

Personality Traits of Substance Users in Bangladesh

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Abstract:

Background: Drug taking behavior and drug dependence is a multi-factorial disorder. Personality is a very important determining factor of drug dependence. **Objectives:** To find out the possible relationship between personality traits and substance use disorders. **Methods:** This was a descriptive, cross-sectional and case-control study conducted in the department of Psychiatry of Bangabandhu Sheikh Mujib Medical University and Central Drug Addiction Treatment Center, Dhaka for a period of one year (January 2005 to December 2005). From five hundred respondents, 250 had the history of substance use disorders selected as case, and equal number were age, sex, habitat and economic background matched controls were taken. Personality traits of both cases and control were measured by applying Eysenck Personality Questionnaire. **Results:** Mean \pm SD psychoticism (8.42 \pm 3 vs 4.33 \pm 1.8), Neuroticism (11.89 \pm 2.3 vs 9.83 \pm 2) were significantly higher ($P < 0.01$) in cases than controls. It was found that psychoticism was 2.3 times and neuroticism was 1.7 times higher in substance users than that of controls. There were no significant differences of mean distribution of extroversion and lie scales among the cases & controls. This study also revealed that, there was no significant relationship between personality traits and different variables related to substance use except that psychoticism was significantly higher in those substance users who had have positive history of troubles with law than those having no history of trouble with law (8.82 \pm 3.2 & 7.95 \pm 2.7 respectively). **Conclusion:** Personality traits may have an influence on persons with substance use disorder which deteriorates quality of life.

Key words: Drug dependence, Personality, Psychoticism, Neuroticism, Extraversion, Lie scale.

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Introduction:

Substance abuse is one of the major public health issues throughout the world that is causing serious social and economical burden to the different nations. The national co-morbidity survey in the USA found that the one year prevalence for drug misuse and drug dependence (excluding alcohol) was 3.6%, whilst the lifetime prevalence was 11.9%.¹ The cost of addictive illness to Americans is currently \$144 billion per year in health care and jobloss.² In Europe as well as in our neighbor country India, the scenario is almost same.

In Bangladesh, drug related problems are gradually becoming a burning issue in context of social, economical and medical perspective. An estimation given by the Department of Narcotic Control of Bangladesh revealed

that about 1.5 million people were involved in abusing drugs of various kinds.³

Drug taking behavior and drug dependence is a multi-factorial disorder. Of them, specific gene or an early established trait may act as predisposing factor; different environmental factors may act as precipitating and perpetuating factors whereas individual temperament, personality and constitutional characteristics act as the vulnerability factors. These vulnerability factors act as the causal determinants whether the predispositions are expressed or not. Thus personality is a very important determining factor of drug involvement.⁴ As like in other psychiatric disorders, personality of the patient is also important in case of substance related disorders because it may not only act as an etiological factor, but also may act as a pathoplastic factor and it may effect the way of psychiatric treatment and rehabilitation.⁵

A scientific research showed that characteristics of the individual rather than the drug, play a dominant

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role in vulnerability to drug abuse and they even could be identified in children's behavior as early as age seven.⁶ Another study has shown that impulsive-aggressive personality traits in childhood and adolescence predict early onset of substance abuse.⁷ One study suggested that irritability or difficult temperament is an early trait that accounts for excess adolescent drug involvement.⁸ Investigators found that novelty seeking or openness to experience modulate vulnerability to drug use and drug dependence.⁹ According to Robins, one of the most robust indicators of later risk of drug involvement, at least for boys, is an early deviance and conduct problem in childhood and antisocial personality traits later in life.¹⁰

Many studies found that patients with substance use disorder have been characterized by diverse maladaptive personality traits and these negative traits are the familial risk factors for substance use disorders by acting as a predisposing vulnerability, and by predicting the onset or age of expression of substance related problems and tendency to relapse.¹¹

Substance related disorders have become a major problem in all over the world including Bangladesh. So, this work may be helpful to find out the potential risk factors for substance related disorders in the socio-cultural context of Bangladesh and which may be a helpful one for improving clinical and public health interventions.

Methods:

This was a cross sectional, descriptive type of study and the duration of study was one year (January 2005 to December 2005). The objective of this study is to find out the relationship between personality traits and substance use disorders.

Samples: A total of 500 respondents were studied, with 250 having history of substance use disorders considered as cases (Diagnosis was made by psychiatrist using Diagnostic and statistical manual of mental disorders, DSM-IV) from Central Drug Addiction Treatment Centre (CTC) Tejgaon, Dhaka. Equal numbers of normal subjects were included from the psychiatry outpatient department of Bangabandhu Sheikh Mujib Medical University (BSMMU) as control. All the study subjects were male and above the age of 15 years. Patients with co-morbid psychiatric disorders and who were mute, stuporous, non-communicable, and with cognitive impairment were excluded in this study.

Instrument: The Bengali version of Eysenck personality questionnaire (EPQ) was used as a research instrument, which was standardized by Rahman 1980.¹²

Procedure: Research instrument was applied to the study samples after pre-testing. Ethical issues related to the study were maintained strictly during study. Diagnosed cases of substance use disorders were obtained from in patient register of Central Drug Addiction Treatment Center, Dhaka. Then socio-demographic variables and relevant information about substance use were collected by using the questionnaire and their personality traits were measured by applying EPQ. The personality traits of the healthy controls were assessed in the same way as mentioned above. All data were analyzed by Statistical package for the social science (SPSS) program. Status of personality traits and substance use were assessed with the help of correlation coefficient test. Other statistical measures and test of significance (chi square test, student's t test, z test and analysis of variance- ANOVA test) were also done accordingly.

Results:

In this study, all of the study subjects were male. Most of them were between ages 15 to 35 years and their mean age was 28.4 ± 6.7 years. Table-I shows that the mean age of the cases was 28.4 ± 6.7 years. Of the cases, 177 (70.8%) was from urban background and only 73 (29.2%) was from rural background. The mean family income per month of the substance users was Taka 4943.6 ± 3224 . Similar sample characteristics of control group were observed.

As shown in Figure.1, among the respondents heroin users were 193 (77.2%) Cannabis users 41 (16.4%) phensedyl 12 (4.8%), injection 3(1.2%) and alcohol users were only 1 (0.4%).

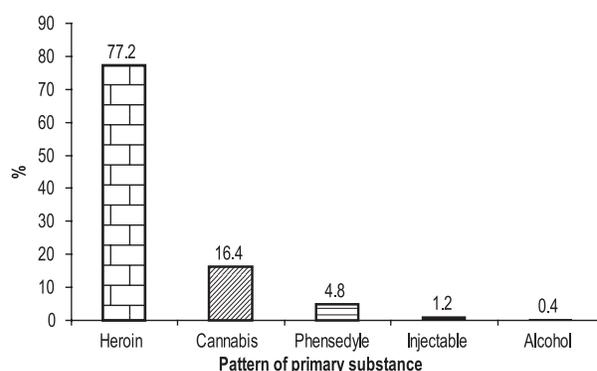


Fig-1: The percentage distribution of substance users on the basis of primary substance used

Table-II indicates that the mean psychoticism and neuroticism were significantly higher among the substance users (8.42±3.0 & 11.89±2.3 respectively) than the normal subjects (4.33±1.8 & 9.83±2.0 respectively). On the contrary, the mean extraversion was a little bit higher among the normal subjects (9.82±2.0) than the substance users (9.74±2.7) and lie scale was higher among the substances users (9.74±2.8) than the normal subject (9.61±2.1), but the mean differences were not statistically significant (P>0.05).

In Table-III, current age of the respondents, literacy, occupation, residence and different personality traits in terms of psychoticism, neuroticism, extroversion and lie scale were entered into the logistic regression model. Analysis indicated that substance use disorder was significantly associated with literacy, occupation, residence, psychoticism, neuroticism and lie scale. The substance use disorder was 3.1 times higher among the illiterate, 2.4 times among the unemployed, 2.8 times among

the businessmen and 1.9 times among the urban residents. Analysis also revealed that psychoticism was 2.3 times, neuroticism was 1.7 times and lie scale was 1.2 times higher among the substance users which were statistically significant (P<0.05 for all).

Table-IV, V show the relationship of psychoticism, neuroticism, extroversion and lie scale of the substance users with different variables related to substance use respectively, All table analyses indicate that in term of psychoticism, neuroticism, extroversion and lie scale, low statistically significant mean differences were found in type of primary substance use, age of initiation, route of taking substances and history of exposure. However, a statistically significant mean difference of psychoticism was found among the substance users having history of trouble with law or with police (p<0.05). However, in case of neuroticism, extroversion and lie scale no such significant association was found in substance users with history of trouble with law or with police.

Table-I

The sample characteristics of cases and control subjects

Sample Characteristics		Case (N=250) No. (%)	Control (N=250) No. (%)
Age in years	15-25	99 (39.6%)	90 (36.0%)
	26-35	121 (48.4%)	133 (53.2%)
	≥ 36	30 (12.0%)	27 (10.8%)
	Mean ± SD (Years)	28.4±6.7	27.4 ± 6.2
Residence	Urban	177 (70.8%)	184 (73.6%)
	Rural	73 (29.2%)	66 (26.4%)
Monthly family income (Tk)	<Tk. 5000	136 (54.4%)	122 (48.8%)
	Tk. 5000-10000	85 (34.0%)	90 (36.0%)
	> Tk 10000	29 (11.6%)	38 (15.2%)
	Mean ±SD (Tk)	4943.6±3224.1	5302.8±2871.3

Table- II

Mean distribution of different personality traits of substance users and control group

Parameters	Mean±SD of Personality traits		p value¶
	Case (n=250)	Control (n=250)	
Psychoticism	8.42±3.0	4.33±1.8	0.001*
Neuroticism	11.89±2.3	9.83±2.0	0.001*
Extraversion	9.74±2.7	9.82±2.0	0.681**
Lie scale	9.74±2.8	9.61±2.1	0.564**

¶ P value reached from unpaired student's t test

* Statistically significant (P<0.05)

** Statistically not significant (P>0.01)

Table-III
Logistic regression analysis of factors influencing substance users.

Parameters	B	Sig.	Odds ratio	95.0% C.I.
Age in years	0.006	0.809	1.006	0.960-1.054
Literacy				
Illiterate	1.130	0.016	3.096	1.239-7.733
Literate (Ref)	-	-	-	-
Occupation				
Non-specific job (Ref)	-	-	-	-
Unemployment	0.856	0.037	2.353	1.054-5.253
Student	0.564	0.297	1.757	0.609-5.069
Service	0.374	0.436	1.454	0.567-3.728
Business	1.024	0.009	2.785	1.292-6.001
Residence				
Rural (Ref)				
Urban	0.627	0.038	1.873	1.035-3.388
Psychoticism	0.823	0.000	2.278	1.933-2.685
Neuroticism	0.506	0.000	1.659	1.434-1.920
Extroversion	0.012	0.840	1.012	0.904-1.132
Lie scale	0.196	0.001	1.216	1.084-1.364
Constant	-13.932	0.000	0.000	

N=500

Model chi square =353.424; df =11; p<0.001

Table-IV
Relationship of Psychoticism trait with selected variables among substance users

Variables		Frequency (mean±SD)	Psychoticism	p value
Primary substance(n=250)	Heroin	193	8.38±3.0	0.908*
	Cannabis	41	8.61±3.1	
	Phensedyl & others	16	8.38±3.4	
Age at initiation (years)(n=250)	<15	21	9.43±2.8	0.383*
	15-19	107	8.25±3.2	
	20-24	78	8.27±2.9	
	25+	44	8.61±2.9	
Routs of taking substances (n=250)	Smoking/chasing	234	8.40±3.0	0.615¶
	others routes	16	8.80±3.5	
History of exposure (n=250)	Yes	148	8.17±2.9	0.112¶
	No	102	8.79±3.1	
History of trouble with police or law (n=250)	Yes	135	8.82±3.2	0.022¶*
	No	115	7.95±2.7	

¶ p value reached from unpaired student's t test

* p value reached from one way analysis of variance (ANOVA)

¶* p value statistically significant (p<0.05).

Table-V
Relationship of Neuroticism trait with selected variables among substance users

Variables		Frequency	Neuroticism (meanSD)	p value
Primary substance (n=25)	Heroin	193	11.89±2.3	0.080*
	Cannabis	41	11.51±2.0	
	Phensedyl & others	16	13.00±2.4	
Age at initiation (years) (n=25)	<15	21	12.00±1.8	0.50*
	15-19	107	12.33±2.3	
	20-24	78	11.53±2.1	
	25+	44	11.45±2.4	
Routs of taking substances (n=25)	Smoking/chasing	234	11.86±2.2	0.259¶
	others routes	16	12.53±2.3	
History of exposure (n=25)	Yes	148	11.97±2.3	0.544¶
	No	102	11.79±2.2	
History of trouble with police or law (n=25)	Yes	135	11.94±2.2	0.734¶
	No	115	11.84±2.3	

¶ p value reached from unpaired student's t test

·p value reached from one way analysis of variance (ANOVA)

Discussion:

In the present study most of the substance users were from urban background (70.8%) and only 29.2% were from rural background. In a previous study it was found that the rural substance users were 20%¹² which might help to assume that the trend of substance use rapidly engulfing the rural community also.

54.4% of the substance users came from the family having monthly income less than 5000 per month, 34.0% from having monthly income between 5000-10000, and 11.6% having family income more than 10000 per month, indicating that substance use disorders confined mostly to lower and middle classes. In this study it was shown that 77.2% of the substance users were taking heroin as their primary drug, next to heroin was cannabis (16.4%), phensedyle (4.8%), injection drugs (1.2%) but alcohol was only 0.4%. 90% users were smoker, only 5 patient found to be non smoker. It was also noted that 69.6% users were poly substance users and only 30.4% were taking single drug.

Mean age at initiation of substance taking was 19.9±4.7 years ranging from 10 to 35 years and mostly in between the age of 15 to 24 years (74%). The most frequent route of taking substances was smoking or chasing (93.6%)

followed by oral route (5.2%) and injection (1.2%). It was also found that 94.8% users were habituated to take substances daily.

96.8% abusers had no family history of substance abuse and only 3.2% had positive family history. 59.2% admitted their positive exposure history and 40.8% had no history of exposure. Regarding trouble with law, 54% abusers responded positively and 46% had no history of trouble with law or with police. The socio-demography & pattern of substance use were almost consistent with those of the previous studies done by Chowdhury¹³, Sobhan & Khaleda¹⁴, Rahman, Sabeka and Karim.¹⁵

The present study found that among the substance users, the mean Psychoticism, Neuroticism, Extroversion & Lie score were respectively 8.42 ± 3.0, 11.89 ± 2.3, 9.74 ± 2.7 & 9.74 ± 2.8. On the other hand, among the control group- the mean Psychoticism score was 4.33 ± 1.8 mean Neuroticism score was 9.83 ± 2.0, Extroversion score was 9.82 ± 2.0 & Lie score was 9.61 ± 2.1 respectively. Therefore, it reveals that mean Psychoticism and Neuroticism score were significantly higher among the substance users than those of the normal subjects. On the other hand, the mean Extroversion score was little bit higher among the normal subjects than the substance users and Lie score was a bit

higher among the substance users than normal subjects, but the mean differences were not significant. It was also found that Psychoticism was 2.3 times higher in substance users than control but Neuroticism was only 1.7 times higher. Almost similar results were found in the studies done by Rosenthal *et al*¹⁶, Bobes *et al*¹⁷, King *et al*¹⁸.

In this study, it was also tried to find out the relationship of different personality traits of the substance users with different variables related to substance use. In terms of Psychoticism, no statistically significant mean differences was found in number of substance use, type of substance used, age at initiation, routes of taking substances, history of exposure ($P>0.05$). But a statistically significant mean difference of ($P<0.05$), where P scores of the substance user with positive history of trouble with law 8.82 ± 3.2 that of substance users with negative history 7.95 ± 2.7 . In terms of neuroticism, Extroversion and Lies scale no statistically significant association was found with type of primary substance, age at initiation, route of taking substance, history of exposure and history of trouble with law. This finding regarding relationship of different personality traits of the substance users with different variables related to substance use were almost consistent with the finding of the studies done by Rosenthal *et al* on 1990 and Bobes *et al* on 2002.

Conclusion:

It can be concluded that psychoticism may be considered as the commonest trait among the substance users in Bangladesh. Psychoticism was significantly increased in those substance users who have positive history of trouble with law. This study has several limitations. All the study subjects were male. Female subjects could not be included in this study due to the reason of no indoor facilities available in CTC for women. The study of the cases was done only at CTC. Multicentric study could not be carried out due to time constraint. For all the information regarding socio-demographic data and data related to substance use, researcher had to depend only on patient's statement and indoor register of the patient. Control samples were selected from a different center (at BSMMU) due to less unavailability control group at CTC. Psychoticism was found significantly higher in patients with substance use disorder than that of normal subjects. Neuroticism was also significantly higher in the patients with substance use disorder. Therefore personality traits may have some role in the etiology of substance use disorder and may act either as predisposing, precipitating or perpetuating factors. So personality traits of a person should be considered during treatment, management, prevention and rehabilitation of the patients with substance use disorder. A large-scale, long-term study among substance users of both sexes may be undertaken in our country.

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