

Drug Use, Dependence, and Addiction at a British Columbia University: Good News and Bad News

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ABSTRACT

Two studies were undertaken to determine the perceived and actual prevalence of drug use, dependence, and addiction among students at Simon Fraser University. In the first, 144 students estimated the percentage of their fellow students that used each of seven drugs daily. Subsequently, each student reported how many days he or she had personally used each drug in the previous month. Estimated daily use (attributed to fellow students) was far higher than reported daily use. In a second study, detailed individual interviews of another group of students confirmed the unexpectedly low frequencies of daily use found in the first study:

However, this does not mean that dependence and addiction were not a problem; of 107 students interviewed in the second study, 31% reported current dependence and about 5% current addiction. Surprisingly, the most common drugs in compulsive use were caffeine and nicotine followed, at a distance, by cannabis and alcohol. A new orientation towards drug problems among Canadian undergraduates in the 1980's is proposed, in which exaggerated concern over exotic, illicit drugs is replaced by greater awareness of serious problems of dependence and addiction to familiar drugs.

RÉSUMÉ

Deux études ont été menées afin de déterminer la perception des étudiant(e)s de l'Université Simon Fraser en matière d'usage de drogue, de dépendance à celle-ci, de toxicomanie, et leur importance réelle. Dans la première étude, 144 étudiant(e)s ont évalué le pourcentage de leurs collègues qui consommaient quotidiennement chacune des sept drogues proposées. Ensuite, chaque étudiant(e) a précisé sa propre consommation quotidienne de ces drogues dans le mois précédent. Les suppositions d'usage quotidien (par les collègues) étaient bien plus importantes que ce qui a été effectivement rapporté. Dans la deuxième étude, des entrevues individuelles dans un autre groupe d'étudiant(e)s ont confirmé le faible taux de consommation quotidienne relevé dans la première étude.

Cependant, ceci ne signifie pas que la dépendance et la toxicomanie ne posent pas de problème. Des 107 étudiant(e)s interviewé(e)s dans la seconde étude, 31%

ont confirmé une dépendance et 5% une toxicomanie. Fait surprenant, les drogues les plus utilisées de façon régulière étaient la caféine et la nicotine, suivies d'assez loin par le cannabis et l'alcool. Une nouvelle approche des problèmes de drogue parmi les étudiant(e)s canadien(ne)s dans les années 80 est proposée, dans laquelle l'inquiétude quelque peu exagérée au sujet des drogues exotiques illicites est remplacée par une plus grande mise en garde contre les problèmes sérieux de dépendance, voire même de toxicomanie, à l'égard de drogues plus familières.

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Should more attention be directed to the problem of drug dependence among students? Or, is the public view of drug use at universities inflated by media sensationalism and memories of the 1960's? Evidence will be presented that the answer to *both* these questions is "yes", because serious drug problems among students are presently obscured by exaggerated worries, particularly over exotic, illicit substances.

Surprisingly, few data are available on compulsive drug use among Canadian university students. Some studies on the frequency of alcohol use have been reviewed in this journal (Caleekal-John & Goodstadt, 1983) but there are few on other drugs. American data are of limited relevance because trends sometimes differ so sharply between the two countries that American statistics obscure Canadian realities (Smart, 1983, p. 58, 60). Moreover, even appropriate frequency-of-use data do not reveal the prevalence of dependence and addiction, because some compulsive users do not use extraordinary amounts and some high consumers are not dependent or addicted (Zinberg, 1984, pp. 42-45; Westermeyer, 1982, p. 91). Individual usage must be examined to identify compulsive users.

Two studies on the perceived and actual extent of drug use, dependence, and addiction among students at Simon Fraser University are reported here. Study 1 was preliminary to the more detailed investigation of Study 2.

STUDY 1

The 144 undergraduate students enrolled in a "social issues" course were asked: "What percentage of Simon Fraser University students use the following drugs every day or almost every day?" Seven licit and illicit drugs were listed. About a week later, they were asked the number of days in the previous month they had themselves used any quantity of each drug.

The results appear in Table 1. Obviously, estimated daily use greatly exceeded reported daily use, especially for illicit drugs and alcohol. This degree of misperception *of themselves* by the students illustrates the need for accurate information on this topic.

TABLE 1
 Estimated and Self-Reported Daily Drug
 Used by University Students

	"Social Issues" Students Estimated Percentage "Daily Use"	Students Self-Reported "Daily Use" *	Chemistry Students Estimate Percentage "Daily Use"
Caffeine	83.3	46.5	84.0
Tobacco	54.7	18.1	42.1
Alcohol	51.4	0.7	34.9
Cannabis	28.7	2.1	14.3
Heroin	6.3	0.0	2.9
Cocaine	12.3	0.0	3.9
Tranquilizers	17.0	0.0	10.0

*25 or more days of any use in the previous month

However, estimates of use might be artificially high, because students were polled who had chosen to enroll in a social issues course with drugs as its major focus. This possibility was checked by polling an introductory chemistry class of 134 students. Their estimates were, in fact, lower, averaging 62% of those of the social issues students. Nonetheless, the chemistry students' estimates also grossly exceeded reported use (Table 1). A second possible artifact is that reported use could be too low, as students may have been reticent to report drug use in a group setting. This possibility was investigated in Study 2.

STUDY 2: METHOD

The object of Study 2 was to determine with the greatest possible accuracy the frequency of drug use, dependence, and addiction by undergraduate students. Two major methodological obstacles required detailed attention. First, words like "addiction" are used inconsistently, so a choice among definitions was required. Second, drug problems are often concealed, so self-disclosure had to be facilitated. A new self-report technique was developed with reference to these two problems.

The problem of definition

In recent years, "addiction" has been identified with withdrawal symptoms and tolerance, but there are growing concerns about this equation. For example, several studies have shown that many people who live the devastating lives of street heroin addicts do not have withdrawal symptoms (e.g., Glaser, 1974,

O'Brien, 1976). Second, cocaine use can be as uncontrollable as heroin addiction, but cocaine "does not produce serious physiological symptoms of withdrawal" (Grinspoon & Bakalar, 1976, pp. 149-150). Third, some drugs that produce withdrawal symptoms are not used compulsively, for example, imipramine, a drug prescribed for depression (Jaffe, Peterson, & Hodgson, 1980, p. 11). Finally, tolerance develops to the sedative effects of the phenothiazines (chlorpromazine, etc.), and to other drugs that are not addicting (Rech and Moore, 1971, p. 299-301).

As these concerns have emerged, a view of addiction as a compulsive involvement – with or without withdrawal symptoms and tolerance – has developed. This broadened view grows from extensive experimental, clinical, and field-study data (e.g., Alexander, 1982; Chein, Gerard, Lee, & Rosenfeld, 1964; Peele, 1985; Wurmser, 1978). Only two advantages of the broader view can be discussed here.

First, it is, essentially, the standard meaning of the word "addiction" in the English language. The *Oxford English Dictionary* defines "addiction" as: "...a surrender or dedication of anyone to a master..." (Murray, Bradley, Cragie, & Onions, 1933, p. 104). The usage of "addiction" over the last four centuries, summarized in the *OED*, indicates a compulsive involvement but nowhere implies tolerance and withdrawal symptoms.

Second, the broader view refers to a socially significant condition. Surrender or dedication to a drug as "to a master" is a much more serious concern, in an individualistic and democratic culture, than are withdrawal symptoms. Many coffee drinkers, for example, experience painful withdrawal symptoms if they abstain, but this is of minor social significance.

An operational form of the broad definition of addiction can be derived from distinctions laid out by Jaffe (1980) who defines addiction as: "a behavioral pattern of drug use characterized by overwhelming involvement with the use of a drug (compulsive use), the securing of its supply, and a high tendency to relapse after withdrawal." (Jaffe, 1980, p. 536). Jaffe explicitly excludes tolerance and withdrawal symptoms from this concept. He adds: "Addiction is thus viewed as an extreme on a continuum of involvement with drug use and refers in a *quantitative* rather than a *qualitative* sense to the degree to which drug use prevades the total life activity of the user and to the range of circumstances in which drug use controls his behavior." (p. 536). The quantitative dimension alluded to is *not* quantity of drug use, but of involvement with the drug.

Jaffe also distinguishes "addiction" from "dependence," describing "dependence" as an inflexible involvement that may be harmful, but is not overwhelming, as addiction is. Similar distinctions between more and less severe forms of compulsive drug use have been made by Chein, Gerard, Lee, & Rosenfeld (1964, p. 22-29); Kaplan and Wieder (1974, p. 46); and Wurmser (1978, p. 5-9).

Jaffe's definitions of addiction, dependence, and three lesser forms of drug involvement were the starting point for Study 2. Several hundred students have been asked to classify their drug involvements according to his definitions. These pre-tests generated the modified definitions shown in Table 2.

TABLE 2
Involvement Definitions*-Modified from Jaffe (1980)

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1. (Abstention) Did not use at all
 2. (Experimental Use) Used on no more than a few occasions out of curiosity, or to conform to a group
 3. (Circumstantial Use) Used only in specific circumstances when effects were helpful, e.g., unusual fatigue, illness, pain, etc.
 4. (Casual Use) Used infrequently for its pleasurable effects
 5. (Recreational Use) Used regularly for its pleasurable effects
 6. (Dependence) Used regularly, without medical necessity: effects felt as needed for continued well being: probably would continue use in spite of adverse medical or social effect
 7. (Addiction) Overwhelmingly involved with using and/or obtaining it: prevades total life activity and controls behavior in a wide range of circumstances: high tendency to resume use after stopping
 8. (Aversive Addiction) Definition 7, plus unambiguously negative responses to the following two questions.
Did you like being that involved with _____? Did you feel good about yourself when you were that involved with _____?
 9. (Withdrawal Symptoms) Continued use is necessary to prevent a withdrawal syndrome which could include headaches, nausea, diarrhea, chills, cramps, mental imbalance, etc. (At least one clearly physical symptom must be included, i.e., other than "mental imbalance")
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*Names in parenthesis were not on the printed sheet given to students during the interview. Definition 9 was only used in addition to another level of involvement (i.e. definitions 1-8).

An unexpected distinction emerged during pre-testing. Student subjects described some overwhelming involvements as intensely aversive but said others were not particularly unpleasant. Peele (1981) has argued that the term "addiction" should be used only for those intense involvements that are experienced aversively. It was decided to include both Jaffe's and Peele's definitions, treating Peele's as the more severe. Therefore, students who applied definition 7 (addiction) to their involvement with a drug were asked two follow-up questions, "Do you like being that involved with _____?" and "Do you feel good about yourself when you are that involved with _____?" Students who answered unambiguously "no" to *both* questions were put in category 8 (aversive addiction). Those who did not were left at definition 7.

Thus, dependence, addiction, and aversive addiction, form a rough scale of severity. For convenience, these three kinds of involvement are referred to collectively as “compulsive drug use.”

The problem of concealment

Many people are sensitive about compulsive drug use and might resist participating in a study of it. Study 2 addressed this problem in several ways:

Names of subjects were not recorded. The Canadian Psychological Association Ethical Code was cited as assurance of professional standards of confidentiality.

“Addiction” and “dependence” were not mentioned before or during interviews. Rather, students were invited to discuss their “involvements with drugs and other practices.” Involvement definitions were referred to by number during the interview, not by name.

The interview was interactive. Students had the list of involvement definitions before them throughout. After selecting a definition to describe their involvement with a drug, they were asked to explain how the definition applied. This check was dropped only when the interviewer became convinced that the student was using each definition accurately and applying it uniformly to the various drugs. When a student’s involvement did not fit any definition (which was rare), a verbal description was recorded.

The importance of accuracy was stressed and the students’ help was solicited to achieve it. They were told that any question could be omitted for any reason and that no answer was greatly preferable to an inaccurate one. The occasional student who declined a question was not pressed. Most students became engaged in the task of classifying their involvements accurately. In fact, students sometimes commented on how interesting the interview was, and a number sought out their interviewer later to add a point they had forgotten during the interview.

Interviewer training stressed being non-judgemental and encouraging subjects to respond carefully. Numerous interviews were observed during both training and data collection to verify their accuracy.

Because compulsive drug users might avoid participating in a study of drug use, self-selection could seriously bias the results. Persistent efforts with random sampling techniques during pre-testing produced a maximum response rate of 85-90%, which seemed insufficient. Finally, to control self selection, subjects were chosen using a strategy adapted from Schachter (1982). The two interviewers were given a list of all people in a group they were to interview: for one, all student employees at the University Center Building, for the other, all students currently enrolled in fourth year psychology courses. To foster willingness to participate, groups were selected to which the interviewer also belonged. Interviewers then attempted to interview *everyone* on their list.

While this approach minimized self-selection, some problems were introduced. Obviously, students employed on campus and those taking fourth year psychology courses, are overrepresented. Also, students might be more reticent to speak openly to a confrère than to a total stranger. However, the gain seems to outweigh

TABLE 3
Drug Categories - Modified from Julien (1981)

<u>Barbiturates</u> ("downers", Luminal, Amytal, Nembutal, Seconal, etc.)
<u>Non-barbiturate Hypnotics</u> (Doriden, Noludar, Sopor, Quaaludes, Somnafac, etc.)
<u>Tranquilizers</u> ("sleeping pills", Miltown, Equanil, Librium, Valium, etc.)
<u>Alcohol</u>
<u>Solvents/Gases</u> (glue, gasoline, ether, chloroform, butyl nitrate, NO ₂ , etc.)
<u>Amphetamines</u> ("uppers", "bennies", Benzedrine, Dexedrine, Methedrine, etc.)
<u>Clinical Anti-depressants</u> (Parnate, Tofranil, Elavil, etc.)
<u>Cocaine</u>
<u>Caffeine</u> (coffee, tea, cola, etc.)
<u>Nicotine</u>
<u>Non-opiate Analgesics</u> (aspirin, tylenol, etc.)
<u>Codeine</u> (222's, 292's, cough medicine)
<u>Opiates</u> other than codeine (opium, heroin, morphine, Numorphan, Dilaudid, Percodan, Demerol, etc.)
<u>Anti-psychotics</u> (Thorazine, Serpasil, Inapsine, Haldol, Lithium, etc.)
<u>Cannabis</u> (marijuana, hashish, hash oil, THC, etc.)
<u>Psilocybin</u> (mushrooms)
<u>Other Hallucinogens/Psychedelics</u> ("acid", LSD, MDA, PCP, mescaline/peyote, etc.)
<u>Other Drugs</u>

the losses, for there is no reason to suppose that the two arbitrarily selected groups would differ markedly in drug use from other students, and the students spoke freely and comfortably in most interviews.

In spite of the pitfalls of this kind of research, several studies surveyed by Zinberg (1984; pp. 64-68) and Westermeyer (1982, p. 141) suggest that carefully conducted drug use interviews can be valid. Zinberg has described the positive results as an elaborate cross-checking scheme.

Interview Procedure

A comprehensive list of drug types (Table 3) was modified from Julien (1981). Students were asked how many days in the previous month they had used any quantity of each drug type and the involvement definition that best described their use. Definition 9, a description of physical withdrawal symptoms appearing when

drug use ceased, was only recorded in addition to a pattern of involvement that applied when the drug was in use. Care was taken to insure that definitions were applied uniformly to each drug.

Students were then asked to indicate their highest-ever level of involvement with each drug. They were also asked about any involvements with *resisting* the use of a drug, for example quitting smoking. Since these “negative involvements” can be compulsive, the same involvement definitions used to rate drug involvements were applied, if applicable. The “negative involvement” question was used only with the University Center Building group, so the N was 59 rather than 107 as with all other items. Finally, students were asked “what else are you involved with?” They were asked to describe each non-drug involvement using the drug involvement definitions, if they could. These “non-drug” data will be summarized in another report.

Participation Rate and Subject Characteristics

Of 109 students initially selected, 107 completed interviews. One moved away before being interviewed and one effectively refused to participate by repeatedly evading and postponing the interviewer. The median age was 25, close to the average for Simon Fraser University, which enrolls many older students. There were 39 men and 68 women, the imbalance arising primarily because more psychology majors are female. Because males used drugs somewhat more than females, important data are presented separately by sex in the text.

STUDY 2: RESULTS

Current Drug Use, Dependence, and Addiction

The percentage of students using each drug daily in the previous month is given in column 1 of Table 4. These figures confirm the reported frequencies of daily use from Study 1 and fall far below student estimates of daily use (cf. Table 1).

Occasional use was much more frequent than daily use. The percentage of students using each drug at least once in the previous 30 days is given in Table 4, column 2. Over 90% of the students had used caffeine and alcohol, around 45% used non-opiate analgesics and cannabis, 33.6% used nicotine. Current use of all other drugs was lower.

Of the 107 students, 38 (35.5%; 16 males and 22 females) reported being dependent, addicted, or aversively addicted to one or more drugs. The percentage of students who were compulsive users of each drug appears in Table 4, column 3. Compulsive use was most frequent for caffeine and nicotine, being reported by 21.4 and 19.6% of the students respectively. Compulsive use of cannabis and alcohol was reported by 2.8% and 1.9% of the students respectively. (The sum of these percentages exceeds 35.5% because some students used more than one drug compulsively).

Columns 4, 5, and 6 of Table 4 divide the compulsive use data into dependence,

addiction, and aversive addiction. This was tabulated expecting that caffeine and nicotine would elicit the less severe forms of compulsive involvement, but there was little difference between drugs.

Every student who reported current addiction to a drug *also* fit the aversive addiction definition. Of the 107 students, 3.7% reported current aversive addiction to tobacco, 2.8% aversive addiction to caffeine, and 0.9% aversive addiction to cannabis. Five students produced all the current aversive addiction scores. Their interviews, plus one other, are summarized individually below.

Types of drug users

Non-compulsive users. Almost two-thirds of the students (69; 23 males and 46 females), were not currently dependent, addicted, or aversively addicted to any drug. Of the 69, 44 did not use any drug daily. Almost all of the 25 daily users in this group used only caffeine, classifying their involvement as recreational use (definition 5). Of these 69 non-compulsive users, 29% had used a drug compulsively in the past, but only 8% reported current “negative involvements” with controlling their own drug use.

Drug problems in this majority group of students appear minimal: some may be harmed by regular, usually light caffeine consumption, a few need to control drugs they have used compulsively in the past, and some risk of arrest for possession of marijuana, since 25 of the 69 had used marijuana at least once in the previous 30 days.

Students dependent only on caffeine and/or nicotine. About a quarter of the students (27.1%) reported dependence to caffeine and/or nicotine as their only compulsive drug use. Although these practices carry no legal penalty, some students expressed serious concern over their dependence.

Students dependent on alcohol or cannabis. Three students (2.8%) described themselves as currently dependent on alcohol or cannabis. Two of the three also reported nicotine dependence. In addition to health hazards probably associated with regular use of alcohol and cannabis, these students had the problem of greater social stigma and, in the case of cannabis, greater vulnerability to arrest than students in previous categories.

Students with multiple dependence or addiction. The remaining 6 students (5.6% of the sample) reported more extreme drug involvements. These are described individually below:

Female, age 28. Current aversive addiction to nicotine of 8 years duration. Withdrawal symptoms also reported. Current dependence on caffeine reported as well.

Female, age 26. Current aversive addiction to caffeine of 2 years duration. Has used 15 of 17 drug categories, including clinical anti-depressants.

Female, age 23. Current aversive addiction to caffeine and nicotine of 5 and 3 years duration. Drug use otherwise light. Describes “politics” as her greatest involvement.

Male, age 27. Current aversive addiction to nicotine, duration 8 years. Also daily use of alcohol and cannabis with former dependence on alcohol and former aversive addiction to cannabis.

Male, age 32. Current dependence on caffeine, nicotine, and alcohol, each of many years duration. In addition, daily or almost daily use of cannabis, non-opiate analgesics, and cocaine. Past addiction to alcohol ending 1 year prior to interview and past aversive addiction to amphetamines ending 14 years prior to the interview.

Male, age 30. Current aversive addiction to caffeine, nicotine, and cannabis, all persisting for last 17 years. Has used 15 of the 17 categories of drugs, including clinical anti-depressants.

Lifetime Drug Use, Dependence, and Addiction

In response to the question about their highest past drug involvements, the students reported having used (i.e., involvement at the level of definition 2 or higher) a mean of 7.61 drug types. Variability was large, 28 of the students having used 10 or more of the 17 drug types and 26 having used 5 or less. The percentage who reported ever using each drug is given in Table 5, column 1. Almost every student had used caffeine, alcohol, and non-opiate analgesics (i.e., aspirin-like preparations). Other drugs had been used by progressively fewer students ranging down to anti-psychotics, which had been used by only one.

Of the 107 students, 58 (54.2%; 24 males and 35 females), reported having been at some time either dependent, addicted, or aversively addicted to one or more drugs. The percentage that had used each drug compulsively is given in Table 5, column 2. Four drugs accounted for the bulk of lifetime compulsive drug use, with 32.7% and 29.9% having used caffeine and nicotine compulsively and 14.0% and 13.1% having used cannabis and alcohol compulsively. In addition, two students (1.9%) had used barbiturates compulsively, and one student (0.9%) reported having used each of the following compulsively: tranquilizers, cocaine, opiates other than codeine, and amphetamines. For each drug, dependence was the most frequent form of compulsive use.

The drug eliciting the greatest number of aversive addiction responses was nicotine (6 students) followed by caffeine (3), cannabis (3), alcohol (2), and amphetamines (1). Column 6 and 7 in Table 5 give the number of students reporting ever having experienced either withdrawal symptoms or negative involvement for each drug. Again, frequencies were greatest for nicotine and caffeine, followed by cannabis and alcohol.

DISCUSSION

These data suggest that the “drug problem” among university students may be simultaneously exaggerated and underrated in the public mind. Compulsive use of so-called “hard drugs” is rare, relative to the estimates of the students themselves.

TABLE 5
 "Lifetime" Drug Use and Indices of Compulsive Use for 107 University Students

	Ever Used %	Ever Used Compulsively %	Highest Level Compulsive Use			Ever Had Withdrawal Symptoms %	Ever Had Negative Involvement % (N=59)
			Dependence %	Addiction %	Aversive Addiction %		
Caffeine	98.1	32.7	29.0	0.9	2.8	4.7	8.5
Alcohol	98.1	13.1	10.3	0.9	1.9	0.0	6.7
Non-opiate Analgesics	97.2	0.0	0.0	0.0	0.0	0.0	0.0
Cannabis	84.1	14.0	8.4	2.8	2.8	0.9	5.1
Nicotine	77.6	29.9	22.4	1.9	5.6	3.7	20.3
Hallucinogens	46.7	0.0	0.0	0.0	0.0	0.0	1.7
Codeine	43.0	0.0	0.0	0.0	0.0	0.0	0.0
Tranquilizers	41.1	0.9	0.9	0.0	0.0	0.9	0.0
Cocaine	40.2	0.9	0.9	0.0	0.0	0.0	0.0
Psilocybin	39.3	0.0	0.0	0.0	0.0	0.0	0.0
Opiates other than Codeine	33.6	0.9	0.0	0.9	0.0	0.9	0.0
Amphetamines	27.1	0.9	0.0	0.0	0.9	0.9	0.0
Solvents	15.8	0.0	0.0	0.0	0.0	0.0	0.0
Barbiturates	11.2	1.9	0.9	0.9	0.0	0.0	0.0
Other Drugs	10.3	0.0	0.0	0.0	0.0	0.0	1.7
Clinical Anti-depressants	6.5	0.0	0.0	0.0	0.0	0.0	0.0
Non-barbiturate Hypnotics	4.7	0.0	0.0	0.0	0.0	0.0	0.0
Anti-psychotics	0.9	0.0	0.0	0.0	0.0	0.0	0.0

However, about 31% of the students are currently drug dependent and about 5% report aversive addiction, primarily to nicotine and caffeine, with cannabis and alcohol a distant third and fourth.

The prominence of nicotine and caffeine in this report may be surprising because it is commonplace to regard exotic illicit drugs as comprising the greatest risk of compulsive drug use, and to regard even addiction to familiar drugs as relatively innocuous. This may be clarified by examining some underlying issues.

“Addiction” to nicotine and caffeine?

In everyday language, people often describe themselves as “addicted” to smoking or coffee drinking if they consume a pack or several cups a day and cannot quit. However, by Jaffe’s (1980) definitions, as applied here, such involvement is dependence, not addiction. The term “addiction” is reserved for an overwhelming involvement that pervades and controls a person’s life, like the heroin involvement of a prototypical “junkie”. “Aversive addiction” requires, further, that people dislike their involvement with the drug, and dislike themselves for being that involved. This is a disastrous state, whatever drug is being used.

As might be expected, *most* daily users of nicotine and caffeine described themselves as dependent, rather than addicted or aversively addicted. However, four smokers and three coffee drinkers chose the aversive addiction description. They were questioned closely to make sure they understood the full meaning of the description they were applying to themselves. They described vividly how their smoking and/or coffee drinking adversely affected their eating and sleeping, choice of friends, relationships with family, work and school performance, and their self-concepts.

Brecher (1972) has vividly recorded that from tobacco’s first introduction to Europe, fortunes have been lost, lives destroyed, and health ruined in individuals who became overwhelmingly involved. Anyone who has watched the slow suicide of an unreformed smoker with emphysema or cancer knows the reality of nicotine addiction. There is no apparent reason to doubt that addiction to tobacco can be as tragic as addiction to heroin or cocaine, or to doubt the self-diagnosis of the four students who defined themselves as aversively addicted to it.

Although caffeine probably has the most innocuous status of any drug in modern culture, severe addiction to caffeine has been described unmistakably in the historical literature (Brecher, 1972; Greden, 1974). In modern medical literature, references to “caffeinism” are increasing. Death from caffeine overdose has been reported (McGee, 1980). There are case studies of people suffering from severe, chronic anxiety, insomnia, headaches, dizziness and restlessness whose symptoms were eliminated when their large daily caffeine intake was reduced (Greden, 1974; Lutz, 1978). Other studies document the resistance of some patients to giving up excessive consumption of caffeine (Sours, 1983) and caffeine-analgesic preparations (Murray, 1973) in the face of grave warnings from their doctors.

Another perspective on caffeine addiction was suggested by the three caffeine users who defined themselves as aversively addicted. They spent large amounts of

time drinking coffee, smoking (two were also aversively addicted to tobacco), and "socializing," and viewed this behavior as excessive and wasteful. It may be that caffeine addiction among university students is closely linked to a type of procrastination, which, in its extreme form, can be a terminal academic problem for some university students (Daher, 1984). The apparent link between caffeine addiction and extreme procrastination fits with Gilliland and Andress' (1981) report that students at an American university who consumed 5 or more cups of coffee/day suffered more anxiety and depression and received lower marks and more "incompletes" than those who drank less. The 39 students in their highest caffeine-consuming group had a mean semester grade point average of 1.83, a failing level.

As Zinberg (1984) urges, pharmacological properties of drugs, by themselves, cannot explain dependence and addiction. Rather, compulsive drug use is only part of a particular person's way of dealing with the threats and problems of a particular setting. Thus, the relatively high frequency of caffeine addiction does not mean that caffeine is an evil substance. Rather, it provides additional insight into a serious psychological problem that plagues many students.

Compulsive use of cannabis

Although most students reported only occasional use of cannabis, two defined their current use as dependence and one as aversive addiction. Thirteen others had used cannabis compulsively in the past, 8 describing their former use as dependence, 3 as addiction, and 2 as aversive addiction.

Thus, these data place the students' susceptibility to compulsive use of cannabis third, after nicotine and caffeine. Obviously, this contradicts a common supposition that cannabis cannot be addicting because it does not produce withdrawal symptoms (Grinspoon, 1977). Only one of the 13 former compulsive users, and none of the 3 current ones reported withdrawal symptoms. Other recent findings indicating that people can use cannabis addictively are that many chronic users report feeling addicted or dependent (Weller & Halikas, 1980) and that many cannabis users enroll in organizations like "Narcotics Anonymous" and "Potsmokers Anonymous" (Fuerst, 1981).

Student Use of Alcohol

Intermittent alcohol use is almost universal in this group of students, as it is in other Canadian university students (Caleekal-John & Goodstadt, 1983). As well, three (2.8%) students reported current daily use of alcohol and two of these described themselves as dependent. Twelve additional students (11.2%) reported using alcohol compulsively in the past: 9 reporting dependence, 1 addiction, and 2 aversive addiction. About 7% of the students reported past "negative involvement" with alcohol.

Although recent media reports suggest that alcohol abuse is a major problem in Canadian universities (Lamphier, 1983), the present data indicate that less than

2% of students are currently compulsive users. Other kinds of problems may, of course, arise in connection with non-compulsive, irregular drunkenness.

Student Use of "Hard" Drugs.

Current student use of "hard" drugs is low and no student reported currently using any of them compulsively (Table 4). On the other hand, many students have used "hard" drugs in the past, a few compulsively (Table 5).

In part, the low current levels of "hard" drug use, while contradicting expectations from past decades, reflect a general decline in illicit drug use in Canada since the 1970s (Smart, 1983, p. 218). In part, it may also reflect realities of contemporary university life. For many students, black market prices are out of reach. Moreover, heavy workloads may make regular use of powerful drugs impossible for successful students.

The use of "hard" drugs may be much more prevalent in other segments of society. For example, data currently being collected from a group of British Columbia sky-divers suggest greater use of hard drugs and more dependence, addiction, and negative involvement. As suggested earlier, the "drug problem" has less to do with pharmacological properties of drugs than with the needs of particular people in particular situations. Therefore, very large differences between different segments of society should be expected.

Transience of Compulsive Drug Use

Compulsive drug use is often transient. Comparison of column 3 in Table 4 with column 2 in Table 5 will show that about a third of those who have used nicotine and caffeine compulsively no longer do so. The recovery rate is higher for cannabis and alcohol. "Once an addict, always an addict" is not the rule for these students. This finding supports other recent demonstrations of "spontaneous remission" or "maturing out" of addiction, even to alcohol, tobacco, and heroin (Peele, 1985, chapter 2; Schachter, 1982; Waldorf, 1983; and Winick, 1962). Transience must be taken into account for any comprehensive understanding of compulsive drug use among students.

CONCLUSIONS

These data, should they generalize to university students across Canada, would suggest a new orientation to student drug problems in this decade. The good news is that the majority of students in this sample do not use any drug compulsively. In fact, the median student uses nothing more alarming than daily caffeine, alcohol 10 days a month, aspirin 3 days a month and marijuana two days a month. Half of the students have a lower drug intake than this. Among those who take more drugs than the median, the "hard drugs" that society abhors are seldom used and compulsive use of them appears rare, although occasional use in the past is not uncommon.

The bad news is that widespread compulsive use of caffeine and nicotine and to a lesser extent cannabis and alcohol may comprise a significant health problem – heavy use of any of these can be dangerous, including coffee (Gilbert, 1976; James & Stirling, 1983). As well, hazards may synergize when these drugs are used in combination (Istvan and Matarazzo, 1984). In addition, about 5% of students report aversive addiction to nicotine, caffeine, and/or cannabis. As defined here, aversive addiction is a disastrous condition, regardless of the drug involved.

On balance, these data provide little support for apocalyptic views of drug addiction on campus. Even compulsive use of caffeine, alcohol, cannabis and nicotine, has the dimensions of a manageable problem, especially since compulsive drug use appears to be more transient than was supposed in the past. However, exaggerated estimates of daily use of illicit drugs and alcohol by the students indicate the need for a re-orientation to identify, and face, the drug problem as it really is.

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