

ALIENATION, SENSATION SEEKING AND MULTIPHASIC PERSONALITY QUESTIONNAIRE PROFILE IN MEN BEING TREATED FOR ALCOHOL AND/OR OPIOID DEPENDENCE

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ABSTRACT

Two hundred and thirty men, being treated for ICD-10 diagnosed dependence on alcohol, opioids or both, were studied 2-4 weeks after the last use of alcohol or opioids. Alienation Scale, Sensation Seeking Scale and Multiphasic Personality Questionnaire (MPQ), and selected sociodemographic and family history data were studied. All three groups showed high alienation (more in opioid cases), high sensation seeking (more in alcohol cases, more for boredom susceptibility), and a disturbed MPQ profile. The dual dependence group was similar to opioid group for age, but closer to alcohol group in terms of personality profile. Only alcohol cases showed a significantly positive correlation between alienation and sensation seeking- in terms of total scale, and boredom susceptibility and disinhibition subscales only. Thus, substance specificity was not reflected prominently in the inter-relationships between alienation, sensation seeking and MPQ scores, and sociodemographic variables.

Key Words: Substance dependence, personality, alienation, sensation seeking, MPQ, MMPI

The search for the 'addictive' personality has been impelled by its important implications for the understanding of development and management of substance abuse. This search has led to study of personality variables like alienation (Basu et al., 1992), sensation seeking (Kosten et al., 1994), and Minnesota Multiphasic personality Inventory (MMPI) (Ladd, 1994). As potential personality markers in substance abusers, these variables may explain substance abuse and need interventions to promote abstinence.

Alienation is a psychological construct comprising the feeling of powerlessness, meaninglessness, normlessness, isolation and self-estrangement (Seeman, 1959). It has been

linked to deviant behaviors including substance abuse (Basu et al., 1992; Blane et al., 1968; Hornquist and Akerlind, 1987; Penning and Barnes, 1982; Smith and Fogg, 1975).

Sensation seeking is a psychological construct based on the theory of optimum level of arousal which postulates that every individual has a preferred level of stimulation required for reaching states of arousal that maximize affective, cognitive and motor functioning. It has been defined as 'the need for varied, novel and complex sensations and experiences and, the willingness to take physical and social risks for the sake of such experiences' (Zuckerman, 1979). High sensation seeking has been linked to substance abuse

(Jaffe and Archer, 1987; Kosten et al., 1994; Segal et al., 1980).

MMPI is a comprehensive clinical tool for personality assessment that has shown broad based psychopathology in substance abusers (Craig, 1982; Ladd, 1994).

The existing research on these variables is based on the study of only one or two variables in a homogeneous or a heterogeneous substance abuse group, rather than on the study of all the three variables across more than one substance specific group. For example, at our center opioid dependent subjects were reported to show high sensation seeking as well as high alienation (Basu et al., 1995). Thus, it remains to be seen if these personality variables have any substance specificity or specific interrelationship in substance abusers. Also, the available research is almost all from the western countries and there is paucity of similar data from the non-western cultures.

Prompted by these considerations, the present study aimed at finding the substance specificity of and the interrelationships between alienation, sensation seeking and MMPI-specific personality aspects across the subjects dependent on alcohol, opioids or both, who were being treated at a de-addiction center.

MATERIAL AND METHOD

The subjects were men undergoing treatment for substance dependence at the Drug De-addiction and Treatment Center, Department of Psychiatry, Postgraduate Institute of Medical Education & Research, Chandigarh. Substance dependence was diagnosed according to the International Classification of Diseases, 10th Revision (World Health Organization, 1992). The subjects who had a comorbid psychiatric diagnosis other than personality disorder, or a physical illness causing cognitive dysfunction or significant distress were excluded from the study. Dependence on tobacco was not taken into account. The sample of 230 men included subjects with alcohol dependence (ALCOHOL group, N=103), opioid dependence (OPIOID

group, N=72), and concurrent alcohol and opioid dependence (MIXED group, N=55).

The assessments were made at the end of the detoxification phase, usually towards the end of third week or in the fourth week of abstinence. At the time of the assessment, the subjects were free of withdrawal symptoms except insomnia and were on benzodiazepines equivalent of <5mg of diazepam per day. The required data were obtained from the patients, one or more family members living with the patients, and the case notes.

INSTRUMENTS

Alienation scale. This scale was developed in India by Reddy (1973) using the multidimensional framework for alienation given by Seeman (1959). It is a Likert type scale with 14 items rated from 0 to 4, a higher score indicating higher alienation. The scale has a test retest reliability coefficient of 0.82. The concurrent validity coefficient with Scale for Anomie (Srole, 1956), reported at 0.43, is statistically significant (the relatively lower value is explained by the Scale for Anomie covering only one of the five dimensions of alienation envisaged in Seeman's multidimensional framework). The scale has been used in earlier research in India (Aggarwal et al., 1980; Basu et al., 1992; Basu et al., 1995).

Sensation seeking scale. An Indian adaptation (Basu et al., 1993) of the Sensation Seeking Scale-Form V (Zuckerman et al., 1978) was used. It is a forced choice inventory where each item has two statements indicating a different level of sensation seeking. Besides a Total Scale Score, 10 items each provide 4 subscales: Boredom Susceptibility, Disinhibition, Thrill and Adventure Seeking, and Experience Seeking. The scale has been used in earlier research at our center (Basu et al., 1993; Basu et al., 1995; De, 1996).

The normative data for these scales was generated at our center from 104 healthy males who were aged 18-35 years and educated for more than 10 years, and did not fulfill the DSM-III-R criteria (American Psychiatric Association, 1987) for substance abuse or dependence (Basu et al., 1992, 1995) (Table 2).

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TABLE 1
SAMPLE CHARACTERISTICS OF PATIENT GROUPS

CHARACTERISTIC	ALCOHOL N=103	OPIOID N=72	MIXED N=55
AGE in years			
15-24	5	20	13
25-34	38	40	28
35-44	46	7	11
45-60	14	5	3
	$X^2 = 42.67, DF=6, p<0.0001$		
EDUCATION			
Nil	7	11	3
School	54	40	32
College	12	11	8
University	30	10	12
	$X^2 = 9.48, DF=6, p<0.01$		
MARITAL STATUS			
Married	86	38	22
Unmarried	13	32	28
Others	4	2	5
	$X^2 = 37.38, DF=4, p<0.0001$		
OCCUPATION			
Professional	9	8	6
Skilled	31	17	7
Unskilled	36	25	19
Student	19	13	7
Unemployed	8	9	16
	$X^2 = 17.21, DF=8, p<0.0280$		
LOCALITY			
Rural	29	21	11
Urban	74	51	44
	$X^2 = 1.60, DF=2, p<0.4493$		
FAMILY HISTORY			
Nil	21	16	14
Substance abuse	42	25	18
Schizophrenia	12	13	3
Affective Disorders	28	18	20
	$X^2 = 6.85, DF=6, p<0.3353$		

Multiphasic personality questionnaire (MPQ). Derived from the Minnesota Multiphasic Personality Inventory (Hathaway and McKinley, 1955), it was developed and validated in India by Murthy (1970). It is a 100-item forced choice true-false inventory. It taps personality profile in terms of Anxiety, Depression, Mania, Paranoia, Schizophrenia, Hysteria, Psychopathic Deviance,

K(lie) and Repressor-Sensitizer scales. The cut-off norms provided for the general population are in the form of cut-off scores and not as mean \pm sd scores (Table 2). The scale has been used in earlier research in India (De, 1996)

The three groups were compared against the normative data and with each other using X^2 test, student's 't' test, one-way analysis of variance (ANOVA) and Scheffe's test (Scheffe, 1957). Multiple discriminant analysis was carried out to assess the contribution of various variables to predictability of the correct group assignment.

RESULTS

DEMOGRAPHIC PROFILE

The alcohol, opioid and mixed groups had age of (mean \pm sd) 37.12 \pm 7.78, 29.51 \pm 9.74 and 29.40 \pm 8.36 years respectively and education for (mean \pm sd) 9.27 \pm 4.19, 8.37 \pm 4.59 and 9.54 \pm 3.87 years respectively. Compared to the opioid and mixed groups, the alcohol group was older and more often married ($p<0.0001$), better educated ($p<0.01$) and, more often and better employed ($p<0.03$). Compared to the mixed group, the opioid group was somewhat younger, more often married, less educated but more often employed. The three groups were similar for rural/urban residence and the family history of psychiatric illness (Table 1).

PERSONALITY PROFILE

Alienation scale. Compared to the normative data, all the three groups had a significantly high alienation score; the difference was more marked for opioid group ($p<0.01$), and less marked for other two groups ($p<0.05$). The differences across the three groups were insignificant (Tables 2 & 3).

Sensation seeking scale. Compared to the normative data, all three groups had higher scores for total scale, boredom susceptibility and disinhibition subscales, and lower scores for thrill and adventure seeking and, experience seeking subscales (Table 2). Substance-wise, for alcohol group differences were significant for total scale and all the subscales ($p<0.01$); for opioid group

TABLE 2
COMPARATIVE PERSONALITY PROFILE OF THE PATIENT GROUPS & THE NORMATIVE DATA

Variable	NORMATIVE DATA	GROUPS			F values across groups
	Mean \pm SD/ Cut Off Score	ALCOHOL Mean \pm SD	OPIOID Mean \pm SD	MIXED Mean \pm SD	
SENSATION SEEKING SCALE					
Total Scale Score	14.65 \pm 3.75	16.19 \pm 4.76	15.88 \pm 5.23	17.75 \pm 10.52	1.36
Boredom Susceptibility	2.01 \pm 0.97	4.55 \pm 1.65	3.93 \pm 1.75	3.76 \pm 1.60	5.09**
Disinhibition	3.15 \pm 1.60	3.89 \pm 1.86	3.43 \pm 2.19	3.96 \pm 1.73	1.58
Thrill and Adventure Seeking	5.09 \pm 1.43	3.91 \pm 2.01	4.58 \pm 2.28	4.55 \pm 1.79	3.11*
Experience Seeking	4.73 \pm 1.49	4.05 \pm 1.83	4.01 \pm 1.59	4.18 \pm 1.54	0.17
ALIENATION SCALE	22.92 \pm 3.47	38.84 \pm 3.47	38.33 \pm 7.64	39.07 \pm 9.11	0.09
MPQ					
Anxiety	11	11.78 \pm 3.41	10.97 \pm 3.55	11.78 \pm 3.02	1.42
Depression	5	6.81 \pm 2.09	6.64 \pm 2.30	7.18 \pm 2.03	1.03
Mania	6	8.29 \pm 2.14	7.21 \pm 2.64	7.89 \pm 2.23	4.75**
Paranoia	8	8.96 \pm 2.38	7.71 \pm 2.86	8.44 \pm 3.08	4.66**
Schizophrenia	5	8.21 \pm 2.93	7.64 \pm 3.15	8.35 \pm 2.84	1.11
Hysteria	4	3.85 \pm 1.29	3.57 \pm 1.50	3.78 \pm 1.44	0.91
Psychopathic Deviance	17	16.21 \pm 2.80	15.79 \pm 4.02	15.53 \pm 3.32	0.85
K (lie)	4	4.66 \pm 2.02	4.53 \pm 1.96	4.76 \pm 2.48	0.20
Repressor-Sensitizer	14	18.41 \pm 3.75	17.19 \pm 4.60	18.84 \pm 5.12	3.04*

* $p < 0.05$, ** $p < 0.01$

the differences were significant for only boredom susceptibility and experience seeking subscales ($p < 0.01$) and for mixed group the differences were significant more for boredom susceptibility and disinhibition subscales ($p < 0.01$) and less for total scale and experience seeking subscale ($p < 0.05$) (Table 3). Across the three groups, the student's *t* test showed the differences to be significant only between alcohol and opioid groups for boredom susceptibility and, thrill and adventure seeking subscales ($p < 0.005$); and between alcohol and mixed groups for boredom susceptibility subscale ($P < 0.01$), and adventure seeking subscale ($p < 0.05$). However, as per Scheffe's test the differences were significant only for boredom susceptibility (Table 4).

Multiphasic Personality Questionnaire. Compared to the normative data, all the three groups had a higher score on depression, mania, schizophrenia, repressor-sensitizer and K (lie) scales, and a lower score on hysteria and psychopathic deviance scales. For anxiety and paranoia scales, while alcohol and mixed groups

TABLE 3
COMPARISON OF *t*-VALUES BETWEEN PATIENT GROUPS AND NORMATIVE DATA FOR SELECTED PERSONALITY VARIABLES

Variable	ALCOHOL	OPIOID	MIXED
SENSATION SEEKING SCALE			
Total Scale Score	2.58**	1.71	2.12*
Boredom Susceptibility	13.48**	8.45**	7.42**
Disinhibition	3.07**	0.93	2.88**
Thrill and Adventure Seeking	4.86**	1.68	1.93
Experience Seeking	2.93**	3.03**	2.12*
ALIENATION SCALE	16.97*	16.12**	12.67*

* $p < 0.05$, ** $p < 0.01$

had higher scores, the opioid group scores were almost like that of the normative data for anxiety scale and, lower for paranoia scale. Overall, the mixed group had the most disturbed and the opioid group the least disturbed profile (Table 2). Across the three groups, the only significant differences were in that the alcohol group scored higher than the opioid group on mania and paranoia scales ($p < 0.01$) (Table 4).

Relationship between Alienation, Sensation

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TABLE 4
COMPARISONS OF t-VALUES AND SCHEFFE'S TEST
VALUES ACROSS PATIENT GROUPS FOR SELECTED
PERSONALITY VARIABLES

Variable	ALCOHOL VS. OPIOID		ALCOHOL VS. MIXED		OPIOID VS. MIXED	
	t value	Scheffe's	t value	Scheffe's	t value	Scheffe's
SENSATION SEEKING SCALE						
Boredom Susceptibility	2.36*	7.27*	2.92**	9.99*	0.57	0.40
Thrill and Adventure Seeking	2.01*	5.32	2.05*	4.11	0.08	0.01
MPQ						
Mania	2.87**	9.00**	1.09	1.04	1.57	2.62
Paranoia	3.04**	8.88**	1.09	1.30	1.36	2.23

* p<0.05, **p<0.01

Seeking and MPQ Scores. Compared to the normative data, the following substance specific patterns emerged. The opioid group had the highest alienation scores while the mixed group had the lowest scores. The alcohol group had the highest scores for boredom susceptibility and disinhibition subscales and total sensation seeking and, the lowest scores for thrill and adventure seeking subscale. The opioid group had the highest scores for thrill and adventure seeking and the lowest score for disinhibition and experience seeking subscales and total sensation seeking. The mixed group had the highest score for experience seeking subscale and the lowest scores for boredom susceptibility subscale. On MPQ the opioid group had the lowest scores on all scales except psychopathic deviance; the alcohol group has all scales except psychopathic deviance; the alcohol group had highest scores on mania, paranoia, hysteria and psychopathic deviance scales and; the mixed group had the highest scores on depression, schizophrenia, K (lie) and repressor-sensitizer scales and the lowest scores on psychopathic deviance scale (Tables 2-4). In contrast to the normative data showing a weakly negative correlation between alienation scores and all sensation seeking scores, the correlations were all positive across all substance abuse groups, but they reached a level of significance only in alcohol group for boredom susceptibility ($p<0.01$), disinhibition and total scale ($p<0.05$) (Table 5).

MULTIPLE DISCRIMINANT ANALYSIS

In ANOVA, since out of all the personality variables only five (boredom susceptibility and, thrill and adventure seeking subscales on sensation seeking scale, and mania, paranoia and repressor-sensitizer scales of MPQ) had contributed to significant differences across the three groups, discriminant analysis was carried out in two steps. In the first step all the personality variables, except total sensation seeking score, were included in the analysis. The results predicted the correct assignment to group in only 47% of the patients. In the second step, along with the personality variables all the demographic variables were also included in the analysis. The group predictability improved to 67%, ranging from 70% in alcohol subjects to 65% in opioid and mixed dependence subjects (Table 6). The variables significantly contributing to this predictability were, in descending order: employment status, rural-urban residence, boredom susceptibility, mania, thrill and adventure seeking; all of them together explaining about 63% of the predictability.

DISCUSSION

The demographic profile of our study subjects conforms to the clinical experience at our center (PGIMER 1993). The finding of the alcohol dependent subjects being older, more often married, somewhat better educated and better employed can be explained by the longer

period it takes to develop alcohol dependence. This delay increases the chances of completing the education, getting married, and taking up a stable job, and also that occupational disruption due to alcohol is a relatively more delayed phenomenon.

Alienation: Are substance abusers alienated? A few exceptions notwithstanding (Aggarwal *et al.*, 1980; Jones, 1980), our finding of alcohol, opioid and their concurrent dependence being associated with high alienation is in keeping with the previous research linking substance use or abuse to alienation (Basu *et al.*, 1992; Blane *et al.*, 1968; Hornquist and Akerlind, 1987; Penning and Barnes, 1982; Smith and Fogg, 1975). Is high alienation in substance abusers substance specific for pharmacological effects or social un-/acceptability of the substance? Despite somewhat higher alienation in the opioid group, the similarity of high alienation across the three study groups suggests there is no differential association between alienation and the abuse of alcohol, opioids or both. But, since alcohol and opioids can both be considered to be depressants, our study can not rule out a differential effect in case of stimulants or hallucinogens vis a vis depressants, which has not been studied specifically in the previous research. Also, the design of our study does not allow us to comment on the debatable issue of the cause and effect relationship between alienation and substance use and abuse (Basu *et al.*, 1992).

Sensation seeking: Are substance abusers high sensation seekers? Our finding of high sensation seeking across all the study groups is in line with the previous research linking substance use or abuse to high sensation seeking (Kosten *et al.*, 1994; Andrucci *et al.*, 1989; Jaffe and Archer, 1987; Segal *et al.*, 1980). Is high sensation seeking in substance abusers substance specific? In terms of total sensation seeking, our finding of no significant difference between alcohol, opioid and their concurrent dependence is like that of Spotts and Shontz (1986), who reported no substance specific differences in sensation seeking. But others researchers have reported a variable

differential relationship between sensation seeking and use or abuse of different substances like depressants, stimulants or hallucinogens, individually or in combination (Hobfall and Segal, 1983; Kern *et al.*, 1986). Which subscales contribute to sensation seeking in substance users or abusers? Earlier research has reported higher sensation seeking being contributed to by disinhibition (Basu *et al.*, 1993; Kohn and Coulas, 1985; Marvel and Hartman, 1986; Pedersen, 1991), experience seeking and, thrill and adventure seeking (Pedersen, 1991; von Knorring *et al.*, 1987; Zuckerman *et al.*, 1978), and experience seeking only (Marvel and Hartman, 1986), and boredom susceptibility (von Knorring *et al.*, 1987). In contrast, we found sensation seeking to be contributed to mainly by high boredom susceptibility and disinhibition, and by low experience seeking and, thrill and adventure seeking. Do subscales of sensation seeking scale have substance specificity? We found alcohol group to have significantly higher boredom susceptibility and lower thrill and adventure seeking compared to opioid and alcohol opioid concurrent dependent groups. This finding is only partly similar to that of Pedersen (1991) who reported positive associations between low thrill and adventure seeking and alcohol use, high experience seeking and cannabis use, and high disinhibition and use of cigarettes, alcohol and inhalents. Pedersen (1991) also summarized the previous research relating drug abuse more to disinhibition and experience seeking and, less to thrill and adventure seeking.

Multiphasic Personality Questionnaire: Do substance abusers have a specific MPQ disturbance? Our finding of all the study groups showing disturbances in depression, mania, schizophrenia, repressor-sensitizer and K (lie) scales is consistent with the previous research that the MPQ disturbance in substance abuse is broad-based, variable and non-specific, though more marked for depression, paranoia and schizophrenia scales. However, an unexplained finding in our study was the normal scores for personality deviance across all the groups, while

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TABLE 5
CORRELATIONS BETWEEN ALIENATION AND SENSATION SEEKING SCORES IN NORMATIVE DATA AND PATIENT GROUPS

SENSATION SEEKING SCORE	NORM-ATIVE DATA	ALIENATION SCORE		
		ALCOHOL	OPIOID	MIXED
Total Scale	-0.28	0.23*	0.09	0.16
Boredom susceptibility	-0.13	0.35**	0.21	0.21
Disinhibition	-0.23	0.20*	0.01	0.22
Thrill & Adventure seeking	-0.24	0.01	0.03	0.04
Experience seeking	-0.08	0.04	0.02	0.05

* $p < 0.05$, ** $p < 0.01$

the previous research has consistently shown personality deviance to be high in substance abusers (Andrussi et al., 1989; Craig, 1982; Jaffe and Archer, 1987; Ladd, 1994). Is the MPQ disturbance in substance abuse substance-specific? We found that compared to the opioid cases, alcohol cases had significantly higher mania and paranoia scores and, alcohol-opioid concurrent dependent cases had marginally higher anxiety and depression scores. This is in contrast to some studies reporting higher disturbance in MMPI in heroin abusers compared to other substances (Craig, 1982).

Alienation, Sensation Seeking and MPQ: Are substance users and abusers highly alienated and high sensation seekers and, is this pattern substance specific? In our study, compared to the weakly negative correlation in the normative data, all the study groups showed a positive correlation between alienation and sensation seeking which was significant only in alcohol cases and only for boredom susceptibility, disinhibition and total sensation seeking score. Both these findings are only in part agreement with the results of Basu et al. (1995), who hypothesized only opioid dependent subjects to be highly alienated and high sensation seekers. Do sensation seeking and MPQ have a pattern in substance users and abusers, and is this pattern substance specific? Our findings of association

TABLE 6
PREDICTABILITY OF THE PATIENT GROUPS BY DISCRIMINANT ANALYSIS USING SOCIODEMOGRAPHIC AND PERSONALITY VARIABLES

Actual Group	N	Predicted Group		
		ALCOHOL	OPIOID	MIXED
ALCOHOL	103	72	18	13
OPIOID	72	10	47	15
MIXED	55	9	10	36
Total	230	91	75	64

of high sensation seeking, and high mania and paranoia scores on MPQ only in alcohol cases, are again only in part agreement with similar findings in earlier reports correlating sensation seeking with mania and paranoia scores on MMPI in substance using populations (Andrussi et al., 1989; Marvel and Hartman, 1986).

Predictability: Can substance specific abuse be predicted from the sociodemographic and personality variables? Earlier research has referred to the value of alienation (Gersick et al., 1981) and sensation seeking (Jaffe and Archer, 1987) for predicting substance abuse. Our attempt in this direction was successful to some extent and identified boredom susceptibility and, employment status and rural/urban residence as having some predictive power, which was similar for abuse of alcohol, opioids or both. Since the number of independent variables used in the present study was fairly substantial, the predictability is likely to be lower if discriminant functions obtained here are applied to other samples.

Our findings in men under treatment for dependence on alcohol, opioids or both, support the following conclusions. Compared to the subjects not abusing any substance, all these cases show high alienation, high sensation seeking and a disturbed MPQ profile. Compared to the opioid dependent cases, alcohol dependent and alcohol and opioid co-dependent cases show higher alienation, higher sensation seeking (in terms of disinhibition and experience seeking, and in alcohol cases especially boredom susceptibility) and a more disturbed MPQ profile. Alienation and sensation seeking show a positive correlation in all three groups, but it turns out to

be significant only in alcohol cases and only for boredom susceptibility, disinhibition and total sensation seeking. Group assignment can be predicted moderately and similarly for all three groups by employment status; rural/urban residence; boredom susceptibility and, thrill and adventure seeking subscales of sensation seeking scale; and mania scale of MPQ. With respect to opioids, our findings refer to all opioids together. It is possible that behavioural effects of various opioids are influenced by the route of administration. Along with this aspect, the substance specific profile and the interrelationships of the personality variables used in this study can be the focus of the future research.

The findings of the present study, associating substance abuse with alienation, sensation seeking, and a disturbed MPQ profile highlight some possible stable behavioural patterns basic to the nature of substance abuse. Thus, there is a need to incorporate specific techniques to counter or control these behavioral patterns for effective preventive and therapeutic interventions in substance abuse.

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