Salud Mental 2013;36:471-479
ISSN: 0185-3325
DOI: 10.17711/SM.0185-3325.2013.057

Comorbidity of substance use disorders with other psychiatric disorders in Mutual-Aid Residential Treatment Centers

Rodrigo Marín-Navarrete,[1] Corina Benjet,[2] Guilherme Borges,[2] Angélica Eliosa-Hernández,[1] Ricardo Nanni-Alvarado,[3] Marcos Ayala-Ledesma,[1] José Fernández-Mondragón,[1] María Elena Medina-Mora[4]

Original article

SUMMARY

The comorbidity of substance use disorders with other mental disorders has an important prevalence; it has been reported that it is higher in psychiatric treatment centers (20-50%) and addiction treatment centers (50-75%) as compared to the open population. A modality of Mutual-Aid for addiction treatment that is common in Mexico, is the one provided by rehabilitation homes and residential centers, also known as "anexos" in Spanish. The objective of this study was to estimate the prevalence of comorbidity of substance use disorders with other psychiatric disorders through a sample of male participants who were on Residential Centers of Mutual-Aid for Addictions Treatment (RCMAAT). A total of 535 participants was obtained, of which 346 fulfilled the inclusion requirements and were evaluated. The diagnostic evaluation of substance use disorders and comorbid psychiatric disorders was made with the World Mental Health Composite International Diagnostic Interview (WMH-CIDI). The results showed that 75.72% fulfilled the diagnostic criteria for a comorbid psychiatric disorder, with the prevalence of the attention deficit and emotionally disturbed behavior disorders, followed by anxiety disorders, separation anxiety disorders, affective disorders, impulse control disorders, and less frequently, eating disorders. In most cases (83.59%) comorbid psychiatric disorders preceded the addictive disorders. This study constitutes a contribution that can be considered for future proposals in public politics, which are to be translated into actions to offer services that comprehensibly treat addictions and psychiatric disorders.

Key words: Addictions, comorbidity, psychiatric disorders, treatment centers.

RESUMEN

La comorbilidad de los trastornos por consumo de sustancias con otros trastornos mentales presenta una importante prevalencia; se ha reportado que ésta es mayor en los centros de tratamiento psiquiátrico (20-50%) y para las adicciones (50-75%) en comparación con la población abierta. Una modalidad de Ayuda-Mutua para la atención de las adicciones común en México es la de los Centros Residenciales y Casas de Recuperación para las adicciones, también llamados "anexos". El objetivo del estudio fue estimar la prevalencia de comorbilidad de los trastornos por consumo de sustancias con otros trastornos psiquiátricos en una muestra de participantes de sexo masculino adscritos a los Centros Residenciales de Ayuda-Mutua para la Atención de las Adicciones (CRAMAA). Se captó a un total de 535 participantes, de los cuales 346 cumplieron los criterios de inclusión y fueron evaluados. La evaluación diagnóstica de los trastornos por uso de sustancias y los 17 trastornos psiquiátricos comórbidos se realizó con la Entrevista Internacional Diagnóstica Compuesta (WMH-CIDI). Los resultados mostraron que 75.72% cumplía con criterios diagnósticos para algún trastorno psiquiátrico comórbido, siendo los más prevalentes los trastornos por déficit de atención y comportamiento perturbador, seguidos por los trastornos de ansiedad, la ansiedad por separación, los trastornos afectivos, los trastornos por control de impulsos y con menor frecuencia los trastornos de la conducta alimentaria. En la mayoría de los casos (83.59%), los trastornos psiquiátricos comórbidos precedieron a los trastornos adictivos. Este estudio constituye una aportación que puede considerarse para futuras propuestas en políticas públicas, que se traduzcan en acciones para ofertar servicios que atiendan las adicciones y los trastornos psiquiátricos de manera integral.

Palabras clave: Adicciones, comorbilidad, trastornos psiquiátricos, centros de atención.

Translation of the original version published in spanish in: Salud Mental 2013, Vol. 36 Issue No. 6.

[1] Unit of Clinical Trials in Addictions and Mental Health. Subdirectorate of Clinical Research (INPRFM).
[2] Head of National Institute of Psychiatry Ramón de la Fuente Muñiz (INPRFM).
[3] National Center for the Prevention and Control of the Addictions (Centro Nacional para la Prevención y Control de las Adicciones), Mexico.
[4] General Directorate of the National Institute of Psychiatry Ramón de la Fuente Muñiz (INPRFM).

Correspondence: Rodrigo Marín-Navarrete. Unit of Clinical Trials, Subdirectorate of Clinical Research, National Institute of Psychiatry Ramón de la Fuente Muñiz, Calz. México-Xochimilco 101, 14370, Mexico City. Tel. (55) 4160-5480 and 5481. E-mail: rmarin@inprf.gob.mx

Received first version: December 14, 2012. Second version: June 10, 2013. Accepted: June 21, 2013.

Translation of the original version published in spanish in:
Salud Mental 2013, Vol. 36 Issue No. 6.

INTRODUCTION

The use of psychoactive drugs is a phenomenon that has become relevant on the last decades, due to its impact in the quality of life of the patient and his family, as well as the economic and social cost it causes on the population. According to what was reported by scientific literature, teenagers and young adults are the ones affected the most by drug use, since it has been identified that today's generations are more exposed to them.[1]

In addition to what was stated above, the comorbidity of substance use disorders with other mental disorders presents an important prevalence according to international literature.[2-4] The results of studies performed in treatment venues (psychiatric hospitals, detoxification and addiction treatment clinics) show a greater comorbidity even when compared to epidemiological studies performed in schools and homes (29%, approximately),[5] since the first ones report that the prevalence of the comorbidity of substance use disorders with other psychiatric disorders ranges between 50% and 75% in participants whose treatment venue focuses on addiction treatment.[3,4] Likewise, this comorbidity in the population of patients whose treatment venue specializes on general psychiatric treatment, ranges between 20 and 50%.[4,6]

In the last years, various investigations have been made with the objective of studying comorbidity in special populations. Among these were homeless people,[7] prisoners,[8,9] teenagers,[10] women,[11] patients with serious mental disease,[12,13] residential and ambulatory care units.[14-16] In these studies it was discovered that the disorders which present a greater comorbidity with substance use disorders are those of state of mind, anxiety, psychotic and of antisocial personality[17] (Table 1).

Because of this, the importance of studying the comorbidity of substance use disorders with other mental disorders does not only lie on its high prevalence rates, but also on the impact it has on public health. According to specialized literature, people who present this comorbidity develop a greater severity of the addictive and psychiatric symptomatology, a situation significantly associated to the deterioration of the quality of life and psychosocial functioning of the individual.[2-4,18]

Apart from what was already described, there are other implications these patients are exposed to, such as the risk of suffering from an infectious disease (HIV, hepatitis B and/or C), increase of the suicidal ideation, suicidal behavior and consummated suicide, a greater risk of getting involved in legal and social problems, which can increase the chance of indigence and/or imprisonment.[2-4,18]

In addition to this, patients with this comorbidity show a lack of adherence to maintain1| themselves in and completing psychological and/or pharmacological treatments, which causes unsuccessful attention attempts in function of the high rate of relapse.[3,4,19,20]

Table 1. Prevalence of Substance Use Comorbidity and Psychiatric Disorders on Special Populations

Author, year, type of sample	N	Type of disorder											
		Comorbidity (%)	State of mind (%)	Major depression (%)	Disthymia (%)	Bipolarity (%)	Anxiety (%)	Panic attack (%)	Post-traumatic stress (%)	Eating (%)	ADHD (%)	Oppositional defiant disorder (%)	Schizophrenia and psychotics (%)	Others (%)
Lukasiewicz et al. (2009), prisoners.	998	74.60	42.20	–	–	–	38.40	–	–	–	–	–	35.60	–
Fabricius, Langa and Wilson (2008), private rehabilitation center patients.	419	57.00	65.10	–	–	–	17.00	–	–	15.00	16.40	03.40	2.00	7.00
Rush and Koegl (2008), patients with severe mental disease.	9839	28.00	25.00	–	–	–	29.40	–	–	–	–	–	27.90	41.70
Nocon, Bergé, Astals, Martín-Santos and Torrens (2007), detoxication unit patients.	115	67.00	27.00	–	–	–	12.20	–	–	0.90	–	–	5.20	33.00
Slesnick and Prestopnik (2005), teenagers at a residential center.	226	60.00	–	20.00	–	–	32.00	–	–	–	–	36.00	–	–
Newmann and Sallman (2004), women receiving psychiatric or addictions treatment.	204	31.90	–	47.70	–	32.30	33.80	–	29.20	–	–	–	6.20	10.80
Watkins et al. (2004), patients receiving ambulatory treatment for addictions.	195	62.60	–	31.30	22.60	08.70	19.50	19.50	15.40	–	–	–	13.90	–
Swadi and Bobier (2003), young people with mental disease on an internment unit.	62	64.50	60.00	–	–	–	63.00	–	–	–	–	–	80.00	71.00
Young (2003), prisoners.	359	53.60	64.00	–	–	–	65.00	–	–	–	–	–	43.60	61.20
Levounis, Galanter, Dermatis, Hamowy and Leon (2002), homeless people with substance dependence and mental disease, within a therapeutic community.	104	–	36.00	–	–	16.00	–	–	–	–	–	–	48.00	–

On the other hand, one of the relevant aspects pointed out by literature is the difficulty confronted by the patients at not finding treatment programs that integrate psychiatric and addictologic care, receiving parallel or sequenced treatments, which diminishes its effectiveness and increases its costs.[2-4,21]

Few studies have been made in Mexico with the purpose of estimating the comorbidity of substance use disorders with other psychiatric or mental disorders. One of the most representatives being the study published by Caraveo-Anduaga y Colmenares-Bermúdez (2002), which was made throughout a survey in Mexico City homes.

According to the authors, the results showed that in its majority, the psychiatric disorder precedes substance use, therefore, this could in a way represent a means of self-regulation to diminish the symptomatology of the mental disease.[22] Additionally, the authors reported that anxiety and affective disorders were the most prevalent in comorbidity with substance use disorders and that the severity of substance use increases the risk of comorbidity as well.[22]

Other studies in Mexico that have reported this comorbidity phenomenon in treatment centers recount that alcohol consumption between the psychiatric population is high, since they present both abuse disorders and a dependency to the substance. Consequently, the authors conclude that there is a connection between the excessive consumption of alcohol and other psychiatric diagnosis, such as affective and anxiety disorders, sexual dysfunction and schizophrenia.[23,24] However, these reports are two decades old and the current situation is unknown.

At a national level, due to the scarce professional offers of the public sector and how expensive and inaccessible are the offers of the private sphere for the attention of addictions, Residential Centers of Mutual-Aid for Addictions Treatment (RCMAAT), also known an "Anexos" in Spanish, have become an accessible choice for relatives and patients that suffer from alcohol and drug related disorders.[25]

The main feature of these centers is their heterogeneity, since most of them offer a diversity of residential services with a length that goes from three weeks to twelve months, depending on the goal or the period established by the people in charge (servants) of the center, therefore, in many cases the admission is requested by the relatives and involuntarily for the patient.[25]

Another feature is their infrastructure, i.e. some have spacious facilities, while others have limited spaces, thus causing its population to overcrowd. It is also important mentioning that the hierarchic structure of these centers is constituted by people who have managed to keep from consuming for a longer time and who wish to share their experience inducing recovery in others, however, many of those centers does not have the support of specialists or health professionals.[25,26]

From the aforementioned, it is evident that there is an information gap which makes the consideration and comprehension of the comorbidity phenomenon in clinical practice difficult, and this makes a direct impact when trying to respond to the needs of the patient and his family. Even though an important effort to opportunely detect psychiatric comorbidity with substance use disorders has been made, the studies reported in Mexico are still few.

Because of this, the present study was made in the RCMAAT, which will allow having a more specific panorama of the population that goes to these centers and their attention needs. Thus, it is expected that first-hand information is provided which contributes to the creation of public policies, which get translated into more specialized treatment for the population to be studied, reducing costs and increasing their effectiveness.

METHODOLOGY

Study design

A transversal study was made at Residential Centers of Mutual-Aid for Addictions Treatment (RCMAAT) in the south of Mexico City, with participants that had been diagnosed at the time of their entering with substance use disorders. Field study was made with in a 24-month time window, which was divided into two stages. The first (Stage 1) consisted of an initial evaluation, performed by psychiatrists, with the purpose of identifying and eliminating from the study, according to the exclusion criteria, those participants in which the presence of psychotic, maniacal and/or cognitive deterioration symptomatology was detected that limited their capacity to respond to the structured interview of the next stage.

The second stage (Stage 2) consisted of the application of a structured interview, assisted by psychologists trained for the application of the instrument in computerized modality, where the presence of the psychiatric disorders through life was evaluated, according to the diagnostic criteria of the *Diagnostic and Statistical Manual of Mental Disorders-IV, revised text* (DSM-IV-TR).[27]

Participants

A nonprobability convenience sampling of 535 male participants from the two selected RCMAAT was made. They must fulfill the following inclusion criteria: a) being between 18 and 65 years old, b) accepting to participate on the study voluntarily, c) present a substance use diagnosis, d) knowing how to read and write and e) having a responsible relative who could give their informed consent for the inclusion if the participant in the investigation protocol.

Instruments

On stage 1 a clinical interview and a clinimetric set were applied to support the psychiatrist; they were integrated by

Translation of the original version published in spanish in: Salud Mental 2013, Vol. 36 Issue No. 6.

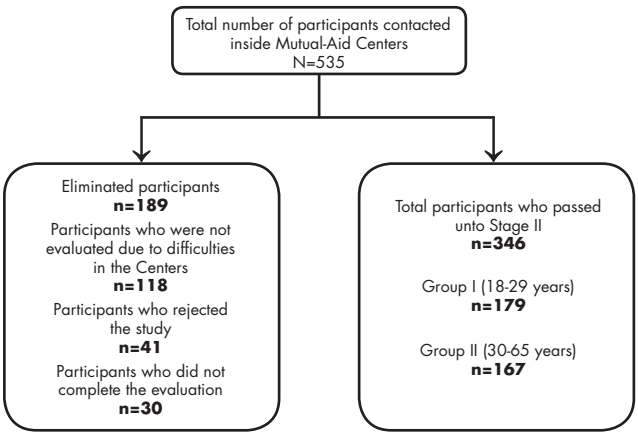

Figure 1. Study diagrama.

the Young Mania Rating Scale,[28-30] the psychosis section of the Composite International Diagnostic Interview, paper and pencil version 3.0 (CIDI) and the Mini Mental State Examination MMSE-35,[31,32] with the objective of identifying psychotic, maniacal and/or cognitive deterioration symptomatology that would not allow the participant to continue with the study.

On stage 2, a computerized version of the CIDI was applied,[33,34] which is a completely structured interview that provides diagnostics according to the criteria of the DSM-IV-TR for substance use disorders and another 17 psychiatric disorders. This instrument has been adapted and validated internationally, as well as being used in the Psychiatric Comorbidity survey in Mexico.[35]

Procedure

The venue selection was made based on the certification and functioning criteria signaled by the Secretariat of Health on the Mexican Official Standard NOM028 SSA2-2009 for the Prevention, Treatment and Control of Addictions for Residential Care Centers of Mutual-Aid.

Previous to field work non-professional interviewers (psychology interns) were trained in the application of the computerized version of the Composite International Diagnostic Interview version 3.0 (CIDI), and psychiatrists were trained in the application of clinimetric scales as well.

During field work, a verbal and written explanation of the study was given to each participant and their responsible relative and consent from both of them was obtained in order to proceed with the interview. Participants who fulfilled the inclusion criteria passed unto Stage 2.

At the end of the interviews, a psychoeducational talk took place, with the objective of explaining what comorbidity of substance use disorders is and the implications in the treatment, as well as providing reference alternatives and derivation to specialized attention services.

RESULTS

The total sample was integrated by 535 male participants, from which 189 were eliminated from the study and 346 were evaluated with the CIDI. In function of the high prevalence and incidence in substance use among the young, the sample was divided into two groups with the purpose of making a comorbidity presence analysis taking into consideration the age variable. Thus, 179 participants belong to Group I (18 to 29 years) and 167 belong to Group II (30 to 65 years) (Figure 1).

The demographic characteristics of the sample are here presented in table 2. Schooling was distributed similarly between those with 7-9 years and more than 12 years of study; most participants had studied between 10 and 12 years and only a small part had between cero and six years of schooling. Regarding the marital status, two thirds reported being separated, divorced, widowers or even not ever married; on the latter it was observed that more than half of them were not in a relationship at the time of the interview. On the other hand, the most frequent employment status was self-employment and underemployment, distributed similarly (Table 2).

The substance which was mainly used was alcohol (43%), followed by cocaine (25%) and marijuana, although the latter obtained a lower percentage (17%). The whole sample reported having at least one of the substance use disorders, hence being alcohol dependency disorder the most frequent "at least once in the lifetime" (63.01%), followed by drug dependency disorder (57.51%).

Table 2. Main demographic variables

	n	F	%
Sex: Male	346	346	100.0
Age			
• 18 to 19	346	52	15.0
• 20 to 29		127	36.7
• 30 to 39		87	25.1
• 40 to more		80	23.1
Schooling			
• 0 to 6 años	346	23	6.9
• 7 to 9 años		96	28.0
• 10 to 12 años		127	36.9
• More than 12 years		100	28.9
Marital state			
• Married / Free union	346	83	24.0
• Separated / Divorced / Widower		69	19.9
• Never married		194	56.1
Current non-marital couple relationship: (marital status single and on a couple relationship)			
• Yes	263	61	17.6
• No		202	58.4
Employment status			
• Employed	346	89	25.8
• Self-employed		118	34.0
• Underemployed		111	32.0
• Unemployed		28	8.2

F = Frequency.

Translation of the original version published in spanish in: Salud Mental 2013, Vol. 36 Issue No. 6.

Table 3. Substance use prevalence (Once in a lifetime) by age groups

	Group I (18-29 years) (n=179)		Group II (30-65 years) (n=167)		Total sample (n=346)	
Disorders	F	%	F	%	F	%
Substance use	179	100.00	167	100.00	346	100.00
Alcohol abuse	46	25.70	38	22.75	84	24.28
Alcohol dependency*	100	55.87	118	70.66	218	63.01
Drug abuse	30	16.76	22	13.17	52	15.03
Drug dependency*	127	70.95	72	43.11	199	57.51

*Indicates Significant Differences ($p \leq 0.05$); F = Frequency.

On the other hand, when comparing the age groups it was discovered that on Group II, the older age group (30-65 years), a greater prevalence in the alcohol dependency disorder is observed (70.66% (χ^2=8.111, *gl*=1, $p \leq 0.05$); whilst for Group I, the younger age group (18-29 years) drug dependency disorder (70.85%) (χ^2=27.396, *gl*=1, $p \leq 0.05$) was the most prevalent. Furthermore, the analysis showed statistically significant differences on both groups proportions (Table 3).

A total of 17 psychiatric disorders from Axis I were evaluated, as well as substance use disorders, and they were grouped according to the diagnostic groups of the DSM-IV-TR defined into: "Affective disorders, Anxiety disorders, Impulse control disorders (pathological gambling), Eating disorders, Attention deficit and emotionally disturbed behavior disorders and separation anxiety disorders".

Regarding the comorbidity of substance use disorders with other psychiatric disorders, it was observed that three-fourths of the evaluated population (75.72%) fulfilled the diagnostic criteria for any mental disorder, once in their lifetime. The group of most frequent comorbid disorders was the attention deficit and emotionally disturbed behavior disorder (56.94%) followed by anxiety disorders (30.35%), separation anxiety disorders (24.28%), affective disorders (23.99%), impulse control disorders (12.14%) and eating disorders (6.07%) (Table 4). The dissocial personality disorder and oppositional defiant disorder are the most frequent individual disorders.

Table 4. Prevalence of psychiatric disorders from Axis I (Once in a lifetime) by age groups

	Group I (18-29 years) n=179		Group II (30-65 years) n=167		Total sample n=346	
Disorders	F	%	F	%	F	%
Affective disorders	43	24.02	40	23.95	83	23.99
• Major depressive disorder	33	18.44	29	17.37	62	17.92
• Dysthymic disorder	7	3.91	7	4.19	14	4.05
• Bipolar affective disorders I and II	10	5.59	7	4.19	17	4.91
Anxiety disorders	59	32.96	46	27.54	105	30.35
• Distress disorder	11	6.15	1	0.60	12	3.47
• Agoraphobia	3	1.68	3	1.80	6	1.73
• Social phobia	32	17.88	20	11.98	52	15.03
• Obsessive compulsive disorder	4	2.23	5	2.99	9	2.60
• Post-traumatic stress disorder	23	12.85	22	13.17	45	13.01
• Generalized anxiety disorder	12	6.70	5	2.99	17	4.91
Impulse control disorders*	28	15.64	14	8.38	42	12.14
• Pathological gambling	28	15.64	14	8.38	42	12.14
Eating disorders	15	08.38	6	3.59	21	6.07
• Anorexia	3	1.68	0	0	3	0.87
• Bulimia	13	7.26	6	3.59	19	5.49
Attention deficit and emotionally disturbed behavior disorders*	124	69.27	73	43.71	197	56.94
• Attention deficit and hyperactivity disorder	48	26.82	22	13.17	70	20.23
• Dissocial personality disorder	100	55.87	53	31.74	153	44.22
• Oppositional defiant disorder	76	42.46	34	20.36	110	31.79
Separation anxiety disorders	44	24.58	40	23.95	84	24.28
• Separation anxiety in adults	39	21.79	35	20.96	74	21.39
• Separation anxiety in children	15	8.38	11	6.59	26	7.51
Any psychiatric disorder*	150	83.80	112	67.07	262	75.72

*Indicates significant differences ($p \leq 0.05$); F = Frequency.

Translation of the original version published in spanish in: Salud Mental 2013, Vol. 36 Issue No. 6.

Translation of the original version published in spanish in: Salud Mental 2013, Vol. 36 Issue No. 6.

Comparing both groups of age, a statistically significant difference was found on the proportion of participants who displayed impulse control disorders (χ^2=4.269, *gl*=1, p≤0.05), attention deficit and emotionally disturbed behavior disorders (χ^2=23.023, *gl*=1, p≤0.05) and any other psychiatric disorder from Axis I (χ^2=13.159, *gl*=1, p≤0.05).

It was observed that Group I (18-29 years) displayed a greater percentage on the presence of comorbidity for impulse control disorders (15.64%), attention deficit and emotionally disturbed behavior disorders (69.27%) and for any psychiatric disorder (83.80%) when compared to Group II (30-65 years) (67.07%) (Table 4).

When analyzing comorbidity by substance use disorder groups, it became evident that those related to alcohol use had links with statistically significant differences between "alcohol abuse and any psychiatric disorder (χ^2=6.335, *gl*=1, p≤0.05); alcohol abuse and affective disorders (χ^2=4.408, *gl*=1, p≤0.05) and alcohol dependency and anxiety disorders (χ^2=5.685, *gl*=1, p≤0.05)" (Table 5).

In reference with the participants who presented drug abuse, a statistically significant difference was not found for any disorder group, as compared to those participants that had drug dependency, where difference was found for the groups of "affective disorders (χ^2=6.832, *gl*=1, p≤0.05), anxiety disorders (χ^2=7.542, *gl*=1, p≤0.05), impulse control disorders (χ^2=10.747, *gl*=1, p≤0.05), attention deficit and emotionally disturbed behavior disorders (χ^2=31.853, *gl*=1, p≤0.05) and any psychiatric disorders (χ^2=26.545, *gl*=1, p≤0.05)" (Table 5).

Lastly, the psychiatric comorbidity frequencies showed a greater prevalence on "dependency disorders (drug dependency [85.93%], alcohol dependency [78.90%]); against abuse disorders (drug abuse [75%] and alcohol abuse [65.48])" which confirms the associative hypothesis that says *that the greater the severity of the addiction is, the greater the psychiatric comorbidity would be* (Table 5).

On the other hand, more than 70% of the sample with psychiatric comorbidity had more than two comorbid psychiatric disorders from Axis I, which points out that this population tends to have complex psychiatric syndromes. In addition to this, when comparing by age groups, it became evident that the youngest age group (Group I) has a higher number of comorbid psychiatric disorders, compared to the older age group (Group II). Thus finding a statistically significant difference (t=4.385, *gl*=344, p≤0.05), where the average for Group I (18-29 years) was $\overline{X}$=2.55, while for Group II (30 to 65 years) the average was $\overline{X}$=1.64 (Table 6).

A comparison was made regarding the order of appearance of the psychiatric disorders (previous, simultaneous or

Table 5. Prevalence of comorbid psychiatric disorders for Axis I with substance use disorders

	Disorder for							
	Alcohol abuse n=84		Alcohol dependency n=218		Drug abuse n=52		Drug dependency n=199	
	n	%	n	%	n	%	n	%
Affective disorders	13	15.48*	55	25.23	8	15.38	58	29.15*
• Major depressive disorder	8	9.52	39	17.88	7	13.46	43	21.61
• Dysthymic disorder	3	3.57	7	3.21	2	3.85	11	5.53
• Bipolar affective disorders I and II	5	5.95	11	5.05	1	1.92	12	6.03
Anxiety disorders	21	25.00	76	34.86*	15	28.85	72	36.18*
• Distress disorder	4	4.76	6	2.75	1	1.92	10	5.03
• Agoraphobia	0	2.38	11	5.05	1	1.92	9	4.52
• Social phobia	9	10.71	38	17.43	6	11.54	39	19.60
• Obsessive compulsive disorder	3	3.57	5	2.29	3	5.77	2	1.01
• Post-traumatic stress disorder	4	4.76	39	17.89	4	7.69	32	16.10
• Generalized anxiety disorder	6	7.14	10	4.59	4	7.69	11	5.53
Impulse control disorders	9	10.71	26	11.93	5	9.62	34	17.09*
•Pathological gambling	9	10.71	26	11.96	5	9.62	34	17.09
Eating disorders	2	2.38	16	7.34	1	1.92	14	7.03
• Anorexia	1	1.19	2	0.92	0	0	1	0.50
• Bulimia	1	1.19	15	6.88	1	1.92	13	6.53
Attention deficit and emotionally disturbed behavior disorders	43	51.19	129	59.17	29	55.77	139	69.85*
• Attention deficit and hyperactivity disorder	16	19.04	44	20.18	7	13.46	52	26.13
• Dissocial personality disorder	33	39.28	103	47.25	24	46.15	110	55.28
• Oppositional defiant disorder	30	35.71	70	32.11	11	21.15	87	43.72
Separation anxiety disorders	18	21.43	49	22.47	13	25.00	49	24.62
• Separation anxiety in adults	14	16.67	49	22.47	13	25.00	49	24.62
• Separation anxiety in children	7	8.33	17	7.80	2	3.85	18	9.04
Any psychiatric disorder	55	65.48*	172	78.90	39	75.00	171	85.93*

*Indicates significant differences (p≤0.05).

Table 6. Amount of comorbid psychiatric disorders from Axis I with any substance use disorder by group age

	Group I (18-29 years) n=179		Group II (30-65 years) n=167		Total sample (18-65 years) n=346	
	F	%	F	%	F	%
No comorbidity	29	16.2	55	32.9	84	24.3
1	31	17.3	44	26.4	75	21.7
2	35	19.6	33	20.0	68	19.7
3	34	19.0	11	7.0	45	13.0
4	26	14.5	9	5.4	35	10.1
5 or more	24	13.4	15	9.0	39	11.3

*(t=4.385, gl=344, p≤0.05); F = Frequency.

subsequent) in connection to substance use disorders, encountering statistically significant differences for any psychiatric disorders (χ^2=302.573, *gl*=2, p≤0.05), and because of this, according to the result, it was possible to identify that more than two thirds (83.59%) of the evaluated sample started with psychiatric symptoms previous to the appearance of addictive symptoms; i.e., this discovery proves and confirms that for the most part, psychiatric disorders appear earlier in connection to addictive disorders (Table 7).

Subsequently, attempts were made to identify associations for each disorder group were, and it was discovered that all psychiatric disorder groups displayed statistically significant differences. However, the one that was predominantly greater, in function of the prevalence, was the "attention deficit and emotionally disturbed behavior group (χ^2=304.335, *gl*=2, p≤0.05)" (Table 7).

DISCUSSION

The results obtained in the present study are consistent with the results reported on international literature[8-17] for addiction treatment centers, even though it was made in a Mutual-Aid model of care, which is not common in other countries. This discovery emphasizes the relevant need of attention of the aforementioned difficult access population (RCMAAT), since, as it has been mentioned, more than 75% of the evaluated participants had psychiatric comorbidity and for most of them treatment for this comorbidity is limited or nonexistent,[2,3,19] as is the information about it.

On the other hand, comparing the results obtained in the study with the ones reported in open population by Caraveo-Anduaga and Colmenares-Bermúdez (2002), it can be observed that anxiety and affective disorders turn out to be the most prevalent ones in comorbidity with substance use disorders.[22] However, in the present study it becomes relevant to mention that the disorder group from Axis I with greater prevalence was the attention deficit and emotionally disturbed behavior disorder (56.94%), which points out an important tendency to be reconsidered in future studies, with the object of developing treatment strategies sensitive to the needs of this population.

It is important to point out that Group I (18-29 years) showed more psychiatric comorbidity (83.80%) and drug dependency (70.95%) as compared to Group II (30-65 years), in which there was fewer comorbidity (67.07%) and the substance with the most impact was alcohol (70.66%). This could represent a relevant discovery, since young people have more comorbidity, which could be influenced by the preferred substance, the quantity and consumption frequency.

It is worth mentioning that this study was not designed with the purpose of establishing causality relationships. However, it was possible knowing that the frequency in relation to the onset of psychiatric symptoms as precedents to the addictive symptoms is higher (83.59%), which corresponds with the results of studies in Mexico made on open population.[19] Because of this, childhood-onset disorders must be detected and treated opportunely, considering that, as it was found on this study, they represent a frequent pathologic entity that precedes substance use and, that timely treatment can probably be an effective strategy of prevention against the development of addictive disorders.

Lastly, it was discovered that more than 70% of this population has more than two psychiatric disorders from

Translation of the original version published in spanish in: Salud Mental 2013, Vol. 36 Issue No. 6.

Table 7. Onset age of the psychiatric symptoms from Axis I in connection to the onset age of the addictive symptoms

		Psychiatric symptoms onset					
		Previous to addictive symptoms		Simultaneous to addictive symptoms		Subsequent to addictive symptoms	
Disorders	N	F	%	F	%	F	%
Affective*	83	36	43.37	9	10.84	38	45.78
Anxiety*	105	65	61.90	12	11.43	28	26.67
Impulse control*	42	9	21.43	6	14.29	27	64.29
Eating*	21	11	52.38	2	9.52	8	38.10
Attention deficit and emotionally disturbed behavior*	197	181	91.88	4	2.03	12	6.09
Separation anxiety*	84	47	55.95	2	2.38	35	41.67
Any psychiatric disorder*	262	219	83.59	7	2.67	36	13.74

*Indicates significant differences (p≤0.05); F = Frequency.

Axis I, through the lifetime, a quite significant figure, even without considering as a part of the study the valuation of Axis II (personality disorders), and persons with psychotic, maniacal and/or cognitive deterioration symptomatology; which allows us to know that this population displays an evolution of psychopathology, which implies the presence of complex psychiatric symptoms of difficult treatment. Within the study limitations it is important to point out that even if the sample does not represent the population of the RCMAAT nationwide, it can be considered as a first approximation to understanding the comorbidity of psychiatric disorders on people who attend these centers looking for treatment because of substance use.

Another limitation was that the study was performed only with male participants, which limits the knowledge of this phenomenon on the female population. However, this can constitute a line of research for further studies, since international literature reports an important prevalence of psychiatric disorders, traumatic situations and suicidal behavior on women who display substance use disorders.[11] The discoveries of this study possess a significant value on at least three guidelines: First, the creation of investigation hypothesis regarding the etiopathology of substance use disorders.

Secondly, it represents a relevance indicator for the creation of treatment models which contemplate psychiatric comorbidity. It is worth pointing out that the lack of treatment programs that include psychiatric and addiction treatment, like in the case of the RCMAAT which do not count with professional services, increases biopsychosocial deterioration, as well as showing an inadequate response to the treatment.

It is important to emphasize the need to provide a comprehensive and multidisciplinary attention on the different treatment scenarios, since the present study identifies the urgency of considering the existence of comorbid psychiatric disorders to substance use, with the purpose of increasing efficacy and reducing costs; which would increase the probabilities of success of the treatment and reduce the relapse rate, a situation that is expected to be translated into the improvement of the quality of life of the patient and his family.

Thirdly, the results of the present study could constitute an indicator that contribute to the creation of public policies in the prevention and/or addiction treatment field. Even though the RCMAAT have represented an alternative for many people, it is also important pointing out that many of these groups violate the General Health Standard operating without proper equipment, personnel and infrastructure according to the guidelines as stated in the Mexican Official Standard NOM028 SSA2-2009 for the Prevention, Treatment and Control of Addictions.

Additionally, this study is the first one dedicated to the evaluation of the prevalence of comorbidity of mental disorders in the captive population of the Residential Centers of Mutual-Aid for Addictions Treatment and one of the few performed in addiction treatment centers in Mexico.

Translation of the original version published in spanish in: Salud Mental 2013, Vol. 36 Issue No. 6.

ACKNOWLEDGEMENTS

Special thanks are due to the evaluation teams conformed by psychiatrists and psychologists, who very enthusiastically participated in the study obtaining the information presented on it; as well as to the scientists and experts who contributed with their knowledge for the analysis and presentation of the results.

REFERENCES

1. Medina-Mora ME, Natera G, Borges G, Cravioto P et al. Del siglo XX al tercer milenio. Las adicciones y la salud pública: drogas, alcohol y sociedad. Salud Mental 2001;24:3-19.
2. Daley D, Moss H. Dual disorder: Counseling clients with chemical dependency and mental illness. Tercera edición.) Minnesota: Hazelden; 2002.
3. Substance Abuse and Mental Health Services Administration (SAMHSA). Report to congress on the prevention and treatment of co-occurring substance abuse disorders and mental disorders. Inventory number: BKD467; 2002.
4. Substance Abuse and Mental Health Services Administration (SAMHSA) and Center for Substance Abuse Center (CSAT). Substance abuse treatment for persons with co-occurring disorders. Treatment improvement protocol Vol. 42. [DHHS Publication No. (SMA) 05-3992]; 2005.
5. Regier DA, Farmer ME, Rae DS, Locke BZ et al. Comorbidity of mental disorders with alcohol and other drug abuse. Results from the epidemiologic catchment area (ECA) study. JAMA 1990;264(19):2511-2518.
6. World Health Organizations. The world health report 2001. Metal Health: New Understanding, New Hope. Ginebra: 2001.
7. Levounis P, Galanter M, Dermatis H, Hamowy A et al. Correlates of HIV transmission risk factors and considerations for interventions in homeless, chemically addicted and mentally ill patients. J Addictive Diseases 2002;61-72.
8. Lukasiewicz M, Blecha L, Falissard BXN, Benyamina A et al. Dual diagnosis: Prevalence, risk factors, and relationship with suicide risk in a nationwide sample of French prisioners. Alcoholism: Clinical Experimental Research 2009;160-168.
9. Young DS. Co-occurring disorders among jail inmates: Bridging the treatment gap. J Social Work Practice Addictions 2000;63-85.
10. Slesnick N, Prestopnik J. Dual and multiple diagnosis among substance using runaway youth. American J Drug Alcohol Abuse 2005;179-201.
11. Newmann JP, Sallman J. Women, trauma histories, and co-occurring disorders: Assessing the scope of the problem. Social Service Review 2004;466-499.
12. Rush B, Koegl CJ. Prevalence and Profile of People with Co-occurring Mental and Substance Use Disorders within a Comprehensive Mental Health System. Canadian Journal of Psychiatry, 2008;810-821.
13. Swadi H, Bobier C. Substance use disorder comorbidity among inpatient youths with psychiatric disorder. Australian New Zealand J Psychiatry, 2003;294-298.
14. Nocon A, Bergé D, Astals M, Martín-Santos R et al. Dual diagnosis in an inpatient drug-abuse detoxification unit. European Addiction Research 2007;192-200.
15. Watkins KE, Hunter SB, Wenzel SL, Tu W et al. Prevalence and characteristics of clients with co-occurring disorders in outpatient substance abuse treatment. American J Drug Alcohol Abuse 2004;749-764.
16. Fabricius V, Langa M, Wilson K. An exploratory investigation of co-occurring substance related and psychiatric disorders. J Substance Use 2008;99-114.
17. Hasin D, Nunes E, Meylan J. Comorbidity of alcohol, drug and psychiatric disorders: Epidemiology. En: Kranzler H, Tinsley J. Dual

diagnosis and psychiatric treatment: Substance abuse and comorbid disorders. USA: Segunda edición; Marcel Bekker; 2004; pp. 1-34.
18. Drake RE, Wallach MA. Dual diagnosis: 15 Years of Progress. Psychiatric Services 51(9):1126-1129.
19. Sacks S, Sacks J, De Leon G, Bernhardt AI et al. Modified therapeutic community for mentally ill Chemicals "abusers": Background; influences; program description; preliminary findings. Substance Use Misuse 1997;32(9):1217–1225.
20. Brunette MF, Mueser KT, Drake RE. A review of research on residential programs for people with severe mental illness and co-occurring substance use disorders. Drug Alcohol Review 2004;23:471-481.
21. Drake RE, Mueser KT, Brunette MF, McHugo GJ. A Review of treatments for people with severe mental illnesses and co-occurring substance use disorders. Psychiatric Rehabilitation J, 2004;27(4):360-374.
22. Caraveo-Anduaga JJ, Colmenares-Bermúdez E. Los trastornos psiquiátricos y el abuso de sustancias en México: Panorama epidemiológico. Salud Mental 2002;25(2):9-15
23. Díaz-Martínez LR, Campillo Serrano C, Cerrud-Sánchez J, Rosado-Franco A et al. El consumo de alcohol en la población psiquiátrica. Anales. Instituto Mexicano de Psiquiatría, Reseña de la VII Reunión de Investigación: 1992;108-116.
24. Díaz-Martínez LR. Comorbilidad psiquiátrica: consumo excesivo de alcohol y trastornos psiquiátricos. Las Adicciones: hacia un enfoque multidisciplinario. México: Secretaría de Salud; 1994.
25. Marín-Navarrete R, Eliosa-Hernández A, Lozano-Verduzco I, Fernández-De la Fuente C et al. Estudio sobre la experiencia de hombres atendidos en centros residenciales de ayuda mutua para la atención de las adicciones. Salud Mental 2013;36(59):393-402
26. Pulido-Rull MA, Moyers-González M, Martínez-Salas A. Algunos datos acerca del funcionamiento de una muestra de grupos de autoayuda en México. Revista Mexicana de Investigación en Psicología, 2009;1(1):85-97.
27. American Psychiatric Association.APA. DSM-IV-TR: Diagnostic and Statistical Manual of Mental Disorders. Washington, DC. Cuarta edición revisada; 2000.
28. Apiquian R, Páez F, Tapia RO, Fresán A. Validez y confiabilidad de la Escala para la Evaluación de la Manía. Salud Mental 1997;20(3):23-29.
29. Colom F, Vieta E, Martínez-Arán A, García-García M et al. 2002; Versión española de una escala de evaluación de la manía: validez y fiabilidad de la escala de Young. Med Clin Barcelona 1997;119:366-371.
30. Young RC, Biggs JT, Ziegler VE, Meyer DA. A rating scale for mania: Reliability, validity and sensitivity. Br J Psychiatr 1978;133:429-435.
31. Becerra B, Ortega-Soto HA, Torner C. Validez y reproductibilidad del examen cognoscitivo breve (Mini-mental State Examination) en una unidad de cuidados especiales de un hospital psiquiátrico. Salud Mental 1992;15(4):41-45.
32. Folstein MF, Folstein SE, Mc Hugh PR et al. 1975; Minimental state: a practical guide for grading the cognitive state of patients for the clinician. J Psychiatric Res 1992;12:189-198.
33. Kessler y Üstün, 2004; http://www.hcp.med.harvard.edu/wmh/
34. Haro JM, Arbabzadeh-Bouchez S, Brugha TS, De Girolamo G et al. Concordance of the Composite International Diagnostic Interview Version 3.0 (CIDI 3.0) with standardized clinical assessments in the WHO World Mental Health Surveys. International Jf Methods Psychiatric Research 2006;15:167–180.
35. Medina-Mora ME, Borges G, Lara C, Benjet C et al. Prevalence, service use, and demographic correlates of 12-month DSM-IV psychiatric disorders in Mexico: results from the Mexican National Comorbidity Survey. Psychological Medicine 2005;35:1-11.

Declaration of conflict interest: None

Translation of the original version published in spanish in:
Salud Mental 2013, Vol. 36 Issue No. 6.