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ORIGINAL ARTICLE

Dual Diagnosis and Suicide Risk in a Spanish Outpatient Sample

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The present study compares dual-diagnosis patients with other groups of psychiatric patients to determine the differential characteristics in suicide risk and other clinical variables between them. During 2008 in Madrid, 837 outpatients were evaluated in addiction and mental health services. Three comparison groups were created according to current diagnosis: (i) dual patients, (ii) patients with substance use disorders but no other mental disorders, and (iii) patients with mental disorders but no substance use disorders. A multinomial logistic regression model was built to explore the risk associated with dual diagnosis. Criteria for dual diagnosis were met at the time of the study by 440 patients (52.6%). Dual patients showed several demographic and clinical differences and a higher risk for suicide than the other two comparison groups. Further research is needed to define suicide preventive strategies for dual patients.

Keywords substance abuse, comorbidity, mental disorders, suicide, dual diagnosis

INTRODUCTION

The comorbidity of substance use disorders (SUDs) with other psychiatric disorders (PDs), known as dual diagnosis (DD), is frequent. Population surveys have reported rates around 50% for lifetime comorbidity (Kessler et al., 1996; Regier, Farmer, & Rae, 1990), and higher numbers have been found in treatment samples (Kessler, 2004; Weaver et al., 2003).

According to epidemiological research, PDs contribute to the development of SUD in DD patients just as SUDs contribute to the development of PD (Compton, Thomas, Conway, & Colliver, 2005; Kessler, 2004). However, most studies report PDs to precede SUDs (Frisher, Crome, Macleod, Millson, & Croft, 2005; Merikangas et al., 1998), though findings vary depending on the specific disorders involved (Compton, Thomas, Stinson, & Grant, 2007; Glantz et al., 2009). In real practice, overlapping symptoms are often difficult to disentangle until the case has substantially progressed. A further problem is the duplicity of services of care for addiction and mental health disorders in many countries (Baldacchino, 2007; Weaver et al., 2003). Both factors result in a shortage of specialized treatment for DD patients. Yet, failure to detect and treat this syndrome can jeopardize a patient's chance of success (Kessler et al., 1994). DD has been associated with poor health, neuropsychological impairment, HIV infection, hepatitis, social dysfunction, violence, poverty, and poor treatment outcome (Grant, 1995; Weaver et al., 2003). Moreover, comorbid substance misuse was overrepresented in a sample of patients with mental disorders who committed suicide (Appleby et al., 1999), and the association of depression and alcoholism is a well-known risk factor for suicide (Cornelius et al., 1995).

We present here a multicenter study based on a treatment sample ($n = 837$) in Madrid. We aim to explore the prevalence and clinical characteristics, particularly the suicide risk, of patients with DD when compared with other groups of psychiatric patients.

This study was conducted by the Sociedad Española de Patología Dual and supported by Instituto Adicciones, Agencia Antidroga, Oficina Regional de Salud Mental de Madrid and Obra Social de Caja Madrid.
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METHODS

Recruitment

The target population was consecutively recruited and evaluated by their own therapists in outpatient addiction and mental health centers in Madrid during the year 2008. The interviewers (81 psychiatrists, psychologists, or general physicians) worked in specific centers for the treatment of drug abuse (64/81) or mental health centers (17/81). All interviewers received training in the administration of structured interviews. After a description of the procedure and the objectives of the study by their attending therapists, all participating subjects gave written informed consent as approved by the Institutional Review Board of the Gregorio Marañon Hospital in Madrid. Access to public health care, which is financed by taxes, is free in Spain. The rate of participation was 87.2%.

Instruments

All information was obtained using a questionnaire that included screening questions and validated scales. Interviews lasted approximately 1 hour. Patients were specifically questioned about HIV, hepatitis infections, and suicide risk. Substances were classified as tobacco, alcohol, cannabis, opioids, cocaine, other stimulants, tranquilizers, hallucinogens, or inhalants. Current Axis I mental disorders were assigned according to the Mini International Neuropsychiatric Interview (MINI; Sheehan et al., 1998) for the last month. Axis II disorders were assessed through the Spanish version of the Personality Diagnostic Questionnaire-4+ (PDQ-4+; Calvo Pinero et al., 2002). In this study, DD was defined as the concurrent presence of any SUD diagnosis (excepting nicotine) and any other Axis I diagnosis according to the MINI or any Axis II diagnosis according to the PDQ-4+. Successive comorbidity was not considered. For clarity, Axis I disorders other than SUDs were grouped into three categories in agreement with the *International Classification of Diseases 10th Revision* (ICD-10; World Health Organization, 1992): (i) anxiety disorders, (ii) affective disorders, and (iii) psychotic disorders.

Data Analysis

Comparisons were established between three groups of patients according to the current diagnosis: DD group ($n = 440$), patients with SUDs but no PDs (SUD group; $n = 141$), and patients with PDs but no SUDs (PD group; $n = 208$). DD patients were the reference group. Patients with no current mental disorder ($n = 48$) were not included. The Statistical Package for the Social Sciences (SPSS version 17.0) was used for all statistical procedures. Chi-square (χ^2) and analysis of variance (ANOVA) tests were used to compare categorical and continuous variables, respectively. The significance level was set at $\alpha = 0.05$ (two sided). A multinomial logistic regression model was built to examine the role of demographic and clinical characteristics in discriminating the study groups. Factors included were gender, marital and working status, coexistence, educational level, hepatitis, HIV, suicide risk, and personality clusters. Age was included as a covariate. Nonsignificant variables were removed through stepwise backward elimination.

RESULTS

Sample Description ($n = 837$)

The mean age of the participants at the time of the assessment was 38.4 years (SD = 10.1). They were mostly assessed in addiction treatment centers (629/837; 75.1%) and there was a majority of men (73.9%). The definition of DD was met at the time of the study by 440 patients (52.6%). Lifetime DD was found in 58.5% of the sample (67.4% in addiction centers). The mean number of substances was 1.74 (SD = 0.84) among substance users (578/837). Substances commonly used were alcohol and cocaine (23.9%), alcohol alone (18.5%), or cocaine alone (15.7%). The most frequent non-SUD Axis I diagnoses were major depression (25.0%), panic disorder (21.4%), and bipolar disorder (20.3%). Sixty-one DD patients (14.1%) and 18 non-DD patients (4.5%) had an Axis II but no Axis I diagnosis (excluding SUDs).

DD Group Versus PD Group

DD patients were younger, more frequently males, and lived more often alone or with their family of origin than PD patients (Table 1). They presented lower rates of university studies. PD patients endorsed being married, unemployed, or disabled more often. DD patients were more frequently followed in addiction treatment centers ($\chi^2 = 241.9$; degree of freedom [df] = 1; $p < .001$), received psychotherapy more frequently, and were more often diagnosed with multiple Axis I disorders (different than SUDs), anxiety disorders, and Clusters A and B personality disorders (Table 2). PD patients were more likely to present noninfectious medical conditions and to receive psychopharmacological treatment. DD patients were more likely to report hepatitis (Odds ratio [OR] = 1.78) and suicide risk (OR = 2.15; Table 3).

DD Group Versus SUD Group

Few demographic differences were found (Table 1). SUD patients were less often disabled and less likely to present noninfectious medical conditions and to be treated with psychotropic drugs. DD patients were more likely to endorse suicide risk (OR = 14.6) compared with SUD patients, but were less likely to report a history of hepatitis infection (OR = 0.6; Table 3).

DISCUSSION

The main finding of this study was the increased suicidal risk associated with DD in contrast with other psychiatric patients, particularly compared with SUD patients with no comorbid mental disorders. The suicidal risk associated with DD had already been described (Kessler, 2004). In fact, DD patients frequently present several risk factors for suicide: male gender, mental disorder, substance abuse, or social dysfunction. However, the few studies that

TABLE 1. Demographic and clinical characteristics of patients with and without dual diagnosis (DD), substance use disorders (SUDs), and other psychiatric disorders (PDs)

	DD patients ($n = 440$)	SUD patients ($n = 141$)	Stats[a]	df	p	PD patients ($n = 208$)	Stats[a]	df	p
Age (years)	36.5 ± 8.9	37.6 ± 8.7	1.53	1	.216	42.8 ± 12.2	54.4	1	.000
	n (%)	*n* (%)				*n* (%)			
Gender[b]	343 (79.4)	131 (89.1)	6.97	1	.008	102 (49.3)	60.1	1	.000
Marital status[b]									
Single	253 (60.2)	81 (55.1)	2.22	2	.328	95 (45.9)	13.9	2	.001
Married	97 (23.1)	43 (29.3)				75 (36.2)			
Divorced/widowed	70 (16.7)	23 (15.6)				37 (17.9)			
Coexistence[b]									
Alone	69 (16.0)	15 (10.2)	3.43	4	.489	31 (15.0)	12.4	4	.015
Own family	122 (28.3)	47 (32.0)				83 (40.1)			
Family of origin	195 (45.2)	70 (47.6)				68 (32.9)			
Institution	12 (2.8)	5 (3.4)				9 (4.3)			
Others	33 (7.7)	10 (6.8)				16 (7.7)			
Education[b]									
Illiterate	6 (1.4)	0 (0)	2.14	3	.542	6 (2.9)	22.2	3	.000
Primary	199 (46.6)	71 (48.0)				73 (35.6)			
Secondary	172 (40.3)	59 (39.9)				74 (36.1)			
University	50 (11.7)	18 (12.2)				52 (25.4)			
Working status[b]									
Employed	186 (43.2)	80 (54.1)	9.81	3	.020	42 (20.3)	32.4	3	.000
Unemployed	152 (35.3)	52 (35.1)				111 (53.6)			
Disabled	53 (12.3)	8 (5.4)				39 (18.8)			
Others	40 (9.3)	8 (5.4)				15 (7.2)			
Suicide risk									
Present	177 (40.9)	7 (4.7)	66.6	1	.000	52 (25.1)	15.1	1	.000
Mild	110 (62.9)	6 (85.7)	2.28	2	.319	33 (64.7)	.72	2	.696
Intermediate	22 (12.6)	1 (14.3)				8 (15.7)			
Severe	43 (24.6)	0 (0)				10 (19.6)			
Medical conditions									
HIV	39 (9.0)	16 (10.8)	0.41	1	.518	14 (6.8)	0.92	1	.335
Hepatitis	91 (21.0)	40 (27.0)	2.28	1	.131	28 (13.5)	5.19	1	.023
Noninfectious diseases	70 (15.9)	12 (8.5)	4.82	1	.028	51 (24.5)	6.89	1	.009
Treatment									
Psychotropic drugs	334 (76.1)	79 (56.0)	20.93	1	.000	188 (90.4)	18.52	1	.000
Psychotherapy	385 (88.9)	127 (90.1)	0.14	1	.701	129 (63.5)	57.37	1	.000

[a]One-way ANOVA was used to compare age between the groups; χ^2 was used for all other comparisons.
[b]Information was missing for two subjects on gender, for 14 subjects on marital status, for three subjects on coexistence, for eight subjects on education, for two subjects on working status, and for three subjects on medical history.

TABLE 2. Current differences in psychopathology between dual-diagnosed patients (DD) and patients with other psychiatric disorders (PD)

Diagnosis	DD patients, *n* (%)	PD patients, *n* (%)	χ^2	df	p
Axis I					
Single Axis I diagnosis[a]	150 (40.3)	110 (58.2)	16.1	1	.000
Multiple Axis I diagnoses[a]	222 (59.7)	79 (41.8)			
Any affective disorder	273 (63.0)	127 (61.4)	0.17	1	.678
Any anxiety disorder	250 (57.7)	99 (47.8)	5.54	1	.019
Any psychotic disorder	47 (10.9)	29 (14.0)	1.33	1	.248
Axis II					
Single Axis II diagnosis	85 (29.4)	39 (31.5)	0.17	1	.678
Multiple Axis II diagnoses	204 (70.6)	85 (68.5)			
Any personality disorder	289 (66.7)	124 (59.9)	2.86	1	.091
Any Cluster A PD	142 (32.8)	49 (23.7)	5.56	1	.018
Any Cluster B PD	176 (40.6)	58 (28.0)	9.63	1	.002
Any Cluster C PD	176 (40.6)	86 (41.5)	0.04	1	.829

[a]Excluding SUDs (substance use disorders).

TABLE 3. Odds ratios for the group of dual-diagnosed patients (DD) when compared with the SUD (substance use disorders) and PD (other psychiatric disorders) groups

Group	Odds ratio	95% CI[a]	*p*
DD vs. PD			
Age	1.06	1.04–1.08	.000
Gender	0.28	0.19–0.41	.000
Hepatitis	1.78	1.08–2.91	.022
Suicide risk	2.15	1.44–3.21	.000
DD vs. SUD			
Age	1.01	0.99–1.03	.294
Gender	1.98	1.10–3.59	.023
Hepatitis	0.60	0.37–0.98	.040
Suicide risk	14.64	6.65–32.22	.000

[a]CI: confidence interval.

have compared the suicidal risk of DD patients with other groups of patients were focused on specific populations or disorders (Cornelius et al., 1995; Lukasiewicz et al., 2009). The increase in suicidal risk among DD patients is especially important when their age is considered. Therefore, preventive measures likely to reduce suicide among young people should be considered for DD patients (Hunt et al., 2006). Interestingly, in our sample, two clusters of personality disorders (A and B) were associated with DD patients. It seems reasonable to hypothesize that specific personality traits could be related to the increased suicidal risk in this population, although further research is needed.

The prevalence of DD in our sample (52.6%) was in the high range of previous epidemiological surveys across different treatment settings in Spain (27%–49%; Gual, 2007) and other countries in Europe or North America (2%–83%; Kessler, 2004). This finding might be explained by the use of structured instruments and the inclusion of Axis II diagnoses in the definition of DD. Excluding Axis II diagnoses would decrease DD prevalence in our study to 44.4%. DD patients are at a higher risk of worse outcomes (Weaver et al., 2003), and there might be a lack of awareness of their treatment needs (Baldacchino, 2007; Grella & Hser, 1997; Ouimette et al., 2007). In our sample, although they endorsed suicide risk and history of hepatitis infection more often than the other groups, noninfectious medical conditions were more common among patients without comorbid substance use, maybe due to their older age. Of note, patients manifesting SUDs (DD and SUD groups) were more likely to receive psychotherapy but less likely to receive psychopharmacological treatment than patients diagnosed as manifesting other PDs (PD group). These findings go in line with the evidence demonstrating that forms of psychotherapy, such as cognitive behavioral therapy or psychoeducation, are efficacious in improving outcomes in DD patients (Hides, Samet, & Lubman, 2010; Pawsey & Castle, 2006).

We used a descriptive approach and an inclusive definition of DD. However, this definition has not been consensualized and therefore comparability with other studies is limited. The major strength of this paper is the use of structured instruments of assessment. Contrary to previous studies that mostly used self-report measures and a longer interval to evaluate substance use or substance abuse as a diagnosis (6–12 months), our study is based on current diagnoses (last month) given by the professionals expected to have a better knowledge of the patients. It has also been made in a variety of public health services to avoid biases conveyed by the clinical setting. We expect therefore that it may reflect concurrent comorbidity in real practice conditions.

This study describes the differential features between DD patients and other psychiatric patients, which may imply also diverse healthcare needs. Suicidal risk is one of such features. Further research is needed to define suicide preventive strategies for DD patients.

Declaration of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

RESUME

Pathologie duale et risque de suicide parmi des patients espagnoles en consultation

Cette étude compare des patients présentant une pathologie duale avec d'autres groupes de patients psychiatriques en vue de d'étudier le risque suicidaire et les autres variables cliniques propres à chaque groupe. 837 patients vus en consultation ont été évalués par les services de santé mentale et addictions de Madrid pendant l'année 2008. Trois groupes de comparaison ont été crées selon le diagnostique actuel : patients avec pathologie duale, patients avec abus de substances sans d'autres troubles mentaux, patients avec troubles mentaux sans abus de substances. Un modèle de régression multinomial a été construit pour explorer le risque associé au diagnostique de pathologie duale. 440 patients présentaient au moment de l'étude les critères de diagnostique de pathologie duale (52,6%). Par rapport aux autres groupes, Les patients avec pathologie duale présentaient de nombreuses différences démographiques et cliniques, et particulièrement un risque augmenté de suicide. De nouvelles études sont nécessaires pour établir des stratégies de prévention du suicide parmi ces patients.

RESUMEN

Patolología dual y riesgo de suicidio en una muestra española de pacientes ambulatorios

Este estudio compara pacientes con patología dual y otros grupos de pacientes psiquiátricos en relación al riesgo suicida y otras variables clínicas. 837 pacientes en tratamiento ambulatorio fueron evaluados en los servicios de salud mental y de atención a adicciones de Madrid durante el año 2008. Se crearon tres grupos de comparación de acuerdo al diagnóstico actual: pacientes duales, pacientes con abuso de sustancias pero sin otros

trastornos mentales, y pacientes con trastornos mentales pero sin abuso de sustancias. Se construyó un modelo de regresión logística multinomial para explorar el riesgo asociado con el diagnóstico de patología dual. 440 pacientes cumplían en el momento del estudio los criterios para el diagnóstico de patología dual (52,6%). Los pacientes duales mostraron diversas diferencias en factores demográficos y clínicos, y un mayor riesgo de suicidio que los grupos de comparación. Es necesario continuar investigando para definir posibles estrategias de prevención del suicidio en estos pacientes.

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GLOSSARY

Dual diagnosis: This term describes the comorbid combination of a mental illness and substance use disorder, also known as concurrent disorders.

Multinomial logistic regression: This statistical model is a generalization of logistic regression applied when the categorical-dependent outcome has more than two levels. It is used to classify elements (subjects) according to the values of a set of predictor variables.

Substance use disorder: A disorder characterized by a pattern of continued pathological use of drugs; it comprises the terms of abuse and dependence.

Suicide risk: The probability that someone will initiate any action with intention of ending one's life.

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