

## AN EPIDEMIOLOGICAL STUDY OF DRUG ABUSE IN URBAN POPULATION OF MADHYA PRADESH

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**ABSTRACT:** *The present epidemiological survey was carried out to estimate the prevalence and pattern of drug abuse in urban population of Madhya Pradesh because such studies were lacking from this state. In the population of 5326, we found that 38.6% were current users. In order of frequency, the drugs used were - tobacco (36.8%), alcohol (26.5%), painkillers (9.8%), cannabis (4.1%), tranquilizers (2.4%) and opium (1.6%). Among tobacco users, 52.4% were using gudakhu.*

**Key words:** *epidemiology, drug abuse, urban population.*

### INTRODUCTION

Drug abuse is prevalent throughout the world in all the cultures, perhaps, an important feature that distinguished man from animals. There is growing concern about drug abuse in India, because of the likelihood of further increase in drug abuse and substitution of more potent drugs (specially in rural areas) in future, due to unavoidable rapid industrialization and urbanization. In India most of the workers have studied drug abuse mainly in specific populations eg. students (Dubey et al. 1975, Mohan et al. 1977) labourers (Gupta et al. 1987), psychiatric patients (Trivedi and Sethi, 1978), psychiatric hospitals (Mustaq et al. 1993) and child labourers (Bansal and Banerjee, 1993). However, considering the vastness of Indian subcontinent, only limited number of general population surveys have been carried out here.

In Punjab, Deb and Jindal (1974) surveyed 4 villages and observed that 78.23% of the population were using drugs. Lala and Singh (1979) reported prevalence rate of 29.98% in the rural population of the same state. From northern India (Uttar Pradesh) Dube (1972) reported prevalence rate of 22.8% at Agra. From the same state Thacore (1972) and Sethi and Trivedi (1979) reported prevalence rate of 18.55 and the 21.4% respectively. Lower rates were found in the eastern state of West Bengal by Nandi et al. (1975) and Elnagar et al. (1971) which was 0.95% and 13%

respectively. Studies carried out so far in India differ in defining case selection criteria, period of survey, and type of population surveyed. Considering these facts and lack of such studies from the state of Madhya Pradesh, the present study was carried out.

### MATERIAL AND METHODS

The state of Madhya Pradesh comprises of 45 districts and the Eastern part of the state is called Chattisgarh area (Bastar, Bilaspur, Raipur, Rajgarh, Sarguja, Durg and Rajnandgaon districts). This area has both tribal and non tribal population. However, due to rapid industrialization in the last decade, it is proceeding toward becoming a cosmopolitan area. Raipur, so-called capital of Chattisgarh area is spread over 55.05 sq. km. There were 13 foreign liquor shops, 13 country liquor shops, and 7 Bhang shops. Alcohol is sold in bars, dhabas, restuarants and in the form of ayurvedic medicinal preparations. Bhang is also available in provision stores in tablet form (Madhumunakka). Gudakhu, a paste form of tobacco (containing mainly powdered tobacco and molasses), is very commonly used in this area.

Survey started in June 1992 and was completed in June 1993, two stage sampling technique was used. In the first stage information about the distribution of wards and household numbers were obtained from the Municipal Cor-

poration. Out of 44 wards, 5 wards were randomly selected and enumeration was completed in these selected wards. Since the second investigator hails from the local population, not much difficulty was encountered in survey work. In the second stage, every 10th household was surveyed and included in the study. Among 1095 houses so selected, heads of the family were interviewed first and then other members of the family aged 10 years and above were interviewed in detail individually. A total of 5326 cases were interviewed for the purpose of present work.

### TOOLS USED

(a) Household Schedule : This schedule was used to record baseline data of the families, age, sex, marital status, education and occupation of every member of the family.

(b) Drug abuse proforma : A semistructured proforma on the basic core data for epidemiological studies of non medical drug use developed by WHO (1980) was used to find out details of drugs used.

### RESULTS

At the time of the study Raipur city had a population of 3.0 lacs. Out of these, 1097 families of 5236 persons were interviewed.

#### PREVALENCE OF DRUG ABUSE PROFILE :

Table 1 shows that out of 5326 cases 2056 persons had used one or more drugs in their life (ever users). This prevalence rate for ever users was 387 per 1000 population. Ninety - four (1.6%) users had recovered from use of drug (past users) and 1962 were taking drugs or had taken such substances within the past one year (current users). Hence prevalence rate for current users was 368 per 1000 Population. Rest 3260 (66.4%) were "never users". Thus the study recorded a fall of 9 per 1000 in the prevalence rate. The study also recorded 619 per 1000 population of never users, the ratio of ever users to never users being approximately 5:8.

**TABLE 1 : PREVALENCE RATES PROFILE**  
(Surveyed population = 5326)

Drug Status	N	%	Rate per 1000 population
Ever users	2056	38.7	387
Current users	1962	36.9	369
Never users	3270	61.9	619

### PATTERN OF DRUG ABUSE

In the studied population respondents were using tobacco, alcohol, cannabis, opium, tranquilizers, and painkillers. Most commonly used drug was tobacco (36.8%), followed by alcohol (26.5%), whereas cannabis (4.1%), opium (1.6%), tranquilizers (2.4%) and painkillers (9.8%) were less commonly abused.

**TABLE 2 : PATTERN OF DRUG ABUSE IN RESPONDENTS :**  
N=5326

Drugs used	Never Users		Recovered Users		Current Users		Dependent Users	
	Nos.	%	Nos	%	Nos	%	Nos	%
Alcohol	3801	71.4	114	2.1	1411	26.5	1097	20.5
Cannabis	5073	95.2	35	0.7	218	4.1	117	2.1
Opium	5215	97.9	26	0.5	85	1.6	61	1.1
Tranquilizers	5152	96.7	47	0.9	127	2.4	12	0.2
Tobacco	3363	63.1	61	1.1	1992	36.8	1287	24.1
Pain Killers	4770	89.6	36	0.6	520	9.8	96	1.8

Pattern of abuse of one drug is different from another as it is evident from table 2. Out of the total surveyed population 26.5% were current users of alcohol, 20.5% were dependent users, 2.1% past users and 71.4% were never users of alcohol. On the other hand 36.8% were current users of tobacco and two thirds of these were dependent users (24.1%). 52.4% of tobacco users were using gudakhu & rest were using bidi, or cigarette. Cannabis and opium were infrequently used, that is, 4.1% and 1.6%

respectively and dependence rates were 2.1% and 1.1% respectively. It indicates that most opium users were dependent users. Use of painkillers (9.8%) was four times more common as compared to tranquilisers (2.4%).

**SOCIO-DEMOGRAPHIC VARIABLES :**

In the present study the important factors such as age, sex, marital status, religion, education, occupation and income were studied.

**(a) AGE :**

Maximum number of abusers were found in the age group of 20-29 years and next group in order of frequency was 30-39 years. After 40, drug abuse decreases.

**(B) SEX :**

**TABLE-3 : SEX DISTRIBUTION OF CURRENT VERSUS NEVER USERS :**

Sex	Current		Users	
	Nos	%	Nos	%
Male	1748	89.1	1036	31.6
Female	213	10.9	2234	68.4

$\chi^2 = 0.5570$ ,  $\chi^2 = 1626.2494$ , d.f. = 1;  $p < 0.01$

Most of the abusers were males as compared to females and the difference is statistically highly significant.

**(C) MARITAL STATUS :**

**TABLE-4 : MARITAL STATUS OF CURRENT VERSUS NEVER USERS :**

Marital	Current		Users	
	Nos	%	Nos	%
Married	1442	73.5	2182	66.7
Never	520	26.5	1088	33.3

$\chi^2 = 0.3240$ ,  $\chi^2 = 125.00$ , d.f. = 1;  $p < 0.01$

Above table reveals that married were more commonly abusing drug as compared to never

married. The difference in marital status between abusers and never users is statistically significant.

**(d) EDUCATION :**

There occurs a steep increase in drug abuse as literacy rate increases to higher secondary, rate decreases as person attains higher educational status - graduation, post graduation and above. Statistically, highly significant difference in the education between current users and never users have been observed.

**(e) OCCUPATION :**

**Table - 5 : OCCUPATION OF CURRENT VERSUS NEVER USERS :**

Occupation	Current		Users	
	Nos	%	Nos	%
Business	652	33.2	1013	30.9
Govt. Servant	606	30.9	1126	34.4
Skilled Worker	93	4.8	172	5.2
Unskilled Worker	301	15.3	362	11.1
Farming	4	0.2	7	0.3
Students	91	4.6	218	6.6
Household Work	103	5.2	156	4.8
Unemployed	112	5.8	216	6.7

$\chi^2 = 1588$ , d.f. = 5;  $p < 0.01$

Maximum number abusers were businessmen, followed by government servants, unskilled labourer and lowest were farmers. Occupation is a statistically significant variable between abusers and never users.

**(f) INCOME :**

**TABLE-6 : PER CAPITA INCOME OF CURRENT VERSUS NEVER USERS :**

Per Capita Income Rs./ month	Current		Users	
	Nos.	%	Nos	%
501-2000	664	33.8	1129	34.2
2001-4000	919	46.8	1426	43.6
4001 & above	379	19.4	725	22.2

According to per capita income, one third (33.8%) had an income between Rs.501 to 2000 per month. 46.8% between Rs.2001 to 4000 per month and rest (19.4%) Rs. 4001 & above.

**REASONS FOR STARTING DRUG :**

A vast majority of alcohol users (62.3%) started taking it for social reasons to be sociable or for fun or to get rid of fatigue and tiredness. On the other hand, in one third of the cases cannabis was started to enhance sexual activity, one third out of curiosity (29.8%) and the rest on persuasion from addicts. Opium was started mainly (50.6%) to be sociable and from motivation by addicts (35.3%). Majority of tranquilizer users started due to psychological stress (71.7%) or as a painkiller to get rid of physical distress (59.2%). Tobacco was started to have more social interaction (64.5%) and out of curiosity (30.8%).

**TABLE - 7 : INITIATION TO DRUG :  
SOURCE OF INTRODUCTION :**

REASON	Alcohol N=1411	Cannabis N=218	Opium N=85	Tranqui lizers N=127	Tobacco N=1902	Pain Killer N=520
Curiosity	79 (5.6%)	65 (29.8%)	12 (14.1%)	3 (2.4%)	586 (30.8%)	---
To be Sociable or for fun	878 (62.2%)	24 (11.0%)	43 (50.6%)	2 (1.6%)	228 (64.5%)	---
To enhance sexual activity	---	67 (30.8%)	---	---	---	---
Fatigue & physical illness	337 (23.9%)	---	---	9 (7.0%)	---	308 (59.2%)
Psycholo gical stress	117 (8.3%)	---	---	91 (71.1%)	---	126 (24.2%)
Persuasion of other	---	62 (28.4%)	30 (35.3%)	22 (17.3%)	88 (4.7%)	86 (16.6%)

**SOURCE OF INTRODUCTION :**

Overall friends were the main source of introduction in current users (74.4%). Friends were blamed for introduction in 93.3% alcoholics, 61.5% cannabis users, 57.6% opium users and 68.4% tobacco users. Second important source were druggists and pharmacists who were responsible for initiation mainly to tranquilizers (52.0) and pain killers (67.9%). Doctors were responsible in a small number of cases (3.8%) for introduction to some group of drugs. Dependent users (8%) were main source of introduction of cannabis (38.5%) and opium (31.8%).

**TABLE - 8 : SOURCE OF INTRODUCTION**

SOURCES	Alcohol N=1411	Cannabis N=218	Opium N=85	Tranqui lizers N=127	Tobacco N=1902	Pain Killer N=520
friends	1317 (93.3%)	134 (61.5%)	49 (57.6%)	12 (9.4%)	1301 (68.4%)	28 (5.4%)
families	39 (2.8%)	---	9 (10.6%)	---	344 (18.1%)	2 (0.4%)
Dependent Users	55 (3.9%)	84 (38.5%)	27 (31.8%)	14 (11.0%)	257 (13.5%)	21 (4.0%)
Doctors	---	---	---	35 (27.6%)	---	116 (22.3%)
Pharmacists and druggists	---	---	---	66 (52.0%)	---	353 (67.9%)

**DISCUSSION**

In the present study, we have presented our findings to show the prevalence and pattern of drug abuse in the urban population of Madhya Pradesh. This is the largest state of India but general population studies were lacking.

Out of 5326 persons surveyed, 2056 (38.7%) were ever users giving prevalence rate of 387 per 1000 for ever users. Out of 2056 ever users 94 stopped taking drugs leaving a total of 1962

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cases who were taking drugs for last one year, giving one year period prevalence of 387 per 1000 population for current users. Results of the studies in urban population by Dube and Handa (1970), Thacore (1972) and Verma et al (1977) reveal prevalence rates of 228, 185 and 190 per 1000 population respectively. Compared to these studies prevalence rate in the present study is much higher. The difference in the figures could be because of socio-cultural variation of population at Raipur and other cities. Raipur city is fast changing from semi-tribal to an industrialized city and people have migrated in from different states. Secondly workers at other centers have not included tobacco as drug of abuse. Thirdly, there is one to two decade difference in the time at which the studies were carried out.

Drug use in this population apparently starts at an early age and the youngest person found using drug was 10 years old. The percentage of drug users increased up to the age of 39 years, thereafter it declines.

The most vulnerable age group are those between 20-29 years because they face stresses of starting a career, marriage and bringing up children. Same pattern had been found in western as well as in Indian studies (Lal and Singh, 1979).

Most of the abusers were males and only 10.9% were females. Gender is, therefore, an important factor in drug taking behavior. Married were more susceptible for drug abuse as compared to unmarried. This may be explained by the fact that number of persons using drugs increase with each decade, and as they grow older, they get married and after marriage they are exposed to more social pressures.

If we compare rate of drug abuse in four groups, illiterate, literate up to matriculation, higher secondary, graduates and post graduates, we find a definite pattern of drug abuse. As literacy rate increases abuse rate also increases and highest rate was in the third group. It may be explained on the basis that illiterate and lower socio-economic groups have less purchasing power whereas low rate in higher educated persons may be due to

more awareness of the harmful effects and inhibitions. Businessmen and the service class population carry high risk of drug abuse compared to other occupations. Perhaps persons in these groups need to maintain social relations and drugs act as a media for interaction. With the increase of income drug abuse first increases up to an income of Rs.4000 per month and then it decreases. It indicates that with increase of income purchasing power also increases and in the highest income group drug abuse decreases.

In this city due to rapid industrialization large number of people have come from neighboring states in search of work. Drugs act as a medium for social interaction for them. Most of the abusers start taking drugs (alcohol, opium and tobacco) to have more social interaction, in other words, to be sociable. These observations are in contrast to the reason for initiation seen in other studies. Verma et al (1977), Dube et al (1977), and National Committee on Drug Addiction in India (1977) have observed that in the urban population curiosity is an important factor. In contrast studies in rural population revealed that desire to overcome fatigue and boredom were the main reasons for initiation for drug intake (Lal and Singh 1979, Sethi and Trivedi 1979). In the present study cannabis was started mainly to enhance sexual activity, as tranquilizer to get rid of psychological stress and as painkillers to get relief from physical over work.

Although we have used internationally accepted criteria given by WHO for screening drug abuse in general population but accuracy of the data obtained could be questioned in rural areas. However, it does provide some definite information.

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