

# A Follow-Up Study of Opioid Dependent Patients to Assess Their Personality Profile and to Find Association of Personality Traits with Treatment Outcome

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## ABSTRACT

### BACKGROUND

Personality traits are considered as risk factors for substance use and their assessment plays an important part in deciding prognosis and treatment outcome in opioid use disorders. The study aimed to find the prevalence of personality traits in opioid dependent patients and their association with treatment outcome.

### METHODS

100 consecutive opioid dependent male patients visiting Swami Vivekananda Drug De-Addiction and Treatment Centre were included in the study. Sociodemographic data was collected and personality profile of the patients was assessed using Big Five Personality Inventory. Patients were followed for 3 months to find treatment outcome. Association of personality traits of patients with treatment outcome was found.

### RESULTS

It was found that majority of opioid dependent patients were high on Neuroticism (70%) and Extroversion (62%) and lower on Conscientiousness (68%) and it was significantly associated with high relapse rate.

### CONCLUSIONS

Early identification of personality traits could be useful in decreasing the possibility of relapse.

### KEYWORDS

Opioid, Personality, Neuroticism, Extroversion, Conscientiousness

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## BACKGROUND

Opioid dependence is a severe condition associated with significant psychological, social and medical impairment, as well as poor treatment outcomes. It is believed that a number of aspects are involved, including biological, psychological and socioeconomic factors.<sup>1</sup>

Personality is that which distinguishes one individual from another, the emphasis being on patterns of behaviour and relations with others, rather than the physical aspect, which is of less significance. A leading cause of opioid addiction is peer pressure. This need to fit in ensures that there is a constant pool of recruits who may later develop an addiction. It involves adapting behaviours that the individual would otherwise not adapt. It indirectly has an association with individuals' personalities.<sup>2</sup> Personality traits reflect people's characteristic patterns of thoughts, feelings, and behaviours. They are considered risk factors for drug use, and, in turn, the psychoactive substances impact individuals' traits.<sup>3</sup> so treatment approaches should be that which matches individuals' personality factors. Their assessment plays an important part in deciding prognosis and treatment outcome in opioid use disorders.

## METHODS

100 consecutive opioid dependent male patients visiting Swami Vivekananda Drug De-addiction and Treatment Centre were taken for the study. Socio-demographic data was collected and personality profile of the patients was assessed by using Big Five Personality Inventory. Patients were followed up for 3 months to find treatment outcome. Association of personality traits of patients with treatment outcome was found. Urine for morphine was done to assess treatment outcome on follow up. The outcomes were compared and analysed statistically. Chi square test was used to compare the data and  $p < 0.05$  was taken as significant.

Male opioid addicts (both IDU positive and IDU negative) who visited Swami Vivekananda drug de-addiction and treatment Centre for the treatment of opioid dependence who were willing to give consent for follow-up at 3-month interval were included in the study. Patients with major cognitive dysfunction, mental retardation, other substance dependence, any medical condition which interfered with treatment and patients who did not give consent/were unable to give consent were excluded from the study.

## RESULTS

Out of 100 patients, 13 were lost to follow-up. Personality traits were found to be significantly associated with treatment outcome.

It was found that patients higher on neuroticism, extroversion and lower on conscientiousness had higher relapse rate. Table 1 shows the prevalence of personality traits in our sample of patients. 62% of patients were found higher on extroversion personality trait. 70% of patients were found higher on neuroticism. 76% of patients were found to be lower on agreeableness trait. 68% were found lower on conscientiousness and 84% were lower on openness. Table 2 shows association of extraversion personality trait with status of relapse during 3 months follow up visit. It shows highly significant association of extraversion personality trait of opioid addicts with treatment outcome status as  $p$  value  $< 0.001$ . Majority of relapsed patients (76%) were higher on extraversion and majority of abstinent patients (74.4%) were lower on extraversion.

Table 3 shows association of agreeableness personality trait with status of relapse during 3 months follow-up visit. It shows significant association of agreeableness personality trait of opioid addicts with treatment outcome status as  $p$  value  $< 0.05$ . Table 4 shows association of conscientiousness personality trait with status of relapse during 3 month follow up visit. It shows highly significant association of conscientiousness personality trait of opioid addicts with treatment outcome status as  $p$  value  $< 0.001$ . Majority of relapsed patients (100%) were lower on conscientiousness and majority of abstinent patients (74.4%) were higher on conscientiousness. Table 5 shows association of neuroticism personality trait with status of relapse during 3 months follow up visit. It shows highly significant association of neuroticism personality trait of opioid addicts with treatment outcome status as  $p$  value  $< 0.001$ . Relapsed patients (100%) were higher on neuroticism and abstinent patients (71.8%) were lower on neuroticism. Table 6 shows association of openness personality trait with status of relapse during 3 month follow up visit. It shows that association of openness personality trait of opioid addicts with treatment outcome status was not significant as  $p$  value  $> 0.05$ .

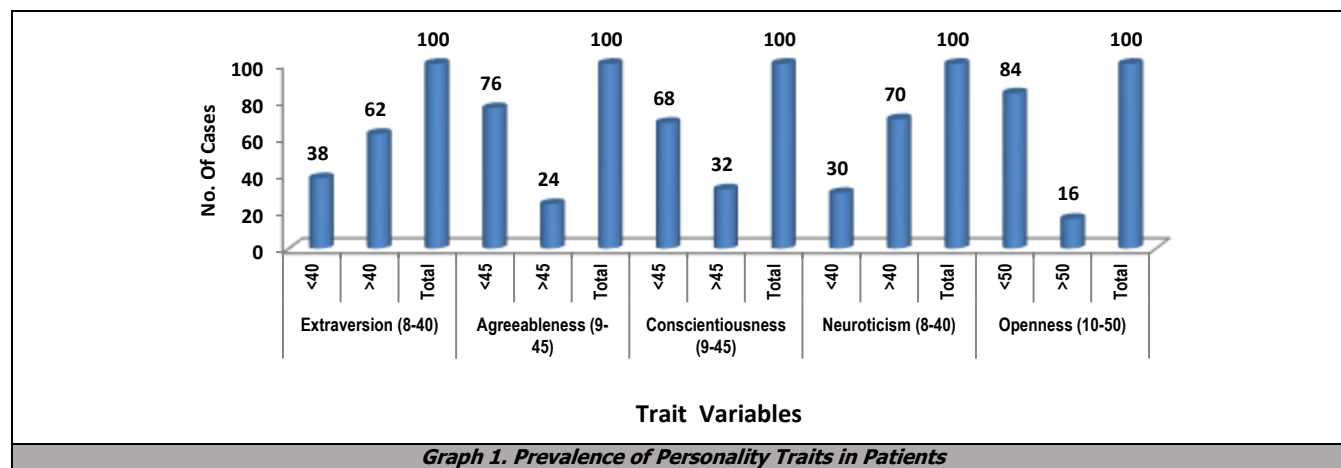
Trait Variables	No. of Patients	%
Extraversion (8-40)		
<40	38	38.0
>40	62	62.0
Total	100	100.0
Agreeableness (9-45)		
<45	76	76.0
>45	24	24.0
Total	100	100.0
Conscientiousness (9-45)		
<45	68	68.0
>45	32	32.0
Total	100	100.0
Neuroticism (8-40)		
<40	30	30.0
>40	70	70.0
Total	100	100.0
Openness (10-50)		
<50	84	84.0
>50	16	16.0
Total	100	100.0

**Table 1. Prevalence of Personality Traits in Patients**

Relapse Status in 1 <sup>st</sup> Visit				
	A	D	L	R
<40	29(74.4%)	2(15.4%)	1(4.3%)	6(24%)
>40	10(25.6%)	11(84.6%)	22(95.7%)	19(76%)
Total	39(100%)	13(100%)	23(100%)	25(100%)

**Table 2. Association of Extraversion Personality Trait with Status of Relapse in 1<sup>st</sup> Visit**

Chi-square value=37.841; d.f. 3; p-value=0.000 ( $p < 0.001$ =Highly Significant) (A=abstinent; D=Dropouts; L=Lapsed; R=Relapsed)



Relapse Status in 1 <sup>st</sup> Visit				
A	D	L	R	
<45	24(61.5%)	11(84.6%)	21(91.3%)	20(80%)
>45	15(38.5%)	2(15.4%)	2(8.7%)	5(20%)
Total	39(100%)	13(100%)	23(100%)	25(100%)

**Table 3. Association of Agreeableness of Personality Trait with Status of Relapse in 1<sup>st</sup> Visit**

Chi-square value=8.173; d.f.3; p-value= 0.043 (p<0.05=Significant)

Relapse Status in 1 <sup>st</sup> Visit				
A	D	L	R	
<45	10(25.6%)	11(84.6%)	22(95.7%)	25(100%)
>45	29(74.4%)	2(15.4%)	1(4.3%)	0(0.0%)
Total	39(100%)	13(100%)	23(100%)	25(100%)

**Table 4. Association of Conscientiousness Personality Trait with Status of Relapse in 1<sup>st</sup> Visit**

Chi-square value=53.655; d.f.3; p-value= 0.000 (p<0.001=Highly Significant)

Relapse Status in 1 <sup>st</sup> Visit				
A	D	L	R	
<40	28(71.8%)	2(15.4%)	0(0.0%)	0(0.0%)
>40	11(28.2%)	11(84.6%)	23(100%)	25(100%)
Total	39(100%)	13(100%)	23(100%)	25(100%)

**Table 5. Association of Neuroticism Personality Trait with Status of Relapse in 1<sup>st</sup> Visit**

Chi-square value=54.335; d.f.3; p-value= 0.000 (p<0.001=Highly Significant)

Relapse Status in 1 <sup>st</sup> Visit				
A	D	L	R	
<50	34(87.2%)	13(100%)	19(82.6%)	18(72%)
>50	5(12.8%)	0(0.0%)	4(17.4%)	7(28%)
Total	39(100%)	13(100%)	23(100%)	25(100%)

**Table 6. Association of Openness Personality Trait with Status of Relapse in 1<sup>st</sup> Visit**

Chi-square value=5.481; d.f.3; p-value= 0.140 (p>0.05=Not Significant)

## DISCUSSION

Prevalence of personality traits in our sample of patients was assessed. (table 1) It was found that 62% of patients were higher on extroversion personality trait. 70% of patients were found higher on neuroticism. 76% of patients were found to be lower on agreeableness trait, 68% were found lower on conscientiousness and 84% were lower on openness.

Score range of each dimension is as follows:<sup>4</sup>

Openness	: 10-50
Conscientiousness	: 9-45
Extroversion	: 8-40
Agreeableness	: 9-45
Neuroticism	: 8-40

Our findings were similar to study conducted by Dubey et al (2010) which investigated the personality traits of substance abusers as compared with non-substance abusers. It revealed that substance abused group scored higher on Neuroticism and Extraversion dimensions, where as non-substance abusers significantly scored higher on Openness and Conscientiousness dimensions of Big-Five. No significant difference was obtained on Agreeableness domain of personality.<sup>5</sup> Similar findings were supported by study conducted by Brooner et al (1993).<sup>6</sup> In a study conducted by Floryetal (2002) it was found that patients abusing substance were higher on Extraversion and lower on Conscientiousness.<sup>7</sup> Similar results were shown by the study conducted by Malouffetal (2007) which showed that substance abuse involvement was associated with low conscientiousness, low agreeableness, and high neuroticism.<sup>8</sup>

In our study there was highly significant association of extraversion personality trait of opioid addicts during follow up visit with treatment outcome status as p value <0.01 (Table 2). Relapsed patients were higher on extraversion, with 76% of relapsed patients being higher on extraversion during follow-up visit. Abstinent patients were lower on extraversion, with 74.4% of abstinent patients being lower on extraversion during follow-up visit. There was significant association of agreeableness personality trait of opioid addicts during follow up visit with treatment outcome status as p value <0.05. In our sample, 80% of relapsed patients were lower on agreeableness and 38.5% of abstinent patients were higher on agreeableness during follow-up visit. (table 3) There was highly significant association of conscientiousness personality trait of opioid addicts during follow-up visit with treatment outcome status as p value <0.01 (table 4). Relapsed patients were lower on conscientiousness, with 100% of relapsed patients being lower on conscientiousness during follow-up visit. Abstinent patients were higher on conscientiousness, with 74.4% of abstinent patients being higher on conscientiousness during follow-up visit.

Also there was highly significant association of neuroticism personality trait of opioid addicts during follow-up visit with treatment outcome status as p value <0.01 (table 5). Relapsed patients were higher on neuroticism,

with 100% of relapsed patients being higher on neuroticism during follow-up visit. Abstinent patients were lower on neuroticism, with 71.8% of abstinent patients being lower on neuroticism during follow-up visit. But there was not significant association of openness personality trait of opioid addicts during follow-up visit with treatment outcome status as  $p$  value  $> 0.05$  (table 6).

Our findings were similar to the study conducted by Delic et al (2017) which reported that persons who use heroin were consistently depicted as high on Neuroticism and higher Extroversion, also they were described as more impulsive and less sociable. Those who maintain abstinence are characterized by a higher Agreeableness and Conscientiousness.<sup>9</sup> In a study conducted by Walton et al (2004) to test the relationship between substance use and personality, it was reported that heavy users consistently scored lower than the other groups on measures of conscientiousness, impulse control, and agreeableness. Abstainers scored lower than moderate and heavy users on extraversion.<sup>10</sup>

A study was conducted by Fisher et al (1998) to determine whether personality traits are related to return to drug use following treatment for substance abuse. Personality characteristics of one hundred and eight patients residing on an in-patient substance abuse treatment program were assessed. Personality traits were examined using the 5-factor model of personality as measured by the NEO-Personality Inventory. These patients were then followed for 1 year after discharge from the treatment program. These substance abuse patients scored higher than the NEO-Personality Inventory normative sample on the personality domains of Neuroticism and Conscientiousness. A survival analysis showed that Neuroticism and Conscientiousness from the NEO-Personality Inventory were significant predictors of relapse. Odds ratios showed that the risk of relapsing was greatest for those patients who were both low in conscientiousness and high in neuroticism.<sup>11</sup>

## CONCLUSIONS

Early identification of personality traits could be useful in decreasing the possibility of relapse.

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