

Comparison between Heroin Addicts and Obsessive Compulsive Patients on Psychosocial and Cognitive Functions

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68 male patients were recruited randomly from a private psychiatric clinic and hospital in Cairo. They were grouped into two groups. Group A consisted of 36 heroin abusers, and Group B of obsessive compulsive patients. They fulfilled the DSM IV diagnostic criteria for both groups. For the addict group, heroin was the main drug of choice for at least the previous 6 months. Other psychiatric or neurological disorders were ruled out. A semistructured questionnaire derived mainly from the base-line record criteria of the WHO (1986) was modulated to gather relevant drug and alcohol taking data with special emphasis on three main criteria : Age, Duration of intake, and years of formal education. Tests for general cognitive and psychosocial functions were carried out. OCD patients showed significant impairment in most items compared to addicts. The difference between both groups was attributed to various factors reported in similar studies.

(Egypt.J.Psychiat. 2001, 24 : 117 - 125).

INTRODUCTION

The similarity between opiate addicts and obsessive compulsive patients particularly in the patterns of repetition, compulsivity, self-destruction and longevity led Friedman et al., (2000) to suggest that the level of obsessiveness in opioid dependence was comparable to that found in obsessive compulsive disorder (OCD) and alcohol addiction.

They found the importance of rituals to be inversely related to the number of opioid lapses during rehabilitation treatment, and to positively correlate with the number of non-drug-related OCD symptoms.

Although OCD is quite prevalent in the population, and may be as high as 1 -

2% (Myers et al., 1984), there are little epidemiological data on comorbidity. Zohar and Insel (1986) calculated that the coexistence of OCD and alcoholism should be approximately 0.34%. They cited two cases of patients with intrusive thoughts and compulsive rituals who appeared to self medicate with alcohol. Those patients described anxiolytic and antiobsessional effects of their drinking. Hesselbrock et al., (1985) suggested that for OCD alcoholism followed anxiety as the most comorbid disorder in males and females. Although the etiological relationship is not clearly demonstrated, they noted the coexisting psychopathology which usually leads to a younger age of onset of drinking. Regarding opiate addiction, Khantazian and Treece (1993) in their study of 133 subjects with opiate addiction, found 15 patients of the sample to have comorbid anxiety disorders, 3 of them with OCD. They described them to be younger,

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with less severe drug use histories and belonging to a higher socio-economic class.

Both disorders share the common features of psychosocial and cognitive impairment, though they appear to be more pronounced in OCD patients. The information available about the consequences of long-term opiate use remain unclear (Weinrieb & O'Brien, 1993). However, Ornestein et al., (2000) found heroin abusers to be impaired in learning intra-dimensional shift components and to be also impaired in some tests of spatial working memory.

Cognitive impairment in OCD patients on the other hand was extensively studied. Among the findings Clayton et al., (1999) suggested that a selective attention deficit may be involved in the symptomatology of OCD. Okasha et al., (2000) described obsessive cases as having a defective visual memory, while compulsive patients have a delayed perception of task relevant stimuli. Earlier in 1998, Purcell et al., have identified specific cognitive impairments in OCD patients on tasks of spatial working memory, spatial recognition and motor sequencing. Similar findings have led Schmidtke et al., (1999) to hypothesize that OCD patients exhibited selective deficits in tasks involving controlled attentional processing and self-guided spontaneous behavior. Veale et al., (1996) summarized the cognitive deficits in OCD as :

being easily distracted by competing stimuli ; (ii) excessive monitoring and checking the response to ensure a mistake does not occur ; and (iii) when a mistake does occur, being more rigid at setting aside the main goal and planning the necessary subgoals.

AIM OF THE STUDY

The aim of this study is to compare levels of impairment in the psychosocial and cognitive spheres in opiate addicts and patients with OCD.

To achieve this aim, we will try to :

Infer the relation between psychosocial functioning and global cognitive functions in each group.

To compare each function in the two groups.

To test the notion that addicts are less impaired than obsessives.

SUBJECTS AND METHOD

Sample

A total of "68" male patients were recruited randomly upon attendance from a private psychiatric clinic and hospital in Cairo. Group A consisted of 36 substance dependence (mainly heroin) and group B of 32 obsessive compulsive patients.

Inclusion Criteria

- . All males.
- . Can read and write
- . Fulfilling the DSM IV (APA, 1994) diagnostic criteria for both groups.

For the addiction group, the main drug of abuse was heroin for at least the previous 6 months.

.Urine free for all drugs of abuse i.e. post detoxification at the time of the interview.

. Patients consent to participate in the study.

Exclusion Criteria

- . Not fulfilling any of the inclusion criteria.
- . Dual diagnosis.

. Other psychiatric or neurological disorders.

Drop outs.

Drop outs

1. Seven patients dropped from group A, 6 because of premature discharge during the detoxification period, and one because of relapse i.e. urine screen positive for heroin.

2. Two patients dropped out from group "B" because of non compliance with the research procedure after their initial consent.

Tools

1. Drug and Alcohol taking history :

A semistructured questionnaire derived mainly from the base-line record criteria of the WHO (1986) was modulated by the investigator to gather relevant drug and alcohol taking history data, with special emphasis on three main criteria : Age, duration of intake, and years of education.

2. DSM IV (1994) Axis V : Global assessment of functioning (GAF) was used to judge the subjects highest level of functioning for at least 6 months prior to the study.

3. Checklist for testing global cognitive functions (Hodges, 1996).

The following clinical tests were used :

Alertness and general observation.

Orientation

Attention / Concentration, and digit span.

Visual memory : Anterograde & retrograde

Frontal executive functions, verbal fluency, abstraction, similarities and motor sequencing.

Comprehension

Calculation

Block design

Statistical procedures

The following statistical equations were chosen to test for the objectives of this study, namely, chi square test and the analysis of covariance (ANOVA) (Daneil, 1995). The latter was used to compare total scores across the two groups after controlling the effect of years of education.

RESULTS

Results are summarized in tables (1), (2) and (3)

Table (1) Shows the demographic correlates of both groups, their Axis V mean scores and the total scores for general cognitive function.

No significant difference was found between both groups in their mean age or duration of illness. However, the mean years of formal education was significantly higher in heroin addicts (13.7 years) than in OCD patients (11.4 years)

Heroin addicts attained significantly higher Axis V (GAF) mean score (67.3) than OCD patients (58.3), and a significantly higher mean total cognitive function score.

Table (2) shows that heroin addicts performed significantly better on all tests of cognitive functions with the exception of abstraction which was significantly impaired. On tests of attention and concentration OCD patients showed significant impairment, the same was found on tasks of verbal fluency, similarities, motor sequencing, calculation, and block design.

Table (3) : Comparison of mean total score for general cognitive function and Axis V after controlling for the number of years of education.

Table (1)
Demographic Correlations

	Mean	± S.D.	f.	df.	P-value
Age:			-0.379	58	0.706
Addict	28.5000	6.5482			
Obsessive	29.2000	7.7121			
Duration:			1.532	58	0.131
Addict	6.7667	4.7538			
Obsessive	5.0000	4.1606			
Education:			2.574	58	0.013
Addict	13.7667	3.2129			
Obsessive	11.4333	3.7846			
Axis V:			2.704	58	0.009
Addict	67.3333	12.5625			
Obsessive	58.3000	13.3032			
Total:			5.734	58	0.0005
Addict	26.4667	5.6856			
Obsessive	14.1000	4.1469			

Table (2)
General Cognitive Function

	Addicts %	Obsessive %	P-value
Orientation:			0.492
Oriented	93.3	100.0	
Not oriented	6.7	0.00	
Attention & Concentration:			0.002
a) Attentive	29	19	
Not attentive	1	11	0.0005
b) Digit Span			
	93.3	36.7	
	6.7	63.3	
Visual Memory:			0.026
Anterograde			
Intact	96.7	73.3	
Impaired	3.3	26.7	0.0005
Retrograde			
Intact	80.0	20.0	
Impaired	20.0	80.0	
Formal Expressive Function:			0.004
Verbal fluency			
Intact	43.3	10.0	
Impaired	56.7	90.0	0.002
Abstraction:			
Intact	23.3	56.7	
Impaired	40.0	40.0	
Lost	36.7	3.3	0.0005
Similarities:			
Intact	23.3	00.0	
Impaired	60.0	23.3	
Lost	16.7	76.7	0.03
Motor:			
Intact	90.0	63.3	
Impaired	10.0	36.7	0.042
Calculation:			
Intact	93.3	70.0	
Impaired	6.7	30.0	0.035
Block design			
Intact	73.3	46.7	
Impaired	26.7	53.3	

Table (3)
Comparison of Mean total Score for General Cognitive Function and Axis
V After Controlling for the Number of Years of Education

Function Total score for G. Cognitive.		df.	f.	P-value
Main effect: group	494.0	1	23.2	<0.002*
Covariate: education	224.9	1	10.5	<0.0005*
Residual	1211.2	1		

Table (3) shows that the mean total score for general cognitive function is significantly higher in the heroin abuse group after controlling for the number of years of education ($P < 0.0005$)

DISCUSSION

The aim of this study was to compare levels of impairment in the psychosocial & cognitive spheres in opiate addicts & patients with Obsessive compulsive disorder.

Patients with both disorders varied significantly on two main measures of psychosocial functions, namely years of formal education & the DSM IV (APA, 1994) Global assessment of functioning. In both measures patients with opioid dependence fared significantly better, with more mean years of formal education & a GAF score that classified them as having some mild symptoms or some difficulty in social, occupational, or school functioning, but generally functioning pretty well and having some meaningful interpersonal relationships. OCD patients on the other hand exhibited a significantly lower mean GAF score, with moderate symptoms or moderate difficulty in social, occupational or school functioning (APA, 1994). The level of psychosocial impairment in OCD patients does not seem surprising as Grabe et al., (2000) reported signifi-

cant impairment in various measures of psychosocial function and quality of life in OCD patients. This impairment even extended to patients with subclinical OCD, suggesting the marked effect of this disorder on patients lives. An effect that might as well affect the educational level of such patients.

The information available about the consequences of long-term opiate use remain unclear (Weinrieb & O'Brien, 1993). In the present study opiate users had a better GAF score and more mean years of education than OCD patients. Two explanations could be offered for this difference: First, an inherent difference between both disorders where the social deterioration level is earlier & higher in OCD, while the effect on social functioning in opiate users might be a later sequelae. Second, is Westermeyer & Specker's (1999) suggestion that social function in substance related disorders is independent of social resources, because social resources may be more dependent on premorbid accomplishments (e.g. education which is the case in this study) and/or the efforts or affiliative bonds of others rather than on current social function.

The third parameter on which both groups were compared was the global cognitive functions. Again, Obsessive patients had a significantly worse performance than opioid abuse patients. Although both groups were matched for

age and mean duration of illness, they significantly varied as mentioned above in the mean years of education. So, it was essential to examine whether the education difference was responsible for the marked variance in global cognitive functioning between the two groups.

This was done by analysis of covariance, which was used to compare mean total scores across the two groups after controlling the effect of years of education. The application of this technique is important to determine whether the difference between the two groups is attributed to differences in education. According to table (3) the mean total score for general cognitive factor was significantly higher in the opioid abuse group after controlling for the number of years of education ($P < 0.0005$).

This finding suggests that the difference between the two groups in cognitive abilities is not due to education, and hence is more likely to be related to the disorder itself. A similar suggestion was given by Purcell et al., (1998) who found that the education level of OCD patients were not associated with a decline in cognitive functioning. Instead, the pattern of cognitive deficits appear to relate specifically to the clinical features of OCD.

Opiate use patients performed significantly better on all tests of cognitive functioning with the exception of abstraction which was significantly impaired. Whether, this function is originally impaired in such patients or its affection is a consequence of the disorder is hard to verify. However, an overall summary of the persistent cognitive effects of long term drug use is usually found to yield vague & tentative information according to Weinrieb & O'Brien (1993). They proposed that this variability could be attributable to the absence of information about the base-

line cognitive capacity of the users before exposure to drugs, or to the absence of studies on pure opioid users. The sample in this study avoided the last point, where patients recruited were pure opioid users. Thus, this would strengthen the finding of impaired abstraction in such patients.

On tests of attention and concentration OCD patients showed significant impairment. Previous studies on this aspect yielded contradictory notions; Tallis et al., (1999) found that performance on the digit span for OCD patients was within the normal range as compared to controls, suggesting that powers of attention & concentration were normal in this group. However, Clayton et al., (1999) found that individuals with OCD have a relatively poorer performance on a series of psychometric tasks of selective attention including digit span. The results of this study are in accordance with Clayton et al's (1999) hypothesis that people with OCD have a diminished ability to selectively ignore competing external (sensory) and internal (cognitive) stimuli, especially intrusive thoughts.

Tests of visual memory has shown significant impairment in OCD patients in that function. Of the cognitive studies conducted to date several have reported deficits in visual memory & visuo spatial abilities in OCD (Boone et al., 1991 ; Christensen et al., 1992 ; and Okasha et al., 2000). Patients with OCD show a specific pattern of cognitive deficits related to spatial working memory and spatial recognition (Purcell et al., 1998). These results may be related to basal ganglia dysfunction as visuo spatial defects are also associated with basal ganglia lesions (Boller et al., 1984).

Another finding in this study is the significantly poorer response of patients with OCD on tasks of executive func-

tions. Significant impairment was observed on tasks of verbal fluency, similarities, motor sequencing, calculation, and block design. In accordance with Schmidtke et al., (1999) they were unimpaired at tests of abstraction. OCD patients showed deficits at timed tests of verbal & nonverbal fluency. Several other studies have also reported that patients with OCD perform timed cognitive tasks significantly slower than matched controls (Christensen et al., 1992 ; & Veale et al., 1996).

Deficits in tests of similarities, calculation and block design could point that OCD patients have a selective deficit in generating alternate strategies when they make a mistake. Veal et al., (1996) described OCD patients as spending more time than controls in generating alternate solutions or checking that the next move would be correct. These deficits on tasks of executive function may be explained according to Purcell et al., (1998) by the role of dysfunction of frontal and subcortical systems in the pathophysiology of OCD.

In conclusion, the results of this study point to :

OCD patients suffer more from psychosocial dysfunction than opiate users.

With the exception of abstraction, opiate users show significantly better functioning on various cognitive tasks.

OCD patients exhibit selective deficits in tasks involving attentional processing, visual memory, and frontal executive functions. In short, they show deficits in both acquiring and maintaining cognitive sets.

The better performance of opiate users on cognitive tasks is not the result of educational level. Rather, the poor cognitive performance is an integral part of OCD.

Lastly, it would be interesting to examine pure opioid users on cognitive tasks several years later than the mean duration found in this study (6.7 years). This would give clearer results on later sequelae of opioid use, as it might be the case that opioid use might cause later deterioration than OCD.

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الوظائف الاجتماعية والمعرفية

فى مدمنى الهيروين ومرضى الوسواس القهرى

تم اختيار ثمانية ستمين مريضاً بصورة عشوائية من عيادة نفسية خاصة ومستشفى نفسى خاص بالقاهرة، قسمت العينة إلى مجموعتين، المجموعة (أ) وتشمل ٣٦ متعاطياً للهيروين، والمجموعة (ب) وتشمل ٣٢ مريضاً بالوسواس القهرى. تم تشخيص كلا المجموعتين باستخدام الدليل الأمريكى التشخيصى والإحصائى الرابع. بالنسبة للمجموعة (أ) كان الهيروين هو المادة الأساسية للتعاطى خلال الستة أشهر السابقة على الدراسة، كما تم استبعاد أى تشخيصات نفسية أو عصبية أخرى. تم استخدام استبيان معدل من دليل منظمة الصحة العالمية للإدمان مع متعاطى الهيروين، مع التركيز على ثلاثة محاور هى: السن، طول زمن التعاطى وعدد سنوات التعليم. تم كذلك استخدام عدة قياسات أخرى للوظائف المعرفية العامة والوظائف الاجتماعية.

وأظهرت الدراسة أن مرضى الوسواس القهرى يعانون من تدهور ذى دلالة إحصائية فى الوظائف الاجتماعية والمعرفية مقارنة بمتعاطى الهيروين. وتم مقارنة النتائج بالدراسات السابقة التى أجريت على مثل هؤلاء المرضى وتناقش الدراسة الدلالات والنتائج وتقدم المقترحات والتوصيات .