

# SEQUENTIAL PATTERN OF NON-MEDICAL DRUG USE IN THE DRUG CAREER OF OPIATE DEPENDENTS IN NAGPUR, INDIA

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**Abstract.** A study was carried out in a group of opiate addicts who reported to various centers in Nagpur city, India, to know the sequential pattern of nonmedical drug use in the drug career of opiate dependents in Nagpur. The mean age of the study group was 28.2 years, the majority were males, educated up to 10th standard, employed in various occupations like petty business, vehicle driving, etc, with an average monthly income of Rs. 316. The average number of drugs ever used per person was  $3.7 \pm 1.2$ , those recently used was  $2.6 \pm 0.9$  and currently used was  $2.2 \pm 0.6$ . The study group experienced 13 drug types in their addict careers. Beedi\cigarette was the first drug abused by the majority. Drug careers starting with beedi\cigarette, progressing to alcohol and then to cannabis and finally to heroin were observed in a majority of subjects. There appeared to be a shift from multidrug use to the singular combination of heroin and beedi\cigarette currently. Use of all other drugs declined in favor of heroin as the career progressed. The study indicates that preventive programs should be directed at reducing the use of initial drugs like beedi\cigarette and alcohol and also reducing the social acceptability of these drugs as measure for preventing progression to hard drugs like heroin.

## INTRODUCTION

The natural history of development of drug career differs from place to place depending upon the interplay of various sociocultural factors. It is essential to know the sequential steps leading to development of opiate addiction, from the point of view of prevention and control of opiate addiction in a given geographical area.

Many studies (Venkoba Rao *et al*, 1978; Dembo and Shern, 1982; Robins, 1980; Whitehead, 1976) described the sequential pattern of drug use in different settings and the theories to explain the factors responsible for the sequential pattern (Dembo *et al*, 1979; Kandel, 1980; Nace and Meyers, 1975).

Kandel (1980) proposed the theory of four progressive stages in drug dependence. Dembo *et al* (1979) suggested that cannabis was the usual stepping stone on the way to hard drugs. Nace and Meyers (1975) refuted the simplistic theory and stressed the role of environmental and social factors in drug use patterns. Various drugs like tobacco (Venkoba Rao *et al*, 1978), alcohol (Kandel, 1980; Robins, 1980), cannabis have been found to be the first drug to be abused. A WHO multicentric

study also pointed towards the choice of these drugs as the first drug of abuse (Hughes *et al*, 1980). As the sequential patterns depend on sociocultural factors and there were no documented studies from this area of India, it was decided to study and document the pattern of opiate abuse and sequential use of various drugs by these addicts.

## MATERIALS AND METHODS

The present study was carried out in Nagpur in the state of Maharashtra. The city with over 2 million population is situated at the heart of India and represents a traditional conservative society. The study group involved addicts reporting to the Government Medical College, the drug de-addiction center of the Mental Hospital and the clinics of consultant psychiatrists in the city. The persons reporting with or admitted for the use of opiates on a continuous and repetitive basis, during the study period of one year from 1st March 1988, were registered for the study.

The standardized instrument designed by WHO was modified to suit local needs and was used to interview the subjects after pilot testing. The history of ever use, recent use (in past 12 months before interview) and current use (in past 30 days

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before interview), sequence of drug use, age at first use, duration of drug use, first drug ever used in life, continuation or discontinuation of drugs during the drug career, was asked to each subject and cross-verified with family members and/or friends accompanying the addict.

In the study period, a total of 84 opiate dependents (81 primarily abusing heroin and 3 abusing pentazocine) were registered and interviewed. The mean age of the study group was  $28.2 \pm 5.9$  (SD) years. The majority (97.6%) were males, educated (44%) up to 10th standard, married (52.4%), employed (77.4%) in various occupations like petty business, vehicle driving, etc. The group had an average per capita income of Rs. 316.82 per

month with a range of Rs 50-1,500 per month. The religious pattern of the group was similar to that of the general community with Hindus (75%), followed by Muslims (15.5%) and Christians (8.3%).

## RESULTS

Table 1 shows the drug use pattern of the study group. The commonest drugs used ever, recently or currently were beedi/cigarette and heroin. Ganja, charas and bhang are forms of the cannabis group of drugs. The average number of drugs ever used per person was  $3.7 \pm 1.2$ , that recently used was  $2.6 \pm 0.9$  and currently used was  $2.2 \pm 0.6$ . There was

Table 1  
Drug use patterns.

Drugs	Ever use	Recent use	Current use
Beedi\Cigarette	83 (98.8)	83 (98.8)	82 (97.6)
Heroin	81 (96.4)	81 (96.4)	79 (94.1)*
Alcohol	58 (69.1)	18 (21.4)	7 (8.3)
Ganja	46 (54.8)	16 (19.1)	8 (9.5)
Charas	22 (26.2)	8 (9.5)	3 (3.6)
Opium raw	5 (6.0)	4 (4.8)	1 (1.2)
Bhang	4 (4.8)	2 (2.4)	0 (0.0)
Diazepam	3 (3.6)	3 (3.6)	2 (2.4)
Pentazocine	3 (3.6)	3 (3.6)	3 (3.6)
Morphine	2 (2.4)	1 (1.2)	0 (0.0)
LSD	1 (1.2)	0 (0.0)	0 (0.0)
Amphetamine	1 (1.2)	0 (0.0)	0 (0.0)
Mandrex	1 (1.2)	0 (0.0)	0 (0.0)

(Figures in parentheses showed percentages)

\* 2 persons under treatment hence no use in last 30 days.

Table 2  
The first drug used (n = 84).

Drug	Frequency	%
Beedi\cigarette	62	73.8
Alcohol	16	19.0
Bhang	2	2.4
Ganja\charas	2	2.4
Pentazocine	1	1.2
Opium	1	1.2

gradual decrease in number of drugs used from ever to current period.

Table 2 shows the first drug experienced by each subject in his lifetime. Whereas beedi/cigarette was the commonest first drug experienced by the majority, nobody experienced heroin as the first drug. One out of three pentazocine abusers started with pentazocine as the first drug.

The mean age at the first use of drug showed the sequence with beedi/cigarette (19.1 years), alcohol (19.7 years), ganja (20.8 years), charas (20.9 years)

and heroin (24.7 years). There was a gradual increase in mean age at first use from beedi to heroin.

The first drug of abuse in the lifetime and the mean age at first drug abuse suggested the occurrence of sequential patterns of drug use in an addict's career. The drug career usually started with beedi/cigarette, progressed to alcohol and then to cannabis and finally to heroin in 51.2% subjects. In 38% subjects, the career progressed directly to heroin from alcohol and beedi/cigarette without cannabis use. In a minority (4.8%) of subjects, the career started with cannabis and then progressed to heroin through beedi/cigarette and alcohol.

The mean duration of dependence on heroin was  $3.3 \pm 2.4$  years with 75% subjects dependent on heroin since one to four years. The route of administration of heroin used by the group was the foil inhalation method associated with simultaneous, alternate use of beedi/cigarette.

The group had used 13 drug types ever in their lifetime, 10 drug types recently and currently only 8 drug types were being used. There appeared to be a shift from multi-drug use ever in the life to the singular combination of heroin + beedi/cigarette currently. This polarization is evident from Table 3.

The use of all other drugs than the combination of heroin and beedi/cigarette declined. As evident from Table 1, from ever use to recent use alcohol was discontinued in 68.9%, ganja in 65.2% and charas in 63.6% subjects. When viewing from recent use to current use, alcohol was discontinued by 61.1% subjects, ganja by 50% and charas by 86.4%. Pentazocine use did not decline as the drug career progressed.

Table 3  
Concurrent use of drugs.

Number of drugs	Ever	Recent	Current
One	1 (1.2)	1 (1.2)	2 (2.4)
Two	13 (15.5)	52 (61.9)	67 (80.7)
Three	21 (25.0)	15 (17.9)	7 (8.4)
Four	30 (35.7)	13 (15.5)	7 (8.4)
Five	17 (20.2)	2 (2.4)	0 (0.0)
Six or more	2 (2.4)	1 (1.2)	0 (0.0)

## DISCUSSION

In our study, the opiate dependents as a group experienced thirteen drug types in their drug career. The risk of initiation of the drug career was with beedi/cigarette in the majority of cases and with alcohol to some extent. Nobody started with heroin as the first drug. This might be due to easy availability and less social restrictions on cigarette and alcohol compared to heroin. Pentazocine dependents started with pentazocine as the first drug and remained addicted to it throughout their drug careers. This might be due to the fact that these subjects were introduced to pentazocine for treatment of painful medical disorders and were isolated addicts with no influence of peer group or addict group.

The mean age at first use of drugs increased from beedi/cigarette, alcohol and cannabis to opiates. This was in accordance with the progression of drug career starting with beedi/cigarette, progressing through alcohol and cannabis to opiates. This finding corresponds well with theories postulated in the literature. While Kandel (1980) postulated four stages from beer/wine, cigarette/hard liquor, marijuana to hard drugs, Venkoba Rao *et al* (1978) described the drug career starting with alcohol or tobacco and through cannabis and ending with opiates. The findings of the present study agreed well with those of Venkoba Rao *et al* (1978). This might be due to similar sociocultural patterns prevalent in the two study groups. This orderly sequential pattern might be due to factors such as easy availability, lower cost, less social restrictions for initial drugs and more opportunities for risk initiation due to modern life style and peer groups for progression to heroin.

It could also be seen from the patterns of concurrent use of drugs that subjects who were abusing four or more drugs, stabilized on the singular combination of heroin and beedi/cigarette. This polarization from poly drug use to singular combination drug use might be due to the addictive potential of heroin, the increasing cost of heroin, health and family problems faced by the addicts.

It was found that the drugs like alcohol, ganja, charas and minor tranquillizers were discontinued as a subject got hooked on heroin. This phenomenon assumes importance because the addicting potential and the pleasure effects of heroin outnumber the effects of other drugs leading to their dis-

continuation. The fact that the use of beedi/cigarette was not ameliorated in most of the subjects from initiation to time of interview, could be explained by the symbiosis of heroin and beedi/cigarette in the method of foil inhalation which required alternate use of beedi/cigarette to mitigate the bitter taste of heroin used in form of brown sugar.

Thus it can be inferred that the study group had orderly progression in their drug career with the shift from poly drug use to singular drug use as they stabilized on heroin. This sequential pattern indicated the risk drug, and the risk age of initiation, which has practical implications from a public health perspective. If we know the sequence of progression, the appropriate preventive interventions could be applied at proper stages in the drug career.

In India, particularly, it can be argued that if we want to control opiate dependence, we need to implement the program for prevention and control of beedi/cigarette use. Appropriate health education strategies should give importance to risk drugs like beedi/cigarette and alcohol. A program should be planned to decrease the social acceptability of these drugs.

Where this study suggests a sequential pattern of drug use in opiate addict's career, it suffers from two major limitations: (1) only reported opiate dependents were used as study subjects, so the findings cannot be extrapolated to the general population; (2) the cross-sectional study design itself may be inadequate to explain all the factors. Nonetheless, the study underscores the risk of initiation and sequential patterns of non-medical drug use, pertinent from view point of prevention and control of opiate dependence in India.

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