak was reached in 1970. However, alcohol and marihuana use do not seem to be levelling off. Perhaps future educational programmes should focus more heavily on these drugs. It would be interesting to determine the factors leading to the decline in drug use among the oldest students.

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## Responses of

By Walter A.  
BORTHWICK,\*  
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AEQI, PAL, U.S.

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