

Treatment of drug addiction and psychopathology: a field study

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Abstract

Field study to assess the concurrence of the psychopathology of drug addiction, and to evaluate the efficacy of pharmacological treatment versus drug-free treatments for the psychopathology of drug addiction. A total of 261 patients treated for drug addiction, 131 on a drug-free treatment and the remaining 130 patients received a drug regime, of which 113 were, according to the Prochaska and Decrement's Transtheoretical Model, in a initial phase of the treatment (from 15 days to 6 months of treatment) and 148 in a maintenance phase in drug treatment (> 6 months), were psychopathologically assessed using the SCL-90-R (Derogatis, 2002). A field study with a 2 X 2 design (treatment: drug-free vs. drug-regime) and (treatment phase: initial phase vs. maintenance in drug treatment) was carried out. The results support the hypothesis of a dual diagnosis, that is, the comorbidity of psychopathology and drug addiction. On the whole, treatment for drug addiction had a significant impact on reducing associated psychopathology. Finally, the results are discussed in the light of the implications for the treatment of drug addiction.

Keywords: psychopathology, drug addiction, drug-free programme, antagonists, agonists, dual diagnosis.

Resumen

Nos planteamos un estudio para conocer de un modo sistemático la psicopatología entre los drogodependientes, y contrastar la eficacia de los tratamientos farmacológicos y libres de drogas sobre la psicopatología de los pacientes. Para ello tomamos 261 pacientes a tratamiento de drogodependencia, 131 en un programa libre de drogas y 130 en tratamiento farmacológico, y, de acuerdo con el Modelo Transteórico de Prochaska y Diclemente, 113 en fase de acogida (de 15 días a 6 meses en el tratamiento) y 148 en fase de permanencia en el tratamiento (> de 6 meses de tratamiento), que fueron evaluados en la psicopatología mediante el SCL-90-R (Derogatis, 2002). Se planificó un estudio de campo con un diseño 2 (tratamiento: libre de drogas vs. tratamiento farmacológico) X 2 (tiempo de tratamiento: fase de acogida vs. fase de permanencia). Los resultados mostraron un apoyo a la hipótesis de un diagnóstico dual, esto es, la coocurrencia de patología psíquica y algún tipo de dependencia; y, en general, el tratamiento de la drogodependencia tiene unos efectos significativos en la reducción de la psicopatología asociada. Finalmente, se discuten las implicaciones de los resultados para el tratamiento de la drogodependencia.

Palabras clave: psicopatología, drogodependencia, programa libre de drogas, antagonistas, agonistas, diagnóstico dual.

Introduction

The literature has systematically reported a co-occurrence between psychopathology and drug addiction (e.g., Abbot, Weller, & Walker, 1994; Cacciola et al., 2001; Fernández-Miranda et al., 2001; Krausz, Verthein, & Degkwitz, 1999; Mateu, Astals, & Torrens, 2005). Nevertheless, there is no agreement as to the underlying causes i.e., whether psychopathology is the root cause of drug addiction (Khantzian 1985), or conversely drug addiction predisposes an individual to psychopathology (Arseneault et al., 2002; Rounsaville et al., 1982). Notwithstanding, the high incidence of comorbidity between drug addiction and psychiatric disorders has led to the coining of the term “dual disorder” diagnosis to refer to the coexistence of both mental health disorders. The prevalence of this duality is high both in psychiatric populations, ranging from 30 to 50%, and among drug addicts, around 80% (Rounsaville, Weisman, Kleber, & Wilbur, 1982). The simple observation of these rates suggest that both routes are possible and compatible; that is, there is a reciprocal relationship where drug addiction can give rise to a secondary psychopathology and a psychopathology can lead to drug abuse (Arias, Padín, & Fernández, 1997).

Irrespective of the direction taken by patients to either disorder, treatment should encompass both afflictions i.e., addiction and psychopathology, if intervention is to be efficacious (Arce, Díaz, & Justo, 2003; Woody, McLellan & O’Brien, 1990), and to prevent relapse (Beleña & Báguena, 1993).

Hence the aim of the present field study was twofold: a) to systematically map the epidemiology of psychopathology among drug addicts; and b) to assess the efficacy of pharmacological and drug-free treatments on the psychopathology of patients.

Method

Participants

A total of 261 patients undergoing treatment for heroine drug abuse (though most were multi-abusers) were included for study. Of these, 131 were from “Proyecto Hombre” (57 were undergoing rehabilitation and 74 maintenance treatment), the remaining 130 patients were from Units for Attending Drug Addicts (56 undergoing rehabilitation and 74 maintenance treatment). As for gender and age, 84.6% were men and 15.4% women, and the mean age was 22.4 years. In terms of marital status, 73.5% were single, (19.8%) married or living with a partner, and (6.6%) divorced, separated or in the process of either of the two. The average age of drug initiation for alcohol, hashish, and heroine was 14, 14, and 18 years, respectively.

Procedure and design

Patients completed a sociodemographic questionnaire (e.g., age, gender), a questionnaire on the history of illicit drug abuse, criminal record, main type of illicit substance abuse, as well as being administered the SCL-90-R (Derogatis, 1977, 2002). Moreover, patient treatment files were reviewed to determine the type and duration of treatment.

The research method consisted of a quasi-experimental design in a natural environment. A 2 X 2 full factorial design with two factors (treatment type x treatment time) was used with each factor being applied two levels for psychopathology. The data for the treatment type factor, “Pharmacological Treatment” (with agonists during the rehabilitation phase and antagonists in the maintenance phase) vs. “Drug-Free Programme”, were provided by the treatment centres. The objectives of the Drug-Free Programme (DFP) were: extinction of drug-seeking behaviour, drug prevention in different social settings, restoring the patient’s health, and solving or minimizing

personal conflicts, be they interpersonal or family. The first step of the programme involved disintoxication under either or outpatient medical care prior to gradually moving towards family, occupational and social integration in drug-free environments. In the long-term, following a number of years of permanent and complete abstinence, one may speak of recovery. As for the "Pharmacological Treatment" the objectives of the Methadone Maintenance Programme (MMP) were to: wean addicts off drugs by gradually decreasing the dosage prescribed, reduce high-risk behaviour or habits, raise quality of life, encourage addicts to join rehabilitation programmes, ensure programme compliance and maintenance of abstinence, reduce programme drop-out rates, reduce antisocial behaviour, and bring about changes in attitudes and behaviour.

Although chemically unlike heroin or morphine, methadone is prescribed as substitution treatment of opioid addiction as it acts on opioid receptors and thus mimics many of the effects. Methadone is particularly indicated for addicts who have not responded to previous treatment, cases involving severe organic pathology, long-term drug abusers or for patients who are reluctant to undergo disintoxication. Further benefits derived from methadone treatment are a decrease in crime and violence resulting from the acquisition of illicit drugs, minimizing the harm of adulterated illicit street drugs, reducing the risk of contracting certain diseases such as HIV/AIDS and hepatitis as well as other diseases associated with intravenous drug usage, a fall in morbidity, and greater social control. Methadone therapy, however, is controversial and critics have argued it is simply replacing one drug addiction with another. In other words, dependency upon opioid substitutes is a result of failed medical interventions, and loss of professional integrity and ideology i.e., legitimizing and prescribing drug abuse. Nevertheless, after a six-month rehabilitation period using methadone treatment, some patients moved onto maintenance treatment i.e., the Naltrexone Maintenance Programme (NMP) based on the administration of naltrexone hydrochloride which is an opioid antagonist. The supervised use of this drug acts as a protective factor for patients and their families given that the goal is to ensure patient treatment compliance and retention, prevent the consumption of opioids, modify pernicious habits and restore health. Naltrexone is particularly indicated for patients who have previously failed to respond to DFPS.

The second factor, Patient Retention on Treatment (the data were obtained from the patient files provided by the treatment centres), was designed to determine the effects of treatment on psychopathological disorders. Two levels were codified, "Rehabilitation Stage" and "Maintenance Stage", according to the duration of the patient's retention on treatment: up to 6 months for the Rehabilitation Stage, and more than 6 months for the Maintenance Stage. In accordance with the Transtheoretical Model (DiClemente & Prochaska, 1982; Prochaska & DiClemente, 1982; Prochaska, DiClemente, & Norcross, 1992), this factor is related to "Action" stages of change whereby problematic behaviour is modified over a period that spans from 15 days to 6 months of abstinence, followed by "Maintenance" a period of maintaining the therapeutic achievements over a period time which is estimated to last "from 6 months to about 5 years".

Results and conclusions

Study of the mental health of drug addicts.

In relation to the symptom dimensions, patients in the Rehabilitation Stage, in comparison to the general population, revealed pathological indices in all of the variables assessed on the SCL-90-R: somatisation, obsessive-compulsive disorder, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoia and psychoticism (see Table 1). Likewise, the global clinical indices portray a general pathological condition (see Table 2), which underscores the need for combining drug rehabilitation with clinically efficacious treatments.

Table 1. T test for a sample on the SCL-90-R symptom dimensions (test value: mean of the general population).

Variables	t	p	M _{Rehab}	M _{GP}
Somatisation	3.346	.001	.79	.55
Obsessive-compulsive	11.151	.000	1.47	.60
Interpersonal sensitivity	8.582	.000	1.12	.45
Depression	8.607	.000	1.49	.72
Anxiety	5.854	.000	.95	.52
Hostility	7.078	.000	1.04	.45
Phobic anxiety	5.256	.000	.52	.25
Paranoid ideation	9.445	.000	1.24	.47
Psychoticism	10.167	.000	.87	.21

Note: M_{Rehab}= Mean of the drug addict group in the “Rehabilitation Stage”; M_{GP}= Mean of the general population.

Table 2. T test for a sample on the global indices of distress of the SCL-90-R (test value: mean of the general population).

Variables	t	p	M _{Rehab}	M _{GP}
Global severity index	9.222	.000	1.088	.51
Positive symptom total	10.481	.000	46.17	25.32
Positive symptom distress index	2.019	.046	2.09	1.75

Note: M_{DA}= Mean of the drug addict group in the “Rehabilitation Stage”; M_{GP}= Mean of the general population.

Furthermore, the study of cases showed that, in comparison to psychiatric populations, subjects in “Rehabilitation” exhibited a high prevalence of disorders (see Table 3). The finding highlights that patients under treatment for drug addiction are likely to have comorbid psychiatric conditions (on a par with psychiatric populations) consisting of obsessive-compulsive disorder, depression, hostility paranoid ideation. In other words, patients undergoing drug rehabilitation, besides addiction exhibit psychiatric condition characterized by: a) having thoughts, feelings and behaviours involving irresistible or impulsive drug craving that overwhelms and self-alienates the individual; b) feeling of detachment or estrangement from others, lack of motivation, interest or pleasure in life's activities, emotional numbness, affective indifference, dysphoric emotions, fatigue, and even suicidal tendencies; c) aggressive thoughts, feelings and behaviour, irritability, bitterness, anger and rage; and d) mistrust, self-centeredness, self-referential, delirious ideation, hostility, grandiosity, fear of losing control and the need for control. These emotions combined with the effects of treatment further aggravate the psychiatric disorders e.g., obsessive-compulsive and depressive symptomatology but not hostility and paranoid ideation. Once again, these findings underscore the need for implementing integrated treatment for the management of both addictive behaviour and associated pathologies.

Table 3. Percentage of clinical cases in the “Rehabilitation Stage” group and t test for a sample of the “Rehabilitation Stage” group on the SCL-90-R symptom dimensions (Test value: mean of the psychiatric population).

Variables	%cc	M _{PP}	t	p
Somatisation	13.46	1.67	-12.23	.000
Obsessive-compulsive	44.23	1.42	.7	.487
Interpersonal sensitivity	14.42	1.89	-9.79	.000
Depression	37.5	1.61	-1.27	.207
Anxiety	20.19	1.64	-9.25	.000
Hostility	32.69	1.18	-1.9	.092
Phobic anxiety	13.46	1.04	-9.78	.000
Paranoid ideation	43.26	1.33	-1.06	.291
Psychoticism	33.65	1.03	-2.42	.017

Note: %CC= Percentage of clinical cases in the drug addict group; MPP= Mean of the psychiatric population.

Analysis of the effects of the treatment in the psychopathology.

Significant multivariate differences were found for psychopathology as measured by the factor “treatment time” (“Rehabilitation Stage” versus “Maintenance Stage), $F_{\text{multivariate}}(9,247)= 4.011$; $p < .01$; $\eta^2 = .128$. Thus, the stabilization of drug addiction treatment had effects on psychopathology and explained 12.8% of it.

As for the univariate effects (see Table 4), patients in “Rehabilitation Stage” presented more symptomatology “obsessive–compulsive”, “depressive” and “psychotic” than those in the Maintenance Stage. In other words, patients in the “Rehabilitation Stage” had more thoughts, feelings and behaviours involving irresistible or impulsive drug craving that overwhelm and self-alienate the individual e.g., symptomatology of repetitive unpleasant thoughts that one cannot get rid off, feeling of being powerless or incapable of doing things; difficulty in remembering things; worried about tidiness and neglected appearances; obsessive thoughts; impaired mental capacity or function. Moreover, patients in the “Rehabilitation Stage” exhibited more depressive symptoms than patients Maintenance Stage i.e., feeling of detachment or estrangement from others, lack of motivation, interest or pleasure in life's activities, emotional numbness, affective indifference, dysphoric emotions, fatigue, and even suicidal tendencies. Examples of this symptomatology are: lack of sexual appetite, feelings of loneliness, crying, sadness or lack of energy. Finally, patients in the “Rehabilitation Stage” had more psychotic pathologies than those on maintenance treatment i.e., isolation, schizoid way of life, social introversion, hallucinations and disordered thoughts which are linked to a negative self-evaluation confounded by a sense of personal underachievement. Examples of psychotic symptomatology were: the belief that someone was controlling their thoughts; hearing voices that others did not hear; feeling distant to other people; feeling lonely even in the company of other people. Hence, the data lend support to our hypothesis that treatment for drug addiction reduces concomitant psychopathological disorders. In addition, this hypothesis has two further considerations. First, drug addiction produces psychic as well as social and personal injury, which runs counter to the claim that psychological disorders induce drug addiction. Second, traditional drug addiction treatments as well as the evaluation of drug addicts must be combined with specific diagnosis and treatment of associated pathologies. In our study subjects beginning rehabilitation treatment exhibited a significant comorbid clinical condition in practically all of the clinical indices but did not receive combined treatment.

Table 4. Univariate effects in psychopathology by the en la patología terciados por el factor “permanencia en el tratamiento”

Variable	SS	F	p	η	M _{Rehab}	M _{Main}
Somatisation	.558	1.064	.303	.004	.775	.871
Obsessive-compulsive	4.541	6.595	.011	.025	1.472	1.2
Interpersonal sensitivity	.320	.561	.455	.002	1.124	1.052
Depression	4.327	6.142	.014	.024	1.468	1.202
Anxiety	.0045	.008	.928	.000	.931	.923
Hostility	1,560	2.515	.114	.010	1.023	.864
Phobic anxiety	.07469	.205	.651	.001	.524	.559
Paranoid ideation	.310	.263	.609	.001	1.232	1.303
Psychoticism	2.060	4.667	.032	.018	.871	.688

Note: $df(1,255)$. M_{Rehab}= Mean of the “Rehabilitation Stage” group; M_{Main}= Mean of the “Maintenance Stage” group.

Likewise, the 2 X 2 MANOVA showed a multivariate significant effect for psychopathology explained by the factor “type of treatment” (“Drug Free Programme” vs. “Drug Treatment”), $F_{\text{multivariate}}(9,247)= 2.167$; $p < .05$; $\eta^2 = .073$. Nonetheless, no univariate differences were observed in the different variables constituting psychopathology (see Table 5).

Table 5. Univariate effects on the psychopathology by the factor “type of treatment” (“Drug Free Programme” vs. “Pharmacological Treatment”)

Variable	SS	F	p	η	M _{DFP}	M _{PT}
Somatisation	.519	.990	.321	.004	.869	.777
Obsessive-compulsive	1.782	2.589	.109	.010	1.421	1.251
Interpersonal sensitivity	.420	.736	.392	.003	1.046	1.251
Depression	.190	.269	.392	.003	1.363	1.307
Anxiety	.076	.140	.709	.001	.944	.909
Hostility	1.560	2.515	.727	.000	.961	.926
Phobic anxiety	.354	.974	.325	.004	.579	.503
Paranoid ideation	.0066	.006	.941	.000	1.262	1.272
Psychoticism	1.391	3.151	.077	.012	.705	.855

Note: $df(1,255)$. M_{DFP}= Mean of “Drug-Free Programme” group; M_{PT}= Mean of “Pharmacological Treatment” group.

In relation to the interaction between “type of treatment” and “treatment time”, the MANOVA revealed significant multivariate differences, $F_{\text{multivariate}}(9,247)= 3.012$; $p < .01$; $\eta^2 = .099$. The univariate effects (see Table 6) revealed a significant interaction of the variables “somatisation” and “anxiety”. Succinctly, patients under “Drug Treatment” had reduced somatisation effects during treatment maintenance i.e., naltrexone acted as a somatisation control agent whereas patients on the Drugs Free programme had increased somatisation during treatment maintenance. The same pattern was observed for the variable anxiety i.e., greater levels of anxiety for Drug Free Treatment patients than “Drug Treated” patients during the maintenance stage (i.e., Methadone followed by Naltrexone). Thus, “Drug Treatment” was observed to reduce associated psychopathology whereas Drug Free Treatment was found to favour psychopathological manifestations.

Table 6. Univariate effects for the interaction between the type of treatment” and “treatment time” factors.

Variable	SS	F	p	η		M _{Rehab}	M _{Main}
Somatisation	3.784	7.222	.008	.028	M _{DFP}	.697	1.041
					M _{PT}	.854	.701
Obsessive-compulsive	.797	1.158	.283	.005	M _{DFP}	1.500	1.342
					M _{PT}	1.444	1.058
Interpersonal sensitivity	.608	1.065	.303	.004	M _{DFP}	1.132	.061
					M _{PT}	1.115	1.143
Depression	1.739	2.469	.117	.010	M _{DFP}	1.411	1.314
					M _{PT}	1.524	1.091
Anxiety	3.001	2.469	.020	.010	M _{DFP}	.838	1.051
					M _{PT}	1.024	.795
Hostility	.775	1.250	.265	.005	M _{DFP}	.985	.938
					M _{PT}	1.062	.790
Phobic anxiety	.296	.814	.368	.003	M _{DFP}	.597	.562
					M _{PT}	.451	.556
Paranoid ideation	2.297	1.949	.164	.008	M _{DFP}	1.130	1.394
					M _{PT}	1.334	1.211
Psychoticism	.0166	.038	.846	.000	M _{DFP}	.804	.605
					M _{PT}	.938	.772

Note: $df(1,255)$. M_{Rehab}= Mean of the group in the “Rehabilitation Stage”; M_{Main}= Mean of the “Maintenance Stage” group; M_{DFP}= Mean of the “Drug Free Programme” group; M_{PT}= Mean of the “Pharmacological Treatment” group.

Discussion

Caution should be exercised in the interpretation of the results of this study prior to attempting to extrapolate or generalize them to other populations. We may identify at least three limitations regarding the validity of our results. First, the data obtained for the “Drug Free Programme” does not correspond with the heterogeneous treatments administered in other centres in Spain (e.g., Reto, Amanecer, Renacer, UADs). Second, the measurement instruments used restrict the results to the variables assessed thus the comparison with other studies is limited and the results obtained with these instruments cannot be generalized to other samples or contexts. Thirdly, the measurement technique was based on self-reports that are well known to lend themselves to data distortion (e.g., social desirability) which may be further amplified by the particular characteristics of the population under study. Bearing in mind the aforementioned limitations, we may conclude that:

- a) The comparison of the clinical condition of patients undergoing treatment for drug addiction with that of the general or psychiatric populations corroborates the hypothesis of a dual diagnosis (calculated to be in the range of 80% among substance abusers) i.e., the co-occurrence of drug addiction and psychopathology (Khantjian & Treece, 1985; Rounsaville et al., 1982). Moreover, though the prevalence of different types of psychopathologies tend to vary according factors such as the type of substance abused, gender, and socioeconomic status, opiate addicts have the highest rates of comorbidity (Blaszczynski, Steel, & McConaghy, 1997; Calsyn, Fleming, Wells, & Saxon, 1996; Goldstein, 1995;- Gutiérrez et al., 1998; Miller, 1995, 1996; Sánchez-Hervás, Gradoli, & Morales, 2001; San Narciso et al., 1998; Sánchez-Hervás, Tomás, & Climent, 1999; Wojnar et al., 1997). In this study the clinical profile of the patients was assessed in relation to the following variables: somatisation, obsessive-compulsive disorder, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoia and psychoticism. Hence, as drug addicts exhibit a varied symptomatology, further research is required to determine the variables that may establish the differential clinical outcomes. Furthermore, the prevalence of severe pathologies (i.e., levels similar to psychiatric populations), has been related to antisocial behaviour (e.g., Chen et al., 1999) psychoticism (e.g., Brooner et al., 1997), anxiety (Darke

& Roos, 1997) depression (Regier et al., 1990), and in our study to obsessive-compulsive disorders, depression, hostility, and paranoia.

- b) From the perspective of clinical treatment, the association between drugs and psychopathology implies a poorer prognosis: greater number of relapses, increase in the number hospital admittances, greater risk of suicide, violence, difficulties with employment and social relationships, and higher rates of HIV infection (Arias, Padín, & Fernández, 1997; Brooner et al., 1997; Cacciola et al., 1996; Drake et al., 1989; Gerstley et al., 1990; Kosten et al., 1989; McLellan, 1986; Ravndal & Vaglum, 1991). Bearing in mind that patients undergoing treatment for drug addiction also experience associated psychopathologies, one would expect that rehabilitation would clearly aid the improvement of psychopathological conditions if management of both pathologies involves combined treatment (Woody, McLellan, & O'Brien, 1990). Our results reveal that treatment, in general, had indirect effects on psychopathology (it should be noted that they were not the direct or overt objectives of treatment) by contributing to the improvement of the individual's clinical condition, particularly in relation to symptomatology associated to obsessive-compulsive disorder, depression and psychoticism. This finding may be explained in terms of two hypothesis that are not mutually exclusive but rather complementary: most treatment drop-outs had high levels of psychopathology, primarily psychotics (Meyer, 1986), or due to the positive effects of rehabilitation treatment itself (Rounsaville & Kleber, 1986). Notwithstanding, the effects vary according to the treatment applied i.e., the psychopathological condition of "DFP" patients is less severe than those on "Drug Treatment", and during the course of treatment their clinical disorders surface, in particular anxiety and somatisation. Deductively, "DFP" patients are in a better clinical condition which may be due either to the program selection process or as a result of patient's positive willingness and own personal choice. Nevertheless, this finding does not necessarily entail a real improvement in the clinical condition of patients undergoing treatment with antagonists and agonists as it is well known that they disguise clinically significant symptomatology (Casas, 1995; Casas et al., 1992). Thus, the results, regardless of the effects of treatment type and its interaction with programme retention, clearly underscore the need for integrated treatment programmes combining treatment for both drug addiction and clinical pathologies, be these intrinsic to the patient or generated by drug addiction. Otherwise, and in line with the Transtheoretical Change model (DiClemente & Prochaska, 1982; Prochaska & DiClemente, 1982; Prochaska, DiClemente, & Norcross, 1992), the probability of relapse will be greater.

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