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AUTHOR Mehra, N.
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ABSTRACT

This study was designed to collect and analyze study reactions on a broad range of social, cultural and educational issues including the nonmedical use of drugs. Two questionnaires and a personality inventory were used in the collection of data that was obtained from a stratified random sample of 282 students of the University of Alberta. An analysis of data indicated: the use of drugs other than alcohol and tobacco among resident students is essentially limited to about one-fourth and in experimental sessions only. For hard drugs like LSD, heroine, etc. the reported percentage is much smaller at only 2%. Students, in general, seem to be quite aware of drug-sources and to be aware of the "drug-culture" and its attributes. The variables, "sex," "year of studies," "family socio-economic level." users "concept of God," and "sibling marijuana use" were found to be significantly related to drug usage. The profiles of drug-users differed significantly from those of non-users in the personality inventory indicating the drug user to be individually more "expedient" and socially "undisciplined." Drug users were generally more liberal in their social attitudes than non-users. (Author/MJM)

SOCIO-PSYCHOLOGICAL CORRELATES OF NON-MEDICAL USE OF DRUGS AMONG UNIVERSITY STUDENTS

By

Dr. N. Mehra

(Communicated by Professor A.A. Ryan , Provost, the University of Alberta, at the Symposium on Alcoholism and Drug Abuse, held at the University of Alberta, Edmonton, June, 1973.)

THE UNIVERSITY OF ALBERTA

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ABSTRACT

The contents of this article are improved and extended excerpts from a larger study "The resident student: A Study of Student Opinions and Reactions" completed by the author at the University of Alberta. The study was conducted on the Lister Hall resident student population in 1969-70 (and replicated in the following year) with a view to elicit student reactions to a broad range of social, cultural and educational issues including the non-medical use of drugs among students. The present article is written with three chief objectives in view: (1) To provide a general description of student involvement in drug usage, (2) To isolate factors significantly associated with drug-use and (3) To detect those which contribute maximally to it. Two questionnaires and a personality inventory were used in the collection of data which was obtained from a stratified random sample of 282 respondents (17% of the resident population in Lister Hall complex).

An analysis of the data, based on 83% response, brought the following facts to the surface: The use of drugs other than alcohol and tabacco among resident students is essentially limited to about one-fourth and in experimental sessions only. For hard drugs like LSD, heroine etc. the reported percentage is much smaller at 2% only. Students, in general, seem to be quite aware of drug-sources and to be cognitive of the "drug-culture" and its attributes. The variables, "sex", "year of studies", "family socio-economic level", users "concept of God", and "sibling marijuana use" were found to be significantly related to drug usage.

The profiles of drug-users differed significantly from those of non users on "G" and "Q3" factors of the personality inventory,

indicating the drug user to be individually more "expedient" and socially "undisciplined". Drug users were generally more liberal in their social attitudes than non-users.

Predictors of marijuana usage were also delineated using the factor-analytic techniques. Twenty-one percent of the variability in marijuana usage was predicted. This seems encouraging considering that the variables were not originally selected "ad hoc". Four factors were found particularly relevant to drug-use: high "liberalism", high "secularity", low "academic responsibility" and high "vertical mobility". The truncated view of the drug-user resulting from these findings is that of a relatively more anxious and introverted person.

These findings bring out a very important dimension on which the drug-user differs sharply from the non-user, namely, attitudinal temperamental dimension. One can, in fact, opine that these differences reveal quite distinct paradigms of belief systems of the two groups. It seems very relevant to map such paradigms and examine their relationship to behavior patterns.

SOCIOPSYCHOLOGICAL

CORRELATES OF NON-MEDICAL USE OF DRUGS

AMONG UNIVERSITY STUDENTS

Introduction and Purpose

Few campus issues today concern the public and the intellectual community so deeply as the recent phenomenal increase in the non-medical use of drugs on university campuses. The public is naturally concerned to find out how pervasive the use of drugs is, that is, the extent, the frequency, and the conditions under which today's young people are taking drugs. The intellectual community is attempting to investigate who these young people are, the nature of their family background, their social and educational values and their personality disposition. At the heart of the issue are questions concerning conditions which contribute to the use of drugs and the role the university community should play in alleviating some of these conditions. The present article is an attempt to provide some partial answers to these questions. More precisely, this article is written with the following three chief objectives in mind: (1) To provide a general description of student involvement in the non-medical use of drugs; (2) To isolate factors significantly associated with the use of drugs; and (3) To identify and detect factors which contribute to drug usage among students.

The contents of this article are improved and extended excerpts from a larger study "The Resident Student: A Study Of

Student Opinions and Reactions" completed by the author. This study was designed to collect and analyse student reactions on a broad range of social, cultural and educational issues including the non-medical use of drugs. The study was conducted on the Lister-Hall residence student population in 1969 - 70 and was replicated the following year to check the reliability of the obtained results. The text of this article is based on the 1969-70 survey, with comments on the 1970-71 survey interpolated in parentheses whereever deemed necessary or appropriate.

Design for the Study

Two questionnaires and a personality inventory were used to collect data for the study. The information elicited was, for the most part, biographical and attitudinal. Questionnaire 1 contained items concerning students' background characteristics, educational aspirations and achievement patterns. Questionnaire II was designed to elicit information of a personal and confidential nature, and included items on a broad range of social and educational topics. The Personality Inventory used was the 16PF Form A (1962) as developed by Raymond B. Cattell and Herbert W. Eber at the Institute of Personality and Ability Testing.

A stratified random sample of 282 persons (approximately 17% of the total residence population) was selected. Stratification was by sex and year of studies. Subjects were reassured regarding the anonymity of their answers and their identification was not required. A total usable response of 83% was obtained -- a reasonably high response for the purposes of analysis.

Since the first two sections of this study were meant to be essentially descriptive, the data for these parts were analysed in the form of frequency distributions. To test the statistical significance of differences in two or more distributions, mostly the chi-square test for contingency was used. Generally speaking only those items are included in the text of this paper, where the differences in two or more distributions were found to be significant at least at the 5% level. A few items which do not meet this criterion are nevertheless included in th text, since they indicate some interesting patterns or relationships. The methodology employed in the third section of this study is described and discussed along with the results.

Findings of the Study

L. General Description

A drug-user in this article is defined as a person who uses drugs without prescription on an experimental, occasional or regular basis.

Use of Drugs other than alcohol and tobacco among resident students seems to be limited essentially to experimental sessions only, with regular use restricted to a small minority. One quarter (31.5% in the 1970-71 survey) reported using "soft-drugs" (marijuana, cannabis, hashish etc.) during the preceding six months, 11% using them only once or twice. The pattern is more or less the same for sedatives, tranquillizers and amphetamines. The pattern for "hard-drugs" (LSD, opiates, heroin, and other hallucinogens) is quite different: only 2% reported having tried them. On the other hand, the level of general information on drugs was rather high (e.g., they knew the price of a "dime bag"). The largest group of drug contacts were residence friends (48% in 1969-70, up to 58% in 1970-71, reflecting increased availability).

Alcohol is obviously much more widely accepted than other drugs. While only a third reported using tobacco, 69% reported drinking once or twice a week. More than half of their consumption was in the residence halls. There was general support for lowering the drinking age to 18 years. (The legal age was lowered to 18 in Alberta in 1971).

These results agree with the consistent trend of a number of studies. For example, Pearlman (1968) surveying graduates of Brooklyn College between 1962 and 1965, found that only seven percent had some illicit drug experience. Later, Eells (1968) found that 13.7 percent of all students at Cal Tech had used marijuana and 5.5 percent had used LSD. Imperi, Kleber, and Kavie (1968) in a similar study at Yale and Wesleyan found that 20 percent at both institutions had used hallucinogenic drugs. A study completed at McGill in 1970 found 29.5 percent of the students had smoked marijuana. In 1971, Kohn and Mercer found 50 percent at York.

Although most students who have used drugs have done so only infrequently, students in general seem to be aware of the drug culture and cognitive of its attributes. That this is so is indicated by their knowledge of colloquialisms and drug sources.

Contrary to the general belief, marijuana does not seem to be a substitute for alcohol, its users tending to be multiple drug users and look upon marijuana as "somewhat safe", alcohol as "less so", and tobacco as "somewhat unsafe".

Those who use drugs without a prescription do so to "feel good" or because of curiosity. They cite "awareness" as their dominant marijuana experience and "transcendence" as their dominant LSD experience.

Most respondents advocate some kind of restriction on the availability of marijuana. Most thought that LSD should be available for research purposes only.

They would "warn" their children if they found them smoking marijuana, and seek "clinical help" for a child on LSD. They tend to view people addicted to heroin as "sick".

Mass-media was reported as having the strongest influence on their attitudes towards the use of drugs. The information thus gained tends to be used to defend arguments for or against the safety of drugs.

II. Relationships

Background: Although the sample of "hard" drug users was too small to support definite conclusions, the sample of "soft" drug users was adequate to support a number of observations. The variables "sex" and "year of studies" appear to be significant factors ($P. < .05$): significantly more men than women and more freshmen than third or fourth year students reported using drugs (cf. Eells, 1968). However, it should be noted that senior resident students are more highly selected than freshmen. The incidence of use was reported highest for the Faculty of Arts (as also found in the McGill study, 1970, and at Sir George Williams, 1969), and for Business Administration and Commerce, and lowest for Agriculture and Education in that order. Family socio-economic level was also found to be a significant factor: more drug users' fathers were in professional occupations, father's formal educational level was that of university level, and parental income was $10,000 to $25,000. These results also agree with others (Steffanhagen et al., 1971; the McGill study, 1970; Sir George Williams, 1969) in that respondents' concept of God seemed a related factor ($P. < .02$): more users than non-users were undecided about their concept of God. Greater "secularity" has also been a finding of a number of other studies on drug users (e.g. Kohn and Mercer, 1971; Milman and Anker, 1971). Sibling marijuana use was much higher for the users than the non-users ($P. < .01$, Table 1).

TABLE 1

BACKGROUND FACTORS RELATED TO DRUG USAGE

SEX	Users	Non-Users	Total
	(N=61)	(N=171)	
Male	37.7	62.3	50.5
Female	25.2	74.8	49.5
	Observed x^2 value (1 d.f.) = 4.96, P. <.05		
Year of Studies			
Freshmen	62.5	44.4	49.1
Juniors	28.6	35.2	33.5
Seniors	8.9	20.4	17.4
	Observed x^2 value (2 d.f.) = 6.43, P. <.05		
Faculty			
Agriculture	3.3	8.3	7.0*
Arts	29.5	13.6	17.8
Business Administration & Commerce	8.2	4.1	5.2
Education	13.1	24.3	21.3
Engineering	9.8	13.6	12.6
Household Economics	6.6	5.3	5.7
Medicine	8.2	10.7	10.0
Science	21.3	20.1	20.4
	Observed x^2 value (7 d.f.) = 12.92, P. <.10		
Socioeconomic Variables			
Father's Occupation?			
Professional	58.2	33.5	40.0
Proprietor	14.5	26.5	23.3
Clerical	10.9	12.3	11.9
Skilled	12.7	15.5	14.8
Semi-skilled	3.6	12.3	10.0
	Observed x^2 value (4 d.f.) = 11.91, P <.02		

* Refers to faculty percentage

Father's Education?	Users	Non-Users	Total
Under 6 years	32.8	45.2	41.9
High School	26.2	33.3	31.4
Graduate Work	9.8	7.1	7.9
1 - 3 years of University	31.1	14.3	18.8

Observed x^2 value (3 d.f.) = 9.56, P. <.03

Parent's Annual Income?			
Under $10,000	37.9	51.6	47.9
$10,000 - $25,000	56.9	39.1	43.8
Over $25,000	5.2	9.3	8.2

Observed x^2 value (2 d.f.) = 5.61, P. <.06

Financial SUPPORT for University Education:			
Parents	43.2	36.4	38.2
Job	27.7	30.2	29.6
Loan	16.1	19.3	18.5
Grant or Scholarship	12.9	14.1	13.8

Concept of God

What is your CONCEPT of GOD?			
Supreme Being	49.2	66.3	61.7
Does not Exist	1.6	6.5	5.2
Undecided	32.8	19.5	23.0
Other	16.5	7.7	10.0

Observed x^2 value (3 d.f.) = 10.97, P. <.02

Sibling Marijuana Usage

SIBLINGS taking Marijuana or Glue?			
Marijuana	19.0	7.6	10.6
Never Used Marijuana or Glue	48.3	76.6	69.0
Don't Know	32.8	15.8	20.4

Observed x^2 value (2 d.f.) = 16.05, P. <.01

Educational Aspirations:

These drug users show - an above average Grade XII Grade Point Average but scored lower in University ratings of achievement (cf. the McGill study, 1970). They reported studying fewer hours ($P. < .05$), doing more free reading, spending more time watching T.V., and dating more frequently than non-users (cf. Milman and Anker, 1971). Though the figures are not always statistically significant, drug-users seem to tend to give more weight to the importance of acquiring wider interests than scholarship as a part of university education; to be reasonably satisfied with their education at the university; but to be undecided about their future educational and career plans ($P. < .01$).

Social Attitudes: Significantly more users than non-users regard marriage as a temporary or a communal situation; consider female virginity either unimportant or undesirable; prefer women as well as men to be sexually experienced when they marry; and are sexually more active (Table 2).

Personality Characteristics: The Lister Hall student population both male and female, was found to be highly representative of the college student population in Alberta in respect of personality characteristics. The profiles for the drug-users, however, differed significantly from those of the non-users on two of the factors of the personality inventory, indicating the drug-users to be more "expedient" individually ($G-; P < .001$) and "undisciplined" socially ($Q3-; P < .05$) than the non-users. Thus, the user is characterized by a freedom from group influence that sometimes leads to antisocial acts, a refusal to be bound to rules, a disregard for social demands, inconsiderate carelessness and impulsiveness. The regular user may

TABLE 2

ACHIEVEMENT PATTERNS, SOCIAL ATTITUDES AND PERSONALITY CHARACTERISTICS

Content and Alternatives	Users	Non-Users	Total
Achievement Patterns	(N=61)	(N=171)	(N=232)
Grade XII G.P.A.:			
59 - 69	32.8	45.8	42.4
70 - 80	47.5	33.3	37.1
Over 80	19.7	20.8	20.5
Study Hours:			
1 - 5 hrs.	45.9	21.1	27.6
6 - 10 hrs.	21.3	28.1	26.3
10 - 20 hrs.	23.0	35.7	32.3
Over 20 hrs.	9.8	15.2	13.8
	Observed x^2 value (3 d.f.) = 14.03, $P. < .05$		
Number of Books READ:			
None	8.2	23.4	19.4
1 - 5	60.7	51.5	53.9
6 - 10	13.1	13.5	13.4
10 - 20	6.6	7.6	7.3
Over 20	11.5	4.1	6.0
	Observed x^2 value (4 d.f.) = 10.19, $P. < .05$		
TV Hours:			
None	9.8	22.2	19.0
1 - 5 hrs.	52.5	45.6	47.4
6 - 10 hrs.	19.7	22.2	21.6
11 - 15 hrs.	11.5	5.8	7.3
Over 16 hrs.	6.6	4.1	4.7
Dating Frequency:			
Several/week	41.0	31.0	33.6
Once/week	37.7	32.1	33.6
Once/month	13.1	19.6	17.9
Once/year	8.2	17.3	14.8
December Exam G.P.A.:			
8 & above	6.7	7.8	7.5
7	15.0	22.9	20.8
6	40.0	37.3	38.1
5	28.3	25.3	26.1
4 or less	10.0	6.6	7.5

Enter GRADUATE STUDIES?

Yes	26.2	25.1	25.4
No	18.0	39.8	34.1
Undecided	55.7	35.1	40.5

Observed x^2 value (2 d.f.) = 10.99, P. < .01

Social Attitudes

Your closest CONCEPT of marriage:

Legal contract	21.3	29.6	27.4
Religious bond	36.1	42.6	40.9
Trial marriage	16.4	5.9	8.7
Communal Living	6.6	1.8	3.0
Other	19.7	20.1	20.0

Observed x^2 value (4 d.f.) = 10.62, P. < .05

Should a woman be a VIRGIN when she marries?

Preferably	31.1	64.7	55.8
Unimportant	57.4	34.7	40.7
Preferably not	11.5	0.6	3.5

Observed x^2 value (2 d.f.) = 30.09, P. < .001

Should a man be a VIRGIN when he marries?

Preferably	21.3	42.0	36.5
Unimportant	41.0	46.2	44.8
Preferably not	37.7	11.8	18.7

Observed x^2 value (2 d.f.) = 21.57, P. < .001

Engaged (during the past six months) in SEXUAL INTERCOURSE:

Yes	45.0	20.5	26.8
No	55.0	79.5	73.2

Observed x^2 value (1 d.f.) = 12.39, P. < .001

Personality Characteristics

	Males		Females	
	Users	Non-Users	Users	Non-Users
Sober vs. Happy-Go Lucky:				
Low	18.5	47.9	14.7	11.2
Average	25.9	17.8	41.2	39.8
High	55.6	34.2	44.1	49.0
	Observed x^2 value (2 d.f.) = 7.15, P. <.05			
Expedient vs. Conscientious:				
Low	74.1	34.2	52.9	26.5
Average	22.2	38.4	23.5	35.7
High	3.7	27.4	23.5	37.8
	Observed x^2 value (2 d.f.) = 13.73, P. <.001		x^2 (2 d.f.) = 7.93, P. <.02	
Practical vs. Imaginative:				
Low	18.5	32.9	14.7	23.5
Average	40.7	37.0	26.5	39.8
High	40.7	30.1	58.8	36.7
			x^2 (2 d.f.) = 5.05, P. <.10	
Forthright vs. Shrewd:				
Low	55.6	31.5	38.2	36.7
Average	25.9	42.5	50.0	43.9
High	18.5	26.0	11.8	19.4
	Observed x^2 value (2 d.f.) = 4.88, P. <.10			
Undisciplined vs. Controlled:				
Low	66.7	37.0	70.6	46.9
Average	22.2	37.0	26.5	38.8
High	11.1	26.0	2.9	14.3
	Observed x^2 value (2 d.f.) = 7.15 , P. <.05		x^2 (2 d.f.) = 6.59, P. <.05	

also feel that he is emotionally maladjusted.

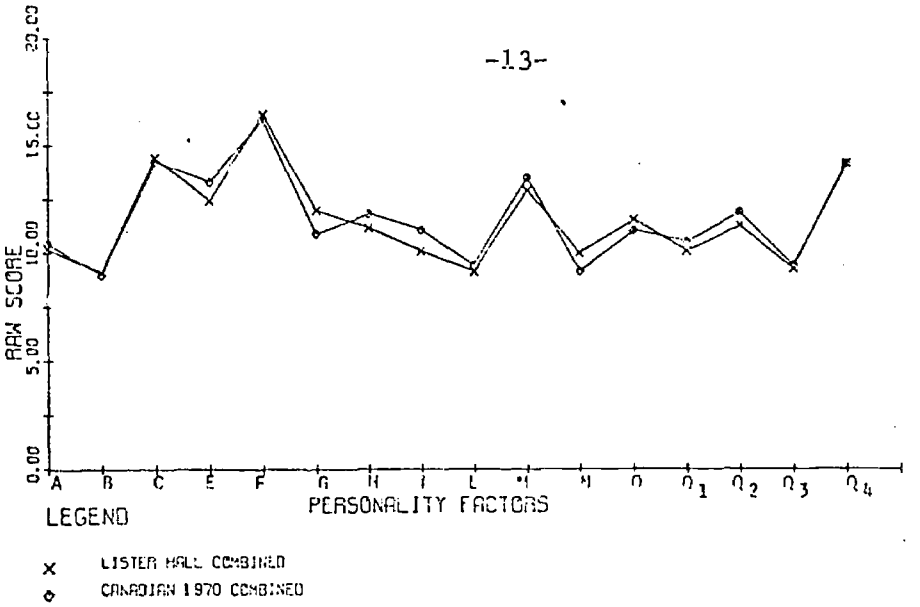
Male users indicate a happy-go-lucky, impulsive, enthusiastic attitude not displayed by female users ($F-;P < .05$). Male users have a forthright, unsophisticated, simple and spontaneous attitude toward life (Factor N). Female users tend to be imaginative, bohemian and careless of practical matters (Factor M) These findings are substantiated by comparing the reactions of the users and non-users to residence policies and regulations. Responses of drug users in this area consistently favoured a liberal, unstructural and undisciplined life in the residence.(Figure 1)

These findings on student drug-involvement are in substantial agreement with the findings of studies on student drug-involvement on other Canadian and American Campuses.

III. Predictors of Marijuana Usage

To delineate predictors of marijuana usage, 70 biographical and personality variables were selected and factor analysed using the principal component method. The factor-matrix produced 24 factors with eigenvalues greater than unity. These factors accounted for 68% of the total variance among the variables. In addition, the communalities of the variables were quite high (usually over 0.7) indicating that most of the variance of the 70 variables was accounted for by 24 factors. Factor scores for each of the 521 subjects (subjects for the two surveys were combined for this phase of the study) were calculated. The factors were then assessed as predictors of marijuana usage using the simultaneous regression analysis.

Twenty-one percent of the variance in marijuana usage was predicted. This is a relatively small amount but considering that


RAW SCORE
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5.00
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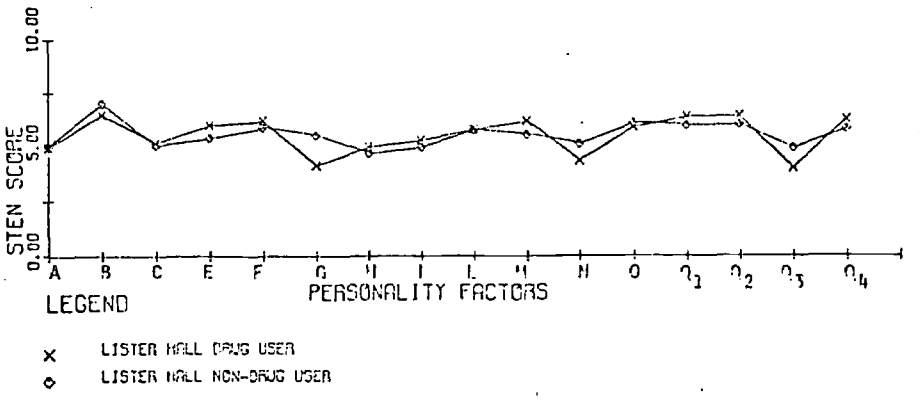
A B C E F G H I L M N O Q1 Q2 Q3 Q4
PERSONALITY FACTORS
LEGEND
LISTER HALL COMBINED
CANADIAN 1970 COMBINED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A B C E F G H I L M N O Q1 Q2 Q3 Q4
PERSONALITY FACTORS
LEGEND
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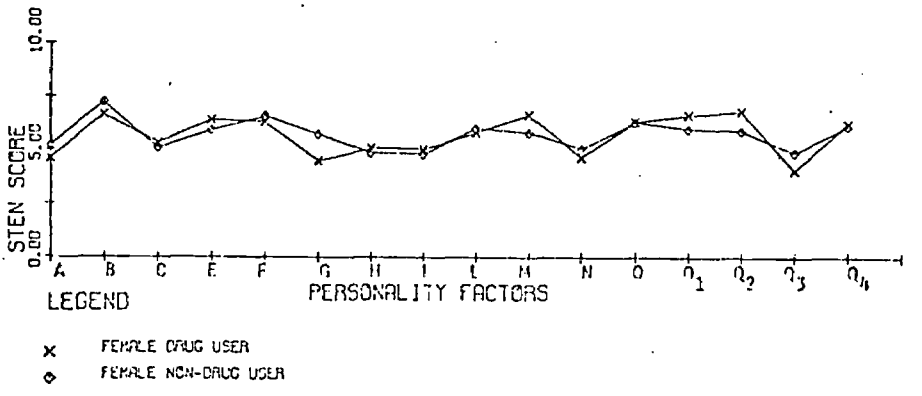
LISTER HALL NON-DRUG USER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PERSONALITY FACTORS
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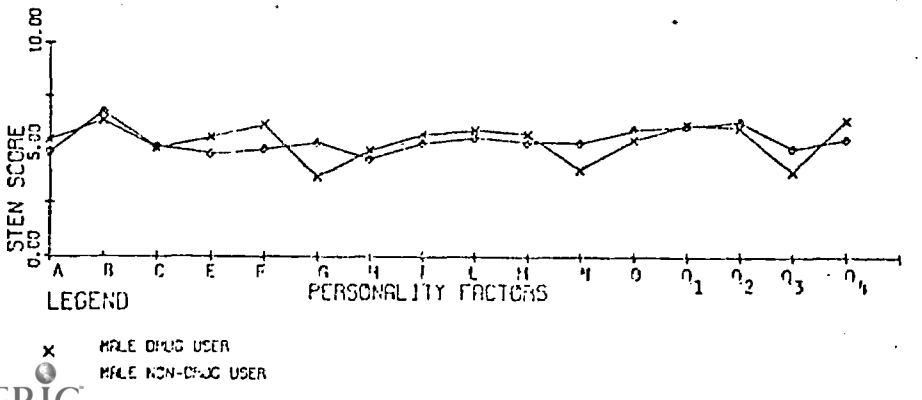
FEMALE DRUG USER
FEMALE NON-DRUG USER


STEN SCORE
10.00
5.00
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A B C E F G H I L M N O Q1 Q2 Q3 Q4
PERSONALITY FACTORS
LEGEND
MALE DRUG USER
MALE NON-DRUG USER

FIGURE 1

this battery of variables was not originally selected "ad hoc", the results are not discouraging. Four factors were found to be particularly relevant to the high drug usage; namely high "liberalism" high "secularity", low "academic responsibility" and high "vertical mobility". In terms of the original variables, these results point out that these residence drug users are less moralistic, more impersonal and alienated in their view of God, more likely to endorse the "have a good time and get by" attitude towards university education (amotivational syndrome suggesting low academic aspirations), and less likely to come from a family in which the father is semi-skilled and the mother employed. In addition, as shown in the attached table, the following factors were also found relevant: registration in non-science and non-engineering disciplines, low extroversion, low student leadership, high anxiety, high T.V. watching and free reading, and the attitude that residences are too noisy (Table 3). Thus the necessarily truncated view of the drug user resulting from these findings is that of a relatively more anxious and introverted person.

IV. Conclusion and Implications

The above findings are only suggestive and make possible only limited conclusions. Nevertheless, they point out a very important dimension on which drug users differ sharply from the non drug users, namely, the attitudinal temperamental dimension. One may, in fact, opine that these differences reveal quite distinct paradigms of belief systems of the two groups. If this is so, it would be very relevant to map such paradigms and examine their relationship to behavior patterns. The fact

TABLE 3

ANALYSIS OF VARIANCE RESULTS FOR
MARIJUANA USAGE (N=521)

Factor	F Value	Probability Level
Liberalism (variables include disavowal of male or female virginity before marriage, and more dating and sex)	32.454	<.005
Secularity (irreligious concept of God, low church attendance)	31.164	<.005
Low academic responsibility (little studying, high proportion of drinking in residence, avowal of the "have a good time" ethic)	19.161	<.005
High "vertical mobility" (mother does not work, father in professional occupation, university level education, high annual income).	12.591	<.005
Not quiet in residence	12.339	<.005
Non-Engineering faculty	9.707	<.005
Non-Science faculty	9.632	<.005
Low LSD usage *	9.179	<.005
Low extroversion (16 P.F. variables A+, E+, F+, H+, Q_2-)	8.783	<.005
Low student leadership (low student government participation, younger - age, 1st and 2nd year of studies)	8.721	<.005
High amount of TV watching or free reading	6.518	<.025
High anxiety (16 P.F. variables C-, L+, O+, Q_4+)	3.390	<.10

*The presence of this factor is highly tenuous, since too few LSD users were involved (less than 2%) in the sample .

that marijuana usage is predictable from a certain belief system suggest the efficacy of this strategy.

These findings seem to have relevant implications for the Office of Student Affairs in general, and student counselling services in particular, in pointing out that drug-usage may be one way in which more anxious, introverted, and academically less ambitious students respond to the stresses of university life. These offices can then devise steps which should be taken to alleviate some of the stressful conditions.

As pointed out earlier, the original variables used in this study were not selected "ad hoc". A study specifically addressed to the putative drug use predictors is warranted before some definite conclusions can be drawn. Moreover, in the present study, different categories of drug users, namely, experimentors and those who use drugs on occasional as well as regular basis, were all combined (since the number of subjects falling in each category was too small for any meaningful analysis) for purposes of analysis. This may have blurred the results, especially, those in the area of prediction analysis. Separate analyses of drug-users falling in different categories may lead to sharper and more illuminating findings.

This study was conducted on a typical student population, namely, resident students. Since residences are (or are at least considered to be) less congenial to the use of drugs, the findings of this study cannot be generalized to the total campus student population. A similar study addressed to the general student population is necessary before some definite and more general conclusions can be drawn.

It was not possible to investigate the causal relationship between the use of drugs and belief systems, that is, whether use of drugs inevitably leads to the changing of indoctrinated belief systems about drugs,or liberal belief systems lead to the use of drugs. Our study underscores the need of a systematic investigation in this area.

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FOOTNOTE

Section III of this paper is largely based on a study by D. Wardell (Oct., 1971) which has been recently revised and summarized, See, Wardell, D. and Mehra, N. "A note on the prediction of marijuana usage among students in a university residence", Center For Advanced Study in Theoretical Psychology, Advanced Publication Report No. 131A73, University of Alberta, Edmonton, 1973.