Personality disorders in patients with substance use disorders

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Objective
This study was performed to determine comorbidity between substance use disorders (SUDs) and personality disorders (PDs) as well as to evaluate the severity of SUDs.

Patients and methods
A total of 120 adult male inpatients participated in the study. They were admitted in the Addiction Management Unit at Assiut University Hospital within the period from the 1st of December 2016 till the end of November 2017. All patients met the *Diagnostic and statistical manual of mental disorders*, 5th ed. diagnostic criteria for SUD. The 100 healthy adult male patients volunteered to participate in the study were from the general population and matched with the patient group for age and socioeconomic status. They were relatives of other patients in the outpatient clinic in Assiut University Hospital rather than from the neuropsychiatric clinic. The patients and controls gave written consent to participate in the study after full explanation of the study procedures and were subjected to the mini-international neuropsychiatric interview to excluded psychiatric disorders. All patients were subjected to urine drug screening as well as to the following scales: Addiction Severity Index (ASI), Structured Interview for the Five-Factor Model (SIFFM), and Structured Clinical Interview II. The control group was subjected to urine drug screening as well as to SIFFM scale.

Results
Majority of patients had dependence of more than one (58%) substance with tramadol dependence in 30% of patients. The most common personality disorders that was noticed among the studied patients sample using Structured Clinical Interview II were antisocial, avoidant, and paranoid (17.5% each),while the most prevalent trait using SIFFM being neuroticism and conscientiousness. Antisocial personality was the most frequent with multiple substance addiction (20%), while avoidant and antisocial personality were the most frequent with tramadol. Also, there observed a positive correlation between ASI and neuroticism while negative correlation with conscientiousness. There was higher ASI with histrionic personality (mean score, 39), dependent (mean score, 33±1.11), followed by borderline (mean score, 22.5 ± 4.89).

Conclusion
The most prevalent PD was antisocial, avoidant, and paranoid. There are strong relationships between ASI and PDs.

Keywords:
comorbidity, personality disorders, substance use disorders

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Introduction

Personality disorder (PD) is an enduring pattern of behavior and inner experience that manifests in at least two of the following four areas: cognition, affectivity, interpersonal function, or impulse control [1]. Substance use disorder (SUD) is characterized by a pattern of continued pathological use of a medication, nonmedically indicated drug or toxin, which results in repeated adverse social consequences related to drug use, such as failure to meet work, family, or school obligations, interpersonal conflicts, or legal problems [2]. There are various different hypotheses to explain the frequent comorbidity of PDs and SUDs, including secondary substance abuse in patients with a primary diagnosis of a PD, the existence of common biological vulnerability factors such as problems with impulsivity and impulse control, and the possibility that repeated trauma causes personality changes that may be associated with the diagnosis of PD [3].

In general, patients with PDs and comorbid SUDs[4] have more problematic symptoms of substance use than those without a PD, are more likely to participate in risky substance-injecting practices that predispose them to blood borne viruses, are more likely to engage in risky sexual practices and other disinhibited behaviors; and may have difficulty staying in treatment programs and complying with treatment plans.

Aim

This study was performed to determine comorbidity between SUDs and PDs as well as to evaluate the severity of SUDs.

Patients and methods

Patients

In all, 120 adult male inpatients participated in the study. They were admitted to the Addiction Management Unit at Assiut University Hospital (AUH) within the period from the 1st of December 2016 till the end of November 2017. All patients met the *Diagnostic and statistical manual of mental disorders*, 5th ed. diagnostic criteria for SUD. The 100 healthy adult male patients volunteered to participate in the study were from the general population and matched with the patient group for age and socioeconomic status. They were relatives of other patients in the outpatient clinic in AUH rather than the neuropsychiatric clinic. All the patients and controls gave written consent to participate in the study after full explanation of the study procedures and were subjected to the mini-international neuropsychiatric interview to exclude psychiatric disorders [5]. The exclusion criteria include patients who refuse to give informant consent and patients with other psychiatric disorders) e.g. mood disorders, psychotic disorders). The protocol of this study was approved by the ethics committee in Faculty of Medicine, Assiut University.

Methods

The patients were interviewed guided by a psychiatric interview sheet of the Neurology and Psychiatric Department in AUH. It includes a detailed personal history, history of present illness, past personal history, and family history and the patients were diagnosed according *Diagnostic and statistical manual of mental disorders*, 5th ed.. The patients were subjected to urine drug screening test immediately after admission. PDs were assessed by using the Structured Clinical Interview (SCID-II) [6], which is designed to be administered by a mental health professional, either a psychologist or a psychiatrist who had experience performing unstructured, open-ended question, and diagnostic evaluations. We used the translated validated Arabic form of SCID-II which was only offered in a single edition [6]. We used also the Structured Interview for the Five-Factor Model scale[7] for detection of personality traits either in patients or in control group. These five overarching domains have been found to contain and subsume most known personality traits and are assumed to represent the basic structure behind all personality traits. The five factors have been defined as neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Beneath each proposed global factor, there are a number of correlated and more specific primary factors. The severity of addiction assessed by Addiction Severity Index (ASI)[8] in the translated Arabic version according to its known standard 10-point scales (0–9), which determine the seriousness of a client's problem. The higher the score is, the greater the need for treatment in each area or for immediate intervention. The ASI scores is used to profile a client's problem areas and then plan an effective course of treatment. The 10 known ASI scales include: (0–1) no real problem, treatment not indicated, (2–3) slight problem, treatment probably not necessary, (4–5) moderate problem, some treatment indicated, (6–7) considerable problem, treatment necessary, (8–9) extreme problem, treatment absolutely necessary. The ASI is applied by a well-trained psychologist.

The control group was subjected to complete psychiatric interview, urine drug screening test, and Structured Interview for the Five-Factor Model [7]. We select our control from those who are free from any PDs using SCID-II and psychiatric interview. We also included in the control group only those who are negative for urine drug screening test.

Statistical analysis

Data were collected and analyzed using SPSS(Statistical Package for the Social Science, version 20, IBM, and Armonk, New york), χ^2 test, Student's *t* test, analysis of variance test, and Spearman's correlation.

Results

Neuroticism and conscientiousness had significant difference between both patients and control samples ($P < 0.05$), while other five factors of personality had no significant difference (Table 1).

The most frequent PD among the patients' sample was antisocial, avoidant, and paranoid personality that presented in 21 (17.5% each) patients. Other PDs are summarized in Table 2. It was noticed that 33 (27.5%) patients had mixed PDs as shown in Table 3.

Table 4 shows that there was extreme problem in 29.2% of patients according to drug intake, 14.2% of patients according to psychological state, 5% of patients according to social relations, and 2.5% of patients according to occupation (Figs. 1 and 2).

Table 5 shows a significant *P* value regarding neuroticism ($P = 0.01$) and

Table 1 Personality traits among both studied samples by the Structured Interview for the Five-Factor Model

Five-factor personality traits	Patient sample (*n*=120) [*n* (%)]	Control sample (*n*=100) [*n* (%)]	*P*
Neuroticism			0.02*
Low	0	34 (34)	
Moderate	50 (42)	60 (60)	0.03*
High	70 (58)	6 (6)	
Mean±SD	28.11±5.67	24.11±5.11	
Extraversion			0.52
Low	10 (8.3)	9 (9)	
Moderate	110 (91.7)	91 (91)	
High	0	0	
Mean±SD	21.05±4.51	20.54±4.93	0.42
Openness to experience			0.23
Low	87 (72.5)	67 (67)	
Moderate	33 (27.5)	33 (33)	
High	0	0	
Mean±SD	9.75±4.75	9.85±4.85	0.87
Agreeableness			0.60
Low	7 (5.8)	3 (3)	
Moderate	112 (93.3)	96 (96)	
High	1 (0.8)	1 (1)	
Mean±SD	20.15±3.87	21.12±4.03	0.47
Conscientiousness			0.03*
Low	30 (25)	15 (15)	
Moderate	35 (29.2)	20 (20)	
High	55 (45.9)	65 (65)	
Mean±SD	10.45±2.34	16.79±1.99	0.01*

**P* value is statistically significant when less than 0.05).

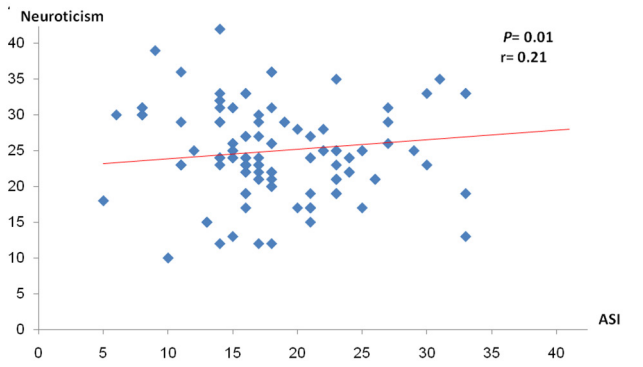
Table 2 Clinical patterns of personality disorders by the Structured Clinical Interview II in patient sample

Types of personality	Patients sample (*n*=120) [*n* (%)]
Avoidant	21 (17.5)
Dependent	2 (1.7)
OCP	8 (6.7)
Passive aggressive	7 (5.8)
Depressive	10 (8.3)
Paranoid	21 (17.5)
Schizotypal	0
Schizoid	7 (5.8)
Histrionic	1 (0.8)
Narcissistic	7 (5.8)
Borderline	12 (10)
Antisocial	21 (17.5)
Not otherwise personality	36 (30)

conscientiousness (P = 0.02) with mild positive correlation between neuroticism and agreeableness with ASI;, however, they are not statistically significant (r = 0.2) with mild negative correlation between conscientiousness and ASI but are not statistically significant (r = −0.2) (Fig. 3).

Table 6, it was noticed that histrionic, dependent, borderline, and Obsessive Compulsive personality (OCP) personality had a higher ASI (39, 33 ± 1.11, 22.5 ± 4.89, and 22 ± 3.56, respectively), while the lowest ASI was noticed with paranoid personality (16.04 ± 3.65).

Figure 1



Correlation between ASI and neuroticism. ASI, Addiction Severity Index.

Discussion

There are various hypotheses to explain the frequent comorbidity of PDs and SUDs, including secondary substance abuse in patients with a primary diagnosis of a PD, the existence of common biological vulnerability factors such as problems with impulsivity and impulse control, and the possibility that repeated trauma cause personality changes that may be associated with the diagnosis of PD [3]. Our study included 120 patients with SUDs as well as 100 normal volunteers of matched age, sex, and socioeconomic status; the patients were admitted in the addiction management unit in AUH from the 1st of December 2016 till the end of November 2017.

The majority (58.3%) of patients who were included in the study had dependence of more than one substance, while tramadol was the frequent single used substance among those patients (30, 30%). Other agents were opium, morphine, heroine, and cannabinoid, and each of them was detected to be used by three (3.2%) patients and only two (1.7%) patients had dependency to cocaine.

In this study, personality traits assessment using the five-factor model among patients and controls showed that there is higher prevalence of neuroticism (mean, 28.11 ± 5.67) and low conscientiousness (mean, 10.45 ± 2.34) among drug abusers, in comparison to nondrug abusers (control) who had low neuroticism (mean, 24.11 ± 5.11) and high conscientiousness (mean, 16.79 ± 1.99). These results are consistent with that obtained in the study of Terracciano *et al.* [9], who found a more extreme profile in cocaine and heroin users and who show higher scores of neuroticism (mean, 57.6; P < 0.05) and very low scores of conscientiousness (mean, 40.3; P < 0.01). The low conscientiousness can be explained by lack of superego punitive function in addicts in comparison to normal populations; the higher neuroticism is

considered a precipitating factor for addiction and can be explain why our patient group use drugs to relieve anxiety and depressive symptoms.

In this study, the most frequent PD among the study group was antisocial, avoidant, paranoid, and borderline personality that presented in 17.5%. This is consistent with the study of Verheul *et al.* [10], who studied the prevalence of PDs among addicts as antisocial (27%), avoidant (18.4%), borderline (18.4%), and paranoid (10.8%). Also, this study is consistent with the result of Bowden-Jones *et al.* [11], who found that the highest PDs were avoidant (27.4%), antisocial (11.3%), and borderline (9.7%). Again our study results are consistent with those obtained by Casadio *et al.*[12] who found the prevalence of PDs such as antisocial (13.8%), borderline (15%), paranoid (8%), and avoidant (7.8%) [13]. This study is also consistent with the study of Rahimi *et al.*[14] who found antisocial PD with the highest comorbidity with substance abuse (17.5%) [15], and also consistent with the same result of the study of Langås *et al.* [16], who found high prevalence of antisocial 10 (16%) and borderline (8, 13%).

Our study is inconsistent with the study of Echeburua *et al.*[13] which reported that the most common PDs in alcohol dependence syndrome is obsessive–compulsive disorder (12%), followed by antisocial, paranoid, and dependent PDs (7% each).

Our results can be explained by the fact that antisocial PDs is the most prevalent type of PDs among men in this age group, and it is characterized by violation of norms and tendency to drug addiction. Also avoidant PD patients tend to use drugs to relive their social stress as a trial for self-medication.

Table 3 Mixed personality disorders by the Structured Clinical Interview II in patients' sample

Types of personality	Patients sample (*n*=120) [*n* (%)]
Avoidant and paranoid	10 (8.3)
Antisocial and paranoid	10 (8.3)
Antisocial and borderline	10 (8.3)
Depressive and narcissistic	3 (2.5)

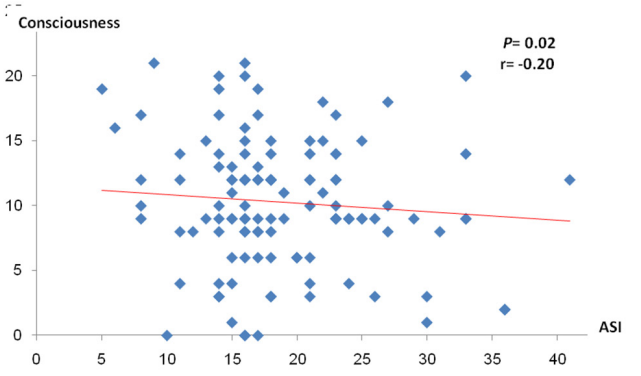
In this study regarding [Table 4] mixed personality, our results are consistent with the study by Fazel and Danesh [15], who found the high prevalence of combined antisocial PD and borderline PD in criminal populations. Also, a study by Schroeder *et al.*[17] found high prevalence of combined antisocial PD and borderline PD in those who committed a series of violent and sexual offences. Trull *et al.*[18] concluded that the co-occurrence of more than one PD in the same individual is more often the rule than the exception.

Howard[19] suggested that the prevalence of antisocial/borderline comorbidity varies according to the nature of the studied persons. He also mentioned that these can be explained by the suggestion that psychopathology represented by antisocial/borderline comorbidity extends beyond the limits of specific PD to encompass other categories of psychiatric disorders.

Regarding the effect of the severity of addiction, ASI in this study shows that there was extreme problem in 29.2% of patients according to drug intake, 14.2% of patients according to psychological state, 5% of patients according to social relations, and 2.5% of patients according to occupation.

Table (4) showed a significant *P* value regarding neuroticism (*P* = 0.01) and conscientiousness

Figure 2



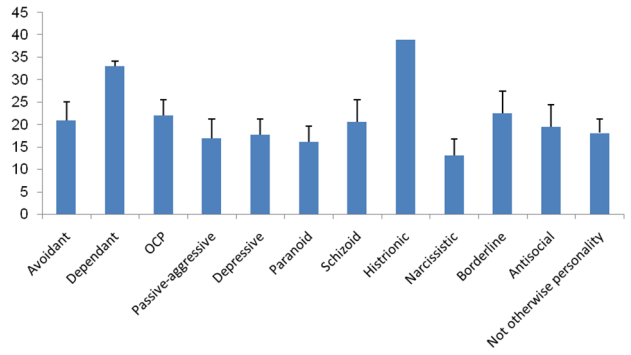
Correlation between ASI and conscientiousness. ASI, Addiction Severity Index.

Table 4 Parameters of Addiction Severity Index in the patient sample

Parameters of ASI	Severity of the problem				
	Extreme	Considerable	Moderate	Slight	No
Health	0	0	2 (1.7)	4 (3.3)	114 (95)
Occupation	3 (2.5)	11 (9.2)	15 (12.5)	44 (36.7)	47 (39.2)
Drug intake	35 (29.2)	40 (33.3)	33 (27.5)	12 (10)	0
Legal	2 (1.7)	2 (1.7)	2 (1.7)	10 (8.3)	104 (86.7)
Family history	0	1 (0.8)	4 (3.3)	11 (9.2)	104 (86.7)
Relations	6 (5)	37 (30.8)	55 (45.8)	15 (12.5)	7 (5.8)
Psychological state	17 (14.2)	17 (14.2)	29 (24.2)	37 (30.8)	20 (16.7)

ASI, Addiction Severity Index.

Figure 3



ASI in different types of personality based on SCID-II. ASI, Addiction Severity Index; SCID-II, Structured Clinical Interview.

Table 5 Correlation between Addiction Severity Index and each factor in the Structured Interview for the Five-Factor Model

Five-Factor Personality Traits	*r*	*P*
Neuroticism	0.21	0.01
Extraversion	0.09	0.45
Openness to experience	0.01	0.44
Agreeableness	0.2	0.54
Conscientiousness	−0.2	0.02

Table 6 Clinical patterns of personality disorders by the Structured Clinical Interview II and Addiction Severity Index in the patient sample

Types of personality disorder	Addiction Severity Index
Avoidant	20.95±4.06
Dependent	33±1.11
OCP	22±3.56
Passive aggressive	16.85±4.33
Depressive	17.7±3.59
Paranoid	16.04±3.65
Schizotypal	0
Schizoid	20.57±4.98
Histrionic	39
Narcissistic	13.14±3.57
Borderline	22.5±4.89
Antisocial	19.40±5.03
Not otherwise personality	18.11±3.09

(P = 0.02) with mild positive correlation between neuroticism and agreeableness with (ASI), however not statistically significant (r = 0.2). with mild negative correlation between conscientiousness and (ASI) but not statistically significant (r = -0.2).

These correlations are consistent with the study of Terracciano *et al.*[9] who found a positive correlation between neuroticism and negative correlation between conscientiousness and severity of heroin users (P < 0.01), respectively.

Also this study showed that histrionic and obsessive–compulsive PDs were associated with higher scores of ASI than other types of PDs, with ASI score of 39.33 ± 1.11 and 22 ± 3.56, respectively.

Grant *et al.*[20] found a high incidence of antisocial personality, histrionic personality, paranoid personality, and OCP in alcohol-dependent patients in comparison to alcohol abusers (19.2, 21.3, 13.6, and 7.4, respectively) and in alcohol-dependent patients in comparison to abusers (9.5, 7.8, 5.9, and 5.6%, respectively) in.

Skodol *et al.*[21] found positive correlation between antisocial PDs and severity of abuse of stimulants and other drugs (P = 0.001). They also found a positive correlation between borderline PD and alcohol dependence (P = 0.001).

Conclusion

We concluded that the most prevalent PD was antisocial, avoidant, and paranoid (17.5% each), while the most prevalent personality trait was neuroticism (58%) and conscientiousness (45.9%). The most common drug of abuse was multiple substance in 58%, followed by tramadol in 30% and there are strong relationships between ASI and PDs.

Limitations

Women admitted in our addiction management unit as well as more patients refuse to participate in the study for fear of sharing their personal data. Also, there was lack of credibility of information from some patients; all these factors are causes of limitation in our study and further study is required including larger number of participants.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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