Comorbidity of Substance Dependence and Other Psychiatric Disorders

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ABSTRACT

Background and aim: The relationship between psychiatric and drug abuse disorders had been suggested by psychometric studies and structured clinical interviews. An individual suffering from these forms of comorbidity also have a worsened clinical course outcome and are at an increased risk of suicide, impairment and disability. This study aims to detect comorbid psychiatric disorder in substance dependent patients and associated pattern of personality traits. Method: Psychiatric morbidity and personality assessment were studied in a sample of 65 male patients recruited from the inpatient psychiatric unit of Assiut University Hospital who were admitted for treatment either of drug dependence or associated psychiatric disorder. The subjects were interviewed using the Arabic translation of the Structured Clinical Interview for DSM-III-R (SCID). In addition, Structured Interview for Five Factor Model of personality (SIFFM) was used for assessment of personality. Results: Smoking represents the most prevalent, 93.8%, after its exclusion, 84.6% are dependent on more than one substance. Relative frequency of substance of dependence was found to be as follow: Smoking, 93.8%; Opioid, 69.2%; Bango, 58.5%; Hashish 29.2% and Alcohol, 24.6 %. The least frequent substances are Barbiturates, 16.9 %; Ephedrine, 15.4 %; and lastly Anticholinergic, 13.8 %. Lifetime prevalence of any comorbid axis I psychiatric disorder was found to be 52.3%. The prevalence is 18.5% for mania and 16.9 % for depression. That of anxiety is 7.7 %, of psychotic disorder is 4.6 % and that of conduct disorder is 4.6%. As regard personality disorders; Antisocial personality disorder is the highest 27.7% followed by Borderline, 15.4%; Dependent 10.8%; Histrionic, 9.2%; Obsessive compulsive personality disorder, 4.6%, and lastly Schizotypal personality (1.5%). Most of the patients have moderate scores as regard the domains of SIFFM. Significant association was found between neuroticism and alcohol dependence and extraversion and anticholinergic dependence. We did not find significant association between other substances of dependence with certain type of psychiatric disorder or personality traits. Conclusion: Polysubstance dependence seems to be the role, and psychiatric comorbidity seems to be high in substance dependent patients. There is no significant association between certain personality trait and specific substance except neuroticism and alcohol dependence, and extraversion and anticholinergic dependence.

(INTRODUCTION

Relationship between psychiatric and drug abuse disorders had been suggested by psychometric studies1 and structured clinical interviews2. Scientific literatures found a strong association of substance use disorders with anxiety, depression and antisocial personality traits3,4. Individual suffering from these forms of comorbidity also have a worsened clinical course and outcome, and are at an increased risk of suicide, impairment and disability5,6,7. Kokkevi and Stefanis8 found a strong association between opiate dependence and DSM-III psychiatric disorders using lifetime prevalence and last month prevalence. Angest9 in an adult community population has found an increase in depressive symptoms after cannabis use. Contrary to this Way et al.10 found that depression increases the risk of later cannabis use, rather than vice versa.)
It is well established that individuals with substance use disorders typically differ from controls on several broadly defined dimensions of personality, including behavioral disinhibition (i.e. impulsivity, sensation seeking), negative emotionality (i.e. high reactivity, pessimism, neuroticism), and positive emotionality (i.e. extraversion, sociability, agreeableness). In addition, these and other maladaptive personality traits have been observed across diverse forms of substance-use disorders. Despite the considerable evidence for an association between these personality traits and substance-use disorders, in a general sense, the degree of specificity to which the traits may be differentially linked to particular classes of the substance is unclear. For example, although the personality traits among cocaine and heroin abusers have not clearly distinguished, both group have been characterized as more negative and impulsive than abuser of more socially accepted substances such as alcohol. In our locality there is observed increase prevalence of substance use disorders especially among those of younger age.

The goal of this study is to: 1) detect comorbid psychiatric disorder in substance dependent patients, and 2) detect pattern of personality traits in those patients.

**METHODS**

1. Subjects:
   The sample comprises 65 male patients recruited from the inpatient psychiatric unit of Assiut University Hospital who seeking treatment either of drug dependence or associated psychiatric disorder. The entire studied sample was interviewed at the time of admission for diagnosis and after control of symptoms for assessment of personality.

2. Procedures:
   History taking and mental state examination were performed at the time of admission. After control of the associated psychiatric disorder, withdrawal or intoxication manifestations, the patient has consented to participate in the study. The subjects were interviewed using the Arabic translation of the Structured Clinical Interview for DSM-III-R (SCID). Assessment of socioeconomic state was done on a scale. This scale contains four main variables; the educational levels have the father and mother, the occupation of the father and mother, the total family income and life style of the family. Categorization of individuals of the studied sample into high, middle or low class was done. Demographic characteristics were obtained during the clinical interview.

3. Personality assessment
   Assessment of personality was done by using the Structured Interview for Five Factor Model of personality (SIFFM). SIFFM was previously translated to Arabic language, standardized and validated in a non-published work. The FFM consists of the following bipolar trait dimensions: a) Neuroticism (vs. emotional stability); b) extraversion (vs. Introversion); c) Openness to experience (vs. Closeness to experience); d) Agreeableness (vs. Antagonism) and e) Conscientiousness (vs. Negligence). Each of these broad domains also differentiated into other facets. The SIFFM contains 120 interview items and require approximately one hour to be administered. Interpretation of the SIFFM domain scores is as follow: Scores 0-12 are considered salient low level of trait; scores 13-35 are considered moderate level and scores 36-48 are considered salient high level of the trait.

4. Data analysis
   Data was analyzed by using the statistical package SPSS version 10.0. Data analysis included chi-square tests for multi-way tables of categorical variable and analysis of variance (ANOVA) for continuous data. Statistical significance was considered at P value of 0.05 or less.
Post hoc analysis could not be performed to identify the particular factor (demographic characteristics, axis I and II psychiatric disorders and personality traits) that is characteristics for any substance of dependence. This was due to the classified groups at least one group has fewer than two cases.

RESULTS

The study included 65 patients of different age groups with a mean age of 25.7±8.3. Smoking (Nicotine) dependents represent the most prevalent (61, 93.8%). After exclusion of smoking, 55 patients (84.6%) are dependent on more than one substance. Relative frequency of substance of dependence was found to be as follows; Smoking, 93.8%; Opioids, 69.2%; Bango, 58.5%; Hashish 29.2% and Alcohol, 24.6%. The least frequent substances are Barbiturates, 16.9%; Ephedrine, 15.4%; and lastly Anticholinergics, 13.8% (Table 1).

Demographic characteristics of the studied sample:

The mean age of the studied sample is 25.7±8.3 years (Table 2). The mean duration of the illness is 4.6±3.1 years. High percentages of the total sample lie in the middle socioeconomic class (73.8%), and live in urban areas (90.8%). Also the highest percentage of the total sample was single (75.4%) and those who are currently married were 23.1%. Only 56.9 % of the sample working (either manual or mental), 21.5% are students and 21.5% not working. The highest percentage of the studied sample has secondary school education followed by illiterate and university education (43.1%; 27.7%; 9.2%) and only 13 (20%) have preparatory school education.

In categorization of the patients according to type of substance of dependence, there was no significant difference between groups. However, the alcohol dependent group appear to be the oldest one with mean age 26.7±10.5, followed by smoking 25.9±8.3 years, hashish 24.4±6.8 and barbiturates 24.3±7.4. Alcohol dependence group have the longest duration of illness 5.7±3.7 years followed by opioid 4.8±3.2 years and smoking (nicotine) 4.7±3.2 years. Inspite of no statistical significance difference between groups as regard scores at the socioeconomic scale, opioid dependent group have the highest score 151.8±57.7, which is also true as 24.4% of them belong to the high socioeconomic state. This percentage is higher than that of any group that lies in this class. There is no statistical significance in the difference between groups as regards, residence, marital status, occupation and education.

Current or lifetime prevalence of comorbid psychiatric disorder:

Lifetime prevalence or current DSM-III-R disorders without using exclusion criteria (i.e. multiple diagnoses are allowed) are presented in table (3). A total of 34 (52.3%) of the patients have comorbid axis I disorders. The prevalence of mood disorder is the highest 18.5% for mania and 16.9% for depression. The lifetime prevalence of anxiety is 7.7%, of psychotic disorder is 4.6%, and that of conduct disorder is 4.6%. As regard personality disorder, antisocial personality disorder is the highest 27.7 %, followed by borderline 15.4%; dependent 10.8%; histrionic, 9.2%; obsessive-compulsive personality disorder (4.6%) and lastly schizotypal personality (1.5%).

Between groups, statistically significant high percentages of barbiturate (54.5%, P=0.03) dependent subjects have prevalence of mania, while; there is no statistical significant difference as regard prevalence of depression, psychotic and anxiety disorders. We did not find statistical significant difference between groups as regard to personality disorders. However, antisocial personality disorder was diagnosed in 40.0% of ephedrine dependent, 34% of bango, and 33.3% of opioid and anticholinergic dependent patients. Prevalence of borderline personality disorder is
36.4% in barbiturate, 21.1% of hashish, and 15.8% in bango group patients. Lifetime prevalence of dependent personality disorder is high in barbiturate 27.3%, followed by alcohol 18.8%, Benzodiazepine 14.3% and opioid 13.3%. Other personality disorders are less frequently diagnosed.

**Personality assessment**

The total sample has a nearly similar mean score as regard neuroticism, extraversion, agreeableness, and conscientiousness. The mean score at the domain of openness to experience is slightly lower than other domain but this difference is not of statistical significance (Tables 4 & 5). The reported means of all the SIFFM domains lies at the moderate score of the trait (13-35). There is no statistical significant difference between groups of patients according to the type of substance of dependence. Most of the patients have moderate score as regard openness to experience 98.5% of the total sample, followed by extraversion 93.8%, agreeableness 93.8%, and conscientiousness 93.8%. Comparison between the groups of patient showed significant percentage of alcohol dependent patients (75%) have moderate score at neuroticism (P=0.005). Post hoc analysis showed that moderate score of neuroticism could predict alcohol dependence. Also a significant percentage (77.8%) of anticholinergic dependent patients (P=0.03) have a moderate score as regard extraversion. Post hoc analysis showed that moderate score of extraversion could predict parkinol dependence. There is no significant difference between groups as regard other domains of SIFFM domains.

### Table 1. Frequency of substance of dependence in the studied sample.

<table>
<thead>
<tr>
<th>Substance</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>61</td>
<td>93.8</td>
</tr>
<tr>
<td>Polysubstance</td>
<td>55</td>
<td>84.6</td>
</tr>
<tr>
<td>Opioids</td>
<td>45</td>
<td>69.2</td>
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<tr>
<td>Bango</td>
<td>38</td>
<td>58.5</td>
</tr>
<tr>
<td>Benzodiazepine (BZD)</td>
<td>35</td>
<td>53.8</td>
</tr>
<tr>
<td>Hashish</td>
<td>19</td>
<td>29.2</td>
</tr>
<tr>
<td>Alcohol</td>
<td>16</td>
<td>24.6</td>
</tr>
<tr>
<td>Barbiturates</td>
<td>11</td>
<td>16.9</td>
</tr>
<tr>
<td>Ephedrine</td>
<td>10</td>
<td>15.4</td>
</tr>
<tr>
<td>Anticholinergics</td>
<td>9</td>
<td>13.8</td>
</tr>
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</table>
Table 4. Mean score of the Domains of SIFFM of the studied sample.

<table>
<thead>
<tr>
<th></th>
<th>Neuroticism</th>
<th>Extraversion</th>
<th>Openness to experience</th>
<th>Agreeableness</th>
<th>Conscientiousness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean ± SD</td>
<td>Mean ± SD</td>
<td>Mean ± SD</td>
<td>Mean ± SD</td>
<td>Mean ± SD</td>
</tr>
<tr>
<td>Total sample (65)</td>
<td>23.75 ± 7.81</td>
<td>24.83 ± 5.97</td>
<td>20.69 ± 4.61</td>
<td>24.18 ± 6.77</td>
<td>22.88 ± 6.85</td>
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<tr>
<td>Smoking (61)</td>
<td>23.62 ± 7.61</td>
<td>24.48 ± 5.82</td>
<td>20.52 ± 4.52</td>
<td>24.05 ± 6.79</td>
<td>22.66 ± 6.79</td>
</tr>
<tr>
<td>Opioids (45)</td>
<td>23.18 ± 7.21</td>
<td>24.07 ± 6.04</td>
<td>20.20 ± 4.26</td>
<td>23.91 ± 7.46</td>
<td>22.71 ± 7.10</td>
</tr>
<tr>
<td>Bango (38)</td>
<td>24.29 ± 8.29</td>
<td>24.92 ± 6.10</td>
<td>20.5 ± 4.80</td>
<td>22.92 ± 7.27</td>
<td>22.34 ± 7.06</td>
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<tr>
<td>Benzdiazepine (35)</td>
<td>23.43 ± 7.80</td>
<td>25.09 ± 6.17</td>
<td>21.00 ± 4.50</td>
<td>24.89 ± 6.75</td>
<td>22.69 ± 6.95</td>
</tr>
<tr>
<td>Hashish (19)</td>
<td>22.21 ± 7.82</td>
<td>25.63 ± 6.73</td>
<td>21.58 ± 4.36</td>
<td>25.26 ± 7.45</td>
<td>24.74 ± 6.72</td>
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<tr>
<td>Alcohol (16)</td>
<td>20.94 ± 7.05</td>
<td>25.13 ± 5.51</td>
<td>19.25 ± 4.92</td>
<td>25.19 ± 7.23</td>
<td>21.63 ± 6.80</td>
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<tr>
<td>Barbiturate (11)</td>
<td>27.89 ± 6.37</td>
<td>29.00 ± 5.17</td>
<td>21.89 ± 3.66</td>
<td>27.11 ± 4.17</td>
<td>22.00 ± 5.36</td>
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<tr>
<td>Ephedrine (10)</td>
<td>24.40 ± 9.10</td>
<td>22.40 ± 5.83</td>
<td>18.70 ± 4.45</td>
<td>26.9 ± 6.04</td>
<td>21.0 ± 3.78</td>
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<tr>
<td>Anticholinergic (9)</td>
<td>23.56 ± 5.22</td>
<td>27.11 ± 8.40</td>
<td>21.67 ± 6.10</td>
<td>23.22 ± 5.02</td>
<td>22.67 ± 5.87</td>
</tr>
</tbody>
</table>

Table 5. Severity of different domains of the SIFFM in patients with substance dependent disorder.

<table>
<thead>
<tr>
<th></th>
<th>Neuroticism</th>
<th>Extraversion</th>
<th>Openness to experience</th>
<th>Agreeableness</th>
<th>Conscientiousness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean ± SD</td>
<td>Mean ± SD</td>
<td>Mean ± SD</td>
<td>Mean ± SD</td>
<td>Mean ± SD</td>
</tr>
<tr>
<td>Total (No.65)</td>
<td>5 ± 5</td>
<td>7 ± 5</td>
<td>2 ± 1</td>
<td>0 ± 0</td>
<td>1 ± 0</td>
</tr>
<tr>
<td>Moderate</td>
<td>5 ± 5</td>
<td>7 ± 5</td>
<td>2 ± 1</td>
<td>0 ± 0</td>
<td>1 ± 0</td>
</tr>
<tr>
<td>Severe</td>
<td>3 ± 3</td>
<td>5 ± 5</td>
<td>2 ± 1</td>
<td>0 ± 0</td>
<td>1 ± 0</td>
</tr>
<tr>
<td></td>
<td>0 ± 0</td>
<td>0 ± 0</td>
<td>0 ± 0</td>
<td>0 ± 0</td>
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<td>0 ± 0</td>
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</table>

DISCUSSION

The most prominent finding in this study is that 84.6% of the patients are dependent on more than one substance. Also 93.8% of the sample is smokers (Nicotine dependent). These figures are higher than that reported in Egypt by Akabawi[8]. The author reported that the majority of those who use drug for any levels are smokers and around 60% uses more than one substance at the same time. These figures represent community based epidemiological studies, not hospital based one. The author reported that epidemiological research and clinical studies in Egypt of known addicts showed that those who use more than one drug are double that number of those who exclusively use one drug. The present study is a hospital based sample patient that is not representative to the community study. Also the studied sample represents the severe form of substance use (dependence) and has high comorbidity with other

590
psychiatric disorders (52.3%). The high percentage of those who are dependent on more than one substance might be due to the susceptibility to use any substance could be generalized to other substances, and not substance specific. This could be supported by the non-significant difference among groups of patient as regard sociodemographic characteristics. In addition, the mean age of the studied sample is similar to the total and subgroups of the studied sample, which is the age at risk for developing any substance use disorder. We also found that; the mean score of personality traits, of the total sample are nearly similar to the subgroups of dependent patients with no significant difference among them. Characteristics that are associated with substance use include low self-esteem and self-confidence, need for social approval, high anxiety, low assertiveness, rebellious, low personal control and low self-efficiency.

Despite the considerable evidence for an association between personality traits and substance-use disorder in a general sense, the degree of specificity to which the traits may be differentially linked to particular classes of substances is unclear. For example, although personality traits among cocaine and heroin abusers have not been clearly distinguished, both groups have been characterized as more negative and impulsive than abusers of more socially accepted substances such as alcohol and illicit drug. In our study, significant association was found between neuroticism, alcohol dependence, extraversion, and anticholinergics dependence. This is commonly founded by other authors as alcoholics demonstrate a greater negative emotionality and impulsivity than do non-alcoholics. We did not find significant association of certain type of personality trait and other types of substance of abuse. The absence of these correlations of maladaptive personality traits, though characteristics of substance abusers in a general sense, vary in intensity to the diversity of substances used.

The axis I non-substance use psychiatric disorder prevalence observed are consistent with rates found in studies of patients participating in substance abuse treatment and are much higher than those found in surveys of the general population. Despite variation in the prevalence of specific conditions, many authors reported a relatively high population base rates for mood, anxiety, antisocial behavior, conduct comorbid with substance used disorders. The high prevalence rate of mood disorders in the present study (18.5% for Mania and 16.9% for depression) is consistent with many authors.

Failure to find significant association between specific psychiatric disorder axis I and specific substance of dependence might be due to high percentage of addicts dependent upon more than one substance, their younger age and the small number at each group.

The high prevalence of personality disorders are consistent with that found in previous studies with opioid abusers suggests that other personality disorders, especially borderline personality disorder is highly prevalent.

The finding that a high comorbidity, not only with antisocial personality but also other personality disorders were consistent with others in the United States who found that alcohol dependent had a significant association with cluster B personality disorders (Antisocial, Borderline and Histrionic PD). Also a similar result was found in Australia by Jackson and Burgess.

Although co-occurrence of drug abuse and psychiatric morbidity seems to be a frequent phenomenon, the question of whether one type of disorder precedes the other, or whether they are distinct clinical and behavioral manifestations of common underlying pathogenetic mechanism, remains in dispute.

The small number of the studied population, in a hospital based sample enable us to make meticulous examination to detect any psychiatric morbidity, but generalization of these results must be taken cautiously, because they also may represent the severe form of substance use disorder (dependent) who need the greatest help.
References

18. استمرار تقييم المستوى الاجتماعي (اقتصادي) الاستاذ الدكتور عبد الوأqb عالم الفس

591


الملخص العربي

تلازم الاعتماد على مادة مع الاضطرابات النفسية الأخرى

تتم دراسة حدوث المرض النفسي وقيم الشخصية على عينة من 65 مريضاً من الذكور. ثم جمعهم من العيادة الخارجية لقسم الأمراض النفسية مستشفى جامعة أسوان. تم تقييمهم باستخدام المقابلة الإلكترونية المقدمة للأورام النفسية والأمراض النفسية حسب التشخيص الأمريكي - الإصدار الثالث المراجع والترجمة العربية لاختبار الشخصية حسب الإصدار العربي.

وقد أظهرت النتائج أن الاعتماد على أكثر أنواع الاعتماد شيوط (93.8%)، وعند استبعاد التدخين وجد أن 84.6% من المرضى كانوا معتمدين على أكثر من مادة، وكان معدل تشخيص الاعتماد على مادة تبعاً للمواطن المستعملة كالتي: التدخين 38.9%، الأفيون وأشعة 69.2% البارد، 58.5%، مركبات النترورادين 53.8% الحشيش، 29.2% الكحوليات...

وقد أظهرت النتائج أن معدل تزامن حدوث المرض النفسي خلال العمر كان 52.3% وكان هذا معدل بنسبة 18.5% لمرض لونت الوهس، 16.9% لالتهاب، 7.7% لاضطرابات القلق، 4.6% لكل من الاضطرابات الذهنية واضطراب السلوك. وبالنسبة لاضطرابات الشخصية فقد وجد أن الشخصية المضادة للجسم تتم تقليل أعلى معدل تزامن حدوث بنسبة 27.7% يليها الشخصية الحدية 15.4% ثم الاعتمادية 10.8% والهستيري 9.2%، وكانت نسبة الشخصية الواسعة 4.6%.

وقد وجد أن معظم المرضى لديهم معدلات متوسطة للاختبار الشخصية حسب الإصدار العربي، ووجد علامة ذات دالة إحصائية بين تراكم العوامل العاطفية وارتفاع الاعتماد على الكحوليات وبدأت الملاحظات التي تشير إلى تردد تنوع معين من الاضطرابات النفسية وسمات الشخصية.