ORIGINAL ARTICLES

THE INCIDENCE AND NATURE OF DRUG ABUSE IN ADOLESCENCE PERSONALITY CORRELATES AND PREDICTIVE MODELS

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ABSTRACT

One thousand four hundred and eleven adolescents ages between 14 and 19 comprised the material for this study. Questionnaire technique was employed in two parts; a disguised questionnaire to identify drug abusers and a second part the HSPQ of Cattell. The data obtained were analysed statistically using the SPSS on the R 1030 computer of the Operations Research Group, Baroda.

The overall incidence of drug abuse was about 30% with highest incidence among college boys followed by school boys and college girls. Abuse of Bhang was most frequent followed by tobacco and alcohol. Age and parental income were insignificant. Based on statistical analysis of personality, predictive models have been developed enabling identification of actual and potential drug abusers and nature of drug abuse.

Key words: *Drug abuse, Adolescence, Personality correlates.*

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The abuse of drugs in adolescence can be considered an indication of the level of social and personal stress. Given the inherent dangers of drug taking, why do intelligent young people take these risks? How is it that while some drug abusers go on to become addicts, others steer clear from such influences? In short, is there a personality predisposition which leads to drug abuse? It was with the objective of finding answers to these questions that this study was conducted.

Material and Methods

One thousand four hundred and eleven adolescents (634 high school boys between the age of 14 and 19 and 777 college boys and girls between 16 and 20) during the period July 1979 to April 1980 constituted the material for the present study. The students were all given to understand that they were participating in a personality profile study of adolescents. The study was conducted in two parts. The first part intended to identify drug abusers consisted of twenty questions, four of which pertained to drug habit. The other questions which acted as distractors were questions taken from different personality tests, and also questions about respectable forms of 'drug' use, such as tea, coffee and vitamins, so that the transition from the acceptable to the taboo was as imperceptible as possible.

For purposes of this study the term 'Drug' is utilized to connote the "dependance producing drugs whose harmful consequences on individual and social life go beyond a socially or culturally acceptable level" as defined and listed in the report of the National Committee on Drug Abuse, Government of India, 1977(1). Drug abuse is employed to mean the non-medical use of any 'drug' as defined

in the WHO Technical Report Series No. 460(2).

Having identified drug abusers and an equal number of non-drug abusing controls with the help of this disguised questionnaire, both groups were administered the high school personality questionnaire of Cattell(3) as the second part of the study. The respondents were told that their personality scores would be sent to them after analysis, so each felt he had a stake in answering the questionnaires truthfully. The High School Personality Questionnaire (HSPQ) of Cattell is a personality test, well known to psychologists, which assesses the personality of the respondent in 14 dimensions.

The data gleaned from the two surveys were then analysed statistically, using the Statistical Package for Social Sciences (SPSS) on the R 1030 computer of the Operations Research Group, a Baroda based Management and Systems Consultancy Organisation.

Addiction to particular type of drug, say tobacco, was taken as the dependable variable and the 14 personality factors as independent variables. From the 14 personality factors, the computer package selected the factors which accounted to the greater extent for the variations in the dependent variable, i.e. the factor which has the greatest prediction ability in determining drug abuse and frequency. The 'F statistic' for each of the factors in the multiple regression was also calculated and compared with standard 'F tables' to determine whether the factors were significant in explaining drug abuse.

By step-wise multiple regression analysis the computer yielded statistical models into which by interpolating scores for personality factors of a given individual, it is possible to predict at the 1% level of confidence the chances that he is a drug addict, as also the type of drug he is likely to abuse. In this article is analysed the personality correlates of drug abusers in colleges.

Results

A. *Incidence and nature of drug abuse:* Results of analysis indicating statistically significant values are shown in Tables I and II.

Table I shows that there was significantly larger number of drug abusers among college boys (40.8%) than among school boys (31.3%) and among college boys than among college girls (19.6%).

Table II shows the incidence and nature of drug abuse among school and college students, which is self-explanatory.

B. *Personality correlates of drug abuse:* Drug abusers in colleges showed the following personality. They scored significantly higher on strength of self-sentiment, were more controlled, socially precise, compulsive, shy, timid, threat sensitive, of higher intelligence and given to abstract thinking.

Personality characteristics of different types of drug abuse and predictive models for different types of drug abuse, as also for the umbrella term "any addiction" have been worked out (Table III).

For example: The model for 'any addiction' in college is $= 1.28278 \pm 0.03428\ Q3 - 0.2553\ H + 0.2370\ B$.

Given the personality scores of any individual on these factors $Q3$, H and B of the HSPQ, and interpolating it in the above equation, should the score be greater than 2, it predicts drug abuse to the 1% level of confidence.

Discussion

Drug abuse is a surreptitious function and the disguised questionnaire used in

TABLE I—*Distribution of drug takers in schools and colleges (sex wise).*

	Total sample	No. of drug takers	%	S.S.
1. All schools (Boys)	634	199	31.39	H.S.
2. All colleges (Boys)	365	149	40.82	
3. All colleges (Girls)	412	81	19.66	H.S.

S.S. = Statistically significance. H.S. = Highly significant at 1% level of confidence.

TABLE II—*Nature of drug abuse in schools and colleges.*

	All schools		All colleges	
	No.	%	No.	%
Total No. of students	(634)	(100)	(777)	(100)
Per cent addicted to:				
Tobacco	68	10.73	102	13.12
Alcohol	60	9.46	52	6.69
Bhang	87	13.72	96	12.35
Patented drugs*	37	5.84	55	7.08
Ganja	3	0.47	5	0.64
Opium	2	0.32	9	1.16

*Patented drugs of stimulants and sedative groups e.g. LSD, Calmpose, Mandrax, Restin, Dexedrin.

this study, it is believed yielded a more accurate estimate of the incidence of drug abuse than a direct questionnaire would have. Another remarkable feature of this study was that the respondents were made to feel that they had a stake in answering the questionnaire truthfully. They were all promised that their responses would be kept confidential and that the results of their personality assessment would be communicated to them individually. A drawback of this disguised qustionnaire, however, is that there is a limit to the number of questions that can be asked, related to the pattern, duration and the nature of drug abuse, without betraying the primary aim. Therefore, many details on the pattern of drug abuse cannot be elicited in a study of this type. But, since the objective was more to identify drug abusers than to study details of pattern of drug abuse, the disguised questionnaire was considered suitable.

The observations on the incidence of the drug abuse are comparable with the study of Mohan *et al.* on school children in Delhi(4) and other studies(5-8,) for college students. One would have expected

TABLE III—*Predictive models indicating respective personality correlates of drug abuse in colleges.*

Drug	Predictive model	Personality correlates
Any drug	1.28278 + 0.03425 *Q3* − 0.02553 *H* + 0.2370 *B*	+ *Q3* = High strength of self sentiments, self sufficient, resourceful
		− *H* = Shy, timid, threat sensitive
		+ *B* = High intelligence, abstract thinking
Tobacco	0.96983 + 0.03845 *I* + 0.04690 *H* − 0.02498 *C*	+ *I* = Tender minded, sensitive, dependent, overprotected
		+ *H* = Adventurous, socially bold.
		− *C* = Affected by feelings, emotionally less stable, lower ego strength
Ganja	0.88247 + 0.01457 *O* + 0.1241 *F*	+ *O* = Apprehensive, self reproaching, insecure, worrying
		+ *F* = Enthusiastic, heedless, happy go lucky
Bhang	1.00205 + 0.05143 *A* − 0.03459 *Q3* + 0.03122 *J*	+ *A* = Warm hearted, outgoing, easy going, participating
		− *Q3* = Uncontrolled, lax, follows own urges, careless of social rules
		+ *J* = Internally restrained, reflective
Alcohol	0.86712 + 0.03487 *H* + 0.02647 *F*	+ *H* = Adventurous, socially bold
		+ *F* = Enthusiastic, heedless, happy go lucky
Patented drugs	No significant characteristics	
Opium	Sample too small	

A value of two or more, predicts drug abuse, at 1% level of confidence.

a lower incidence of drug abuse in a 'B' class city, such as Jabalpur when compared to that of a metropolis, such as Delhi. However, similar incidence observed in the present study could be attributed to the identification of a larger number of drug abusers brought out by the disguised questionnaire in the present study.

The National Committee on Drug Abuse in India (1977) reported that available personality tests have not provided either consistent or specific correlates of drug taking behaviour. However, both the present study as well as that of Thomas *et al.*(9) clearly contradicts this opinion.

The personality of drug abusers in this study has been so consistent that it has been possible to devise predictive models. This is apparently the first such model which predicts drug abuse at the 1% level of confidence (given the score of an individual on HSPQ). Three reasons may have contributed towards this : (*a*) the choice of the psychometric instrument used in the study (The HSPQ assesses the complete gamut of personality perhaps most comprehensively), (*b*) the very elaborate computer facility made available to this study, and finally, (*c*) that in the Indian setting, as Mohan(8) states, where abstinence still remains a cultural norm, even the use/abuse of socially tolerated drugs, such as alcohol and tobacco, especially render such individuals more easily identified on personality test or attitude scales, as compared to the west.

Volbrecht's(10) studies indicate that while the adolescent addicts showed higher self-sufficiency and lower conformity, adult addicts showed more neuroticism and autistic retreat. The adolescent addicts, Volbrecht concluded, were people in temporary revolt. The acceptance of this basic fact that adolescent drug abusers are neither basically 'bad characters' nor intrinsically 'neurotics' but simply youth in revolt has serious implications for those intent on finding a solution to the problem of adolescent drug abuse. This fact precludes the use of legislative action, for legislative action, by its definition itself, increases the attractiveness of drugs as an instrument of revolt. Helpful action will rather involve education of the youth on the dangers of drug use, a reduction of the present stresses in society, and society itself providing better ideals and values to the youth.

Besides this action on the social scale, it is hoped that the predictive models, this study has made possible, will equip the physician with further information to identify not only actual and potential drug abusers, but also suspect with reasonable accuracy the nature of possible drug abuse. Equipped with this knowledge the practicising physician, it is hoped, will find himself more competent and effective in handling drug abuse at this age. These predictive models are, however, of relevance to this region. It is believed that larger studies are required to validate these for more general use.

Detailed analysis of data on the personality of drug abusers in schools and its comparison with that of college students is at present being done.

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NOTES & NEWS

BREAST FEEDING BY WORLD HEALTH ORGANIZATION, GENEVA—1979

The brochure on breast feeding by WHO is an extremely useful guide for health worker and those concerned with maternal and child care. It deals with the natural course of breast feeding, preparation for breast feeding, nutrition of the mother and the role of the health worker. The language is simple and it is well illustrated.

The style of re-emphasizing the relevant points at the end of each chapter and to leave blank pages for notes by health workers are additional useful features of this brochure.

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