Originales

Addictiveness: an independent dimension in the psychotic syndrome. Presentation of the Addictiveness in the Psychotic Syndrome Assessment Scale (APSAS)

Adictividad: una dimensión independiente en el síndrome psicótico. Presentación de la Escala de Evaluación de la Adictividad en el Síndrome Psicótico (EASP)

Martín L. Vargas Aragón[1, 2, 3], Sonia López Lorenzo[3, 4] and Natalia Jimeno Bulnes[2, 3]

[1] Service of Psychiatry. Rio Hortega University Hospital. Valladolid, Spain.
[2] Area of Psychiatry. School of Medicine. University of Valladolid. Valladolid, Spain.
[3] Grupo de Investigación en Neurociencia Clínica de Castilla y León (GINCYL).
[4] Area of Personality, Evaluation and Treatment. Faculty of Health Sciences. University of Burgos. Spain.

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Abstract

Models of dual pathology habitually consider substance-use disorders (SUD) and the rest of mental disorders as two pathological conditions coincident in a same person. This study adopts a different point of view and accept adictivity as the nineth clinical dimension in the psychotic disorders to be added to hallucinations, delusion, disorganised speech, abnormal psychomotor behaviour, negative symptoms, cognitive deficit, depression, and mania. In the last term, all of them seems to derive from a common fronto-subcortical disfunction with dopaminergic, glutamatergic and gabaergic implication.

The Scale for the Evaluation of Adictivity in the Psychotic Syndrome (SEAPS) is presented. It wants to be an integrated and easy to use tool for evaluating adictivity in the psychotic disorders. It is based in data collected with respect of first use, length of use, last use, frequency of use and addiction intensity regarding twelve types of substances or addictive behaviours. Results of the application of SEAPS on a sample of 105 psychotic subjects suggest good psychometric characteristics as well as the independency of adictivity respect with other clinical dimensions.

Keywords

Dual pathology; adiction; psychosis; clinical assessment scales.

– Correspondence:
Martín Vargas
Email: mvargas@saludcastillayleon.es

Resumen

Los modelos de patología dual suelen considerar a los trastornos por uso de sustancias (TUS) y al resto de trastornos mentales como dos entidades nosológicas que coinciden en una misma persona. Este estudio adopta un punto de partida diferente y estima que la adictividad sería una novena dimensión clínica independiente en los trastornos psicóticos, que se añadiría a las de alucinaciones, delirio, habla desorganizada, conducta psicomotriz anormal, síntomas negativos, déficit cognitivo, depresión y manía. Todas ellas derivarían, en último término de una disfunción fronto-subcortical común con implicación dopaminérgica, glutamatérgica y gabaérgica.

Se presenta la Escala de Evaluación de la Adictividad en el Síndrome Psicótico (EASP), que busca ser un instrumento integrado y sencillo para la evaluación de la adictividad en los trastornos psicóticos. Se basa en la recogida de datos sobre el primer uso, el tiempo de consumo, el último consumo, la frecuencia de consumo y la intensidad de la adicción de doce tipos de sustancias o conductas adictivas. Los resultados de la aplicación de la EASP a una muestra de 105 sujetos psicóticos sugieren unas buenas características psicométricas, así como la independencia de la adictividad respecto a otras dimensiones clínicas.

Palabras clave

Patología dual; adicción; psicosis; escalas de evaluación clínica.

1. INTRODUCTION

The concept of dual pathology refers to comorbidity or concurrence of disorders (Volkow et al., 2016, 2020). In Spain it has been widely used in psychiatry (Roncero Alonso & Casas Brugué, 2016) to denote the comorbidity of substance use disorders (SUD) together with other mental disorders, but it has also been used in reference to the comorbidity of personality disorders with other mental disorders, or intellectual disability along with mental disorders. This work adheres to the first meaning, within which various specific aspects have been studied. They include the search for psychopathological profiles, where a predominance of depressive, paranoid and obsessive-compulsive symptoms has been seen in addicted people (Sáez & Ruiz, 2017).

The causal relationships underlying the dual pathology between SUD and other mental disorders has merited long theoretical debates. In a simplified approach, three models are differentiated: those that consider substance use to be a risk factor for mental disorders, those that consider that the previous presence of mental disorders is a risk factor for substance use, and a third perspective that proposes complex and bidirectional causality relationships. This last approach is the most accepted at present, so that repeated exposure to substances with addictive capacity in socially vulnerable people would lead to the 'addiction cycle' in which neural networks consolidate with the involvement of dopaminergic neurotransmission. This process results in an increase of the propensity / vulnerability to use the substance (Volkow et al., 2016).

A particularly complex field is that of dual pathology between SUD and psychotic disorders, where psychotic disorders associated with the use of cannabis have been specially studied. The comorbidity, cannabis - psychosis is especially relevant in psychosocial rehabilitation since the continued use of cannabis can induce apathy, abulia and anergy that hinder social interaction and promote social isolation, thus weakening the desirable recovery process. According multiple epidemiological and meta-analysis studies published in recent years (Hasan et al., 2020), it can now be stated that psychotic disorders occur more frequently in cannabis users, with an increased risk of psychosis of 1.4 in users of the substance; this figure amounts to a relative risk of 3.4 in those who develop dependence. Furthermore, cannabis users develop psychosis earlier than non-users.

In the different Spanish autonomous communities, healthcare networks for the care of drug addicted subjects were built during the 70s and 80s of the last century. This was done taking as a standard problem the care for subjects with heroin dependence, where psychiatric comorbidity is less frequent. It is well known that the currently most used substances, such as cannabis, cocaine, or psychostimulants, are more frequently associated with mental disorders, precisely this has been a key factor for the emergence of the concept of dual pathology. But insufficient adaptation of healthcare resources to new needs is causing problems such as the 'wrong door syndrome', which occurs when people with concurrent types of disorders go unsuccessfully between health and drug addiction care facilities, which may even have legal implications (Aguilar Dorta, 2016). This healthcare problem is not unique to Spain, but the scarce integration of therapeutic guidelines for the treatment of the concurrence of SUD with other mental disorders is a global problem, as pointed out by Hakobyan et al. (Hakobyan et al., 2020) in a recent systematic review.

In a previous work (Vargas & Lopez, 2010) we have proposed that addictiveness is an independent dimension, both of the positive and negative syndrome of schizophrenia. According to this alternative model to the concept of dual pathology, the core of the problem would not consist in studying the comorbidity of two different disorders, psychosis and SUD, but rather that addictiveness would be an independent clinical dimension which is characteristic of the psychotic syndrome. This ninth dimension would be added to the eight already considered in DSM-5 (American Psychiatric Association, 2013) (p.743-744): I. Hallucinations, II. Delusions, III. Disorganized speech, IV. Abnormal psychomotor behaviour, V. Negative symptoms (restricted emotional expression or abulia), VI. Impaired cognition, VII. Depression, VIII. Mania. According to our model, a new clinical dimension would be added: IX. Addictiveness.

The addictiveness dimension would have its neurobiological justification in the common structures that are known to be altered in both addictive and psychotic disorders; in these structures dopaminergic, glutamatergic and GABAergic neurotransmission intervenes (Salavati et al., 2015). Both in SUD and in schizophrenia, plastic modifications would occur in frontal subcortical circuits that involve the prefrontal cortex and subcortical nuclei such as the accumbens, striatum or amygdala; this fact would justify the frequent comorbidity of psychotic and addictive symp-

toms. According to the integrated clinical model that we propose, both psychosis (expressed in eight dimensions according to DSM-5) and addictive behaviours (the addictiveness dimension that is proposed here) would be the symptomatic expression of a common underlying disorder in the frontal subcortical regulation of the dopaminergic, glutamatergic and gabaergic neurotransmission. This approach of clinical dimensionality would be compatible with the classic models of SUD-psychosis comorbidity that assume complex and bidirectional causal relationships, thus focusing on the diversity of substances that can modify dopaminergic neurotransmission (Wise & Robble, 2020). In these models, not only the intensity, frequency, temporal proximity of the last consumption of the substance or the behavioural and functional consequences of intoxication are important, but the age of onset of use has been shown to be a determining factor, at least in psychosis associated with cannabis use (van der Steur et al., 2020).

According to a theoretical framework of clinical dimensionality, the main objective of this study is to present a new clinical instrument for the evaluation of the addictiveness dimension in psychotic disorders. It is intended that the new scale be easy to apply and that it accredits clinical validity by contemplating in a unified way the different characteristics of addictiveness: type of substance, onset, frequency, duration, recent addiction, and consequences of the addiction. In addition, it also claims to be compatible with behavioural addictions. As secondary objectives, we propose to know the dimensional structure of the scale and its association with other psychopathological dimensions.

2. MATERIAL AND METHODS

A cross-sectional study has been carried out on an incidental sample of 105 subjects who perform outpatient follow-up in a Mental Health Unit in Zamora, Spain. This dispositive has as a reference a population with a high prevalence of dual pathology since it serves a therapeutic community, in addition to paying attention to the general population. The study includes patients who, regardless of whether they present or have presented SUD, currently present some type of psychotic disorder included in the ICD-10 F20 to F29 diagnostic group (schizophrenia, schizotypal disorder, and delusional disorders) and who access to clinical evaluation according to usual clinical practice. Subjects whose contribution of information was not considered minimally reliable or who did not collaborate in the clinical examination were excluded.

Subjects

The study sample was made up of 105 subjects, 69 men (65.7%) and 36 women (34.3%), with a mean age of 39.90 years (SD = 9.66, range 20 to 62 years). Of these, 13 subjects (12.38%) were educated at the primary level (6 years or less), 58 subjects (55.24%) received secondary education (between 7 and 10 years), 12 subjects (11.43%) received education at the high school level (11 or 12 years) and 22 subjects (20.95%) received higher education (11 years or more of education. Subjects received the following diagnoses: thirty subjects (28.57%) were diagnosed with paranoid schizophrenia, 27 (25.71%) had schizoaffective disorder, 18 (17.14%) were diagnosed with residual schizophrenia and the other 30 participants (28.57%) had

other types of psychotic disorder. Table 1 characterizes the sample clinically through the evaluation of: the overall positive, negative, and general symptoms with the Positive and Negative Syndrome Scale (PANSS) (Kay et al., 1987), subjective psychotic experiences with the scale of basic symptoms Frankfurt Complaint Questionnaire, third version (FCQ-3) (Jimeno Bulnes et al., 1996), the general clinical severity with the Clinical Global Impression (CGI) (Rabinowitz et al., 2006), and grade of performance with the Global Assessment of Functioning scale (GAF) (Pedersen & Karterud, 2012). The clinical profile of the sample can be characterized as clinically stable psychotic patients, with residual symptoms and mild to moderate functional deficit.

The addictiveness dimension was evaluated using the scale made for this purpose, which we have called Addictiveness in the Psychotic Syndrome Assessment Scale (APSAS), which is presented in table 2. It consists of 12 items and scores between 0 and 262 points.

Statistics

Descriptive statistics of sociodemographic variables have been carried out by calculating means and standard deviations for quantitative variables and calculating proportions for qualitative ones. For the main objective, the score obtained in the APSAS was analysed, first obtaining the total score for each of the 12 items (sum of the score for each of the five characteristics). The total score of the scale is obtained by adding that of the 12 items. Subsequently, a principal component analysis was carried out with Varimax rotation (MINEIGEN 1 ITERATE 25) of the total scores for each substance to know the dimensional structure of the scale. Finally, correlations have been made using Spearman's Rho correlation coefficient between the APSAS dimensions and the clinical scales. Some means have been compared using the student's t statistic. In all cases, a level of statistical significance $p < 0.05$ was considered, bilateral test. The calculations were made using the SPSS v.17. statistical package.

Table 1. Clinical characteristics of the sample

	mean (SD)
PANSS[1] (n = 105)	
PANSS- positivo	11,44 (4,06)
PANSS- negativo	15,96 (7,09)
PANSS-general	26,20 (8,60)
PANSS-total	53,60 (17,84)
FCQ-3[2] (n = 78)	30,04 (25,83)
ICG[3] (n = 105)	2,86 (1,46)
GAF[4] (n = 105)	67,50 (13,65)

[1] Positive and Negative Syndrome Scale. [2] Frankfurt Complaint Questionnaire, third version. [3] Clinical Global Impression.
[4] Global Assessment of Functioning scale.

Table 2a. Structure of the Addictiveness in the Psychotic Syndrome Assessment Scale (APSAS)

The Addictiveness in the Psychotic Syndrome Assessment Scale (APSAS) is a hetero-applied scale that has been constructed to perform a quick anamnesis of substance use and the presence of behavioural addictions in psychotic patients. The information collected from any reliable source of information will be valid. although the main source will be the information provided by the patient himself/herself. In each of the twelve items the following issues will be considered:

A. First use of the substance:
   1) After age of 30.
   2) Between 26 and 30 years old.
   3) Between 21 and 25 years old.
   4) Between 16 and 20 years old.
   5) Before age of 16.

B. Total time during which the substance has been consumed (or during which the addictive behaviour has existed as an active problem). considering any level of intensity of consumption. The time periods separated by periods of abstinence will be added together for a global count:
   1) Never or up to a maximum of three days.
   2) Between three days and six months.
   3) Between six months and 5 years.
   4) Between 5 and 15 years.
   5) More than 15 years.

C. Last use of the substance (or last performance of the addictive behaviour):
   1) He/she has never used the substance for more than five years.
   2) More than six months ago. but less than five years ago.
   3) More than a month ago. but less than six months ago.
   4) More than a week ago. but less than a month ago.
   5) In the last week.

D. Most representative frequency of consumption or performance of the behaviour in times of greatest addictive activity:
   1) Never or at most three times in life.
   2) Sporadically: at most four times a year.
   3) One to three times a month.
   4) One to two times a week.
   5) Three or more times a week.

E. Intensity of addiction in the most active episodes:
   1) He/she has consumed the substance or carried out the behaviour on a maximum of three occasions and always without problems.
   2) Regular. moderate and non-problematic use of the substance. or non-problematic habit.
   3) Abuse. unproblematic use at high doses or problematic habit.
   4) Dependence. severe problems due to consumption or clearly addictive behaviour.
   5) Maintenance of consumption or addictive behaviour despite causing very severe problems. whether or not dependency criteria are met.

SUBSTANCES AND BEHAVIOURS ASSESSED

1) Tobacco.
2) Potentially addictive drinks and foods: coffee, tea, cola or energy drinks, energy foods (chocolate, sweets, nuts, etc.).
3) Alcohol.

(Continuation table 2a)

4) Cannabis.
5) Amphetamines and psychostimulant 'pills': including amphetamines. ecstasy. speed. designer drugs and the like.
6) Hallucinogens: LSD (tabs. acid). ketamine. hallucinogenic mushrooms or others.
7) Cocaine (alone or mixed with heroin).
8) Opiates (alone or mixed with cocaine).
9) Psychopharmacological drugs: any prescribed psychotropic drug when irregular use is made. or any psychotropic drug acquired in the illegal market. It includes irregular use of benzodiacepines (BDZ). methylphenidate. or similar prescription psychotropic drugs.
10) Volatile substances: glues. inhalable glues or similar.
11) Gambling: slots. bingo. card games. lottery. etc.
12) Other behavioural addictions: sex. internet. shopping. vigorexia. anorexia. orthorexia. etc.

* In the sections that include several substances or behaviours, the most intens, frequent and/or severe behaviour will be scored. When using a mixture of cocaine and heroin. score 7 and 8.

Table 2b. Scoring sheet of the Addictiveness in the Psychotic Syndrome Assessment Scale (APSAS)

Sustance	First use	Consumption time	Last use	Frequency of consumption	Intensity of addiction	Total (0-20)
1. Tobacco	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	
2. Coffee and other drinks and foods	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	
3. Alcohol	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	
4. Cannabis	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	
5. Amphetamines and psychostimulant 'pills'	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	
6. Hallucinogens	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	
7. Cocaine	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	
8. Opiates	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	
9. Psychopharmacological drugs	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	
10. Volatile substances	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	
11. Gambling	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	
12. Other behavioural addictions	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	
Total APSAS						(0- 262)

3. RESULTS

The scores obtained in the APSAS are shown in figure 1 and table 3. The global score of the scale does not adjust to a normal distribution, since it appears to have two or three peaks, with a left tail of approximately 15 subjects with almost no substance use, a second peak around a score of 45 and a third peak around a score of 90.

A predominant use of legal substances is observed: tobacco, coffee, and alcohol. Cannabis use, gambling, and other behavioural addictions follow. The remaining the illegal substances are at the last place. In the score for each substance, the most relevant attribute is the early age of use initiation, between 16 and 21 years, especially for legal substances.

Figure 1. APSAS score distribution histogram

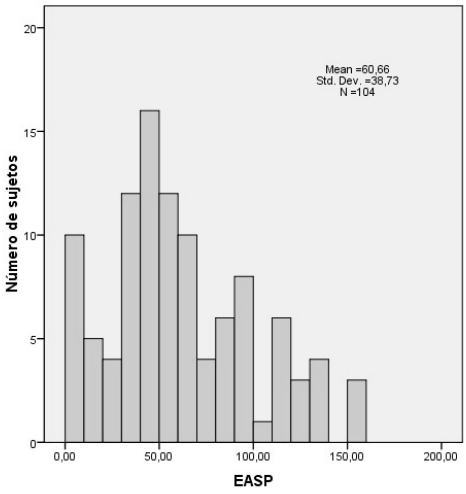

Table 3. Scoring in the Addictiveness in the Psychotic Syndrome Assessment Scale (APSAS)

Sustance	First use	Consumption time	Last use	Frequency of consumption	Intensity of addiction	Total (0-20)
1. Tobacco	2,84 (1,38)	3,08 (1,50)	2,92 (1,71)	3,19 (1,54)	1,86 (1,18)	13,89 (6,61)
2. Coffee and other drinks and foods	2,59 (1,41)	2,97 (1,52)	2,84 (1,76)	2,83 (1,60)	1,09 (1,02)	12,31 (6,61)
3. Alcohol	2,60 (1,47)	2,70 (1,58)	1,60 (1,74)	2,08 (1,55)	1,33 (1,27)	10,30 (6,03)
4. Cannabis	1,80 (1,59)	1,53 (1,59)	0,66 (1,35)	1,57 (1,74)	1,10 (1,34)	6,67 (6,68)
5. Amphetamines and psychostimulant 'pills'	0,78 (1,29)	0,54 (0,99)	0,04 (0,24)	0,64 (1,28)	0,42 (0,97)	2,42 (4,31)
6. Hallucinogens	0,54 (1,09)	0,33 (0,72)	0,01 (0,10)	0,32 (0,77)	0,22 (0,62)	1,43 (2,98)
7. Cocaine	0,92 (1,32)	0,99 (1,46)	0,30 (0,77)	0,96 (1,54)	0,71 (1,28)	3,60 (5,85)
8. Opiates	0,51 (1,10)	0,57 (1,23)	0,16 (0,57)	0,63 (1,36)	0,54 (1,20)	2,42 (4,95)

(Continuation table 3)

9. Psychopharmacological drugs	0,27 (0,87)	0,24 (0,78)	0,10 (0,59)	0,27 (0,91)	0,28 (0,84)	1,15 (3,56)
10. Volatile substances	0,04 (0,39)	0,02 (0,19)	0,00 (0,00)	0,04 (0,39)	0,03 (0,29)	0,12 (1,27)
11. Gambling	0,59 (1,20)	0,81 (1,43)	0,58 (1,28)	0,88 (1,49)	0,71 (1,21)	3,60 (6,05)
12. Other behavioural addictions	0,42 (1,04)	0,53 (1,18)	0,32 (0,98)	0,51 (1,14)	0,95 (1,07)	2,74 (4,48)
Score range	**(0 - 48)**	**(0 - 48)**	**(0 - 48)**	**(0 - 48)**	**(0 - 48)**	**(0 - 262)**
Total APSAS (n; SD)	42,22 (34,16)	14,31 (8,77)	9,54 (6,15)	13,91 (9,50)	9,18 (7,89)	60,66 (38,73)

Table 4 shows the results of the rotated principal component analysis, which explains 63.06% of the variance. Three components result from the analysis. A first general component is related to all items, except for volatile substances. In a second component, coffee consumption weighs with relative specificity. The use of volatile substances weighs exclusively on a third component. This third factor is dispensable, since in our sample only one person used volatile substances. By removing this item from the analysis, the first two factors persist in a similar way. Although the use of coffee gives rise to a second component, it is also correlated in a relevant way with the first dimension. For all these reasons, we consider that the APSAS scale can be interpreted as a one-dimensional evaluation of the 'addictiveness' construct; therefore, the correlation analyses will be made using the total score on the scale.

Table 5 shows the correlations between the clinical dimensions. The APSAS only correlates, and also does it so slightly, with the experience of subjective psychotic symptoms evaluated with the FCQ-3. The rest of the scales show a strong correlation with each other. Since coffee consumption gave rise to a second component, the correlation of coffee consumption with the clinical dimensions has been analysed, resulting in a slight negative association between coffee consumption and the negative syndrome (rho = -0.23; p bilateral = 0.019, n = 105), so that the higher the coffee consumption, the lower the negative syndrome. No significant associations have been found between coffee consumption and the rest of the clinical dimensions.

APSAS does not correlate with age (rho = 0.005; bilateral p = 0.959 n = 105). A comparison of addictiveness has been made in both sexes, finding a significant difference (p <0.001; t = -6.29; 95.84 gl): APSAS women (mean = 34.80; SD 24.66), men (mean = 73.78; SD 38.07), so that addictiveness appears as a clinical dimension twice as intense in men as in women. It should be noted that, with respect to sex, there are no significant differences in the remaining the clinical dimensions (total PANSS, positive PANSS, negative

Table 4. Rotated matrix of components of the Addictiveness in the Psychotic Syndrome Assessment Scale (APSAS) in the sample

	Component (percentage of explained variance)		
	1 (31,29 %)	2 (23,00 %)	3 (8,77 %)
Tobacco	**,641**	,516	-,204
Coffee and other drinks and foods	,513	**,647**	,011
Alcohol	**,695**	,513	-,070
Cannabis	**,820**	,082	,066
Amphetamines and psychostimulant 'pills'	**,712**	-,287	,036
Hallucinogens	**,694**	-,283	,028
Cocaine	**,876**	-,247	,161
Opiates	**,778**	-,344	,078
Psychopharmacological drugs	**,587**	-,257	,055
Volatile substances	-,017	,189	**,944**
Gambling	**,588**	,124	-,132
Other behavioural addictions	**,348**	-,344	-,189

* Extraction method: Analysis of Principal Components with Varimax rotation.
* In bold letter, the most representative substance in every component are resalted.

PANSS, general PANSS, FCQ-3, ICG, GAF). This makes it advisable for the clinical interpretation of the APSAS scale in psychotic patients to establish the following cut-off points based on percentiles differentiating by sex:

- Absent or minimal addictiveness (percentile equal to or less than 16): general, APSAS <23; male, APSAS<38; women, APSAS <7.
- Habitual-low addictiveness in the clinical population of psychotic patients (percentile between 17 and 50): general, APSAS 24 to 54; males, APSAS 39 to 68; women, APSAS 8 to 36.
- Habitual-high addictiveness in the clinical population of psychotic patients (percentile between 51 and 85): general, APSAS 55 to 110; males, APSAS 69 to 116; women, APSAS 37 to 54.
- High addictiveness in the clinical population of psychotic patients (percentile between 85 and 98): general, APSAS 111 to 154; males, APSAS 117 to 156; women, APSAS 55 to 112.
- Extreme addictiveness in the clinical population of psychotic patients (percentile greater than 98): general, APSAS 154 to 262; males, APSAS 157 to 262; women, APSAS 113 to 262.

Table 5. Correlation matrix between clinical scales obtained in the sample

Spearman's Rho *p* (bilateral) n	APSAS	total PANSS[1]	positive PANSS	negative PANSS	general PANSS	FCQ-3[2]	CGI[3]	GAF[4]
APSAS	1,000 . 104	-,093 ,345 104	,049 ,624 104	-,193* ,050 104	-,041 ,676 104	,289* ,011 77	,026 ,792 104	-,042 ,674 104
total PANSS	-,093 ,345 104	1,000 . 105	,849** ,000 105	,900** ,000 105	,950** ,000 105	,416** ,000 78	,889** ,000 105	-,869** ,000 105
positive PANSS	,049 ,624 104	,849** ,000 105	1,000 . 105	,649** ,000 105	,791** ,000 105	,542** ,000 78	,800** ,000 105	-,735** ,000 105
negative PANSS	-,193* ,050 104	,900** ,000 105	,649** ,000 105	1,000 . 105	,762** ,000 105	,255* ,024 78	,763** ,000 105	-,798** ,000 105
general PANSS	-,041 ,676 104	,950** ,000 105	,791** ,000 105	,762** ,000 105	1,000 . 105	,412** ,000 78	,852** ,000 105	-,820** ,000 105
FCQ-3	,289* ,011 77	,416** ,000 78	,542** ,000 78	,255* ,024 78	,412** ,000 78	1,000 . 78	,572** ,000 78	-,452** ,000 78
CGI	,026 ,792 104	,889** ,000 105	,800** ,000 105	,763** ,000 105	,852** ,000 105	,572** ,000 78	1,000 . 105	-,896** ,000 105
GAF	-,042 ,674	-,869** ,000 105	-,735** ,000 105	-,798** ,000 105	-,820** ,000 105	-,452** ,000 78	-,896** ,000 105	1,000 . 105

* Significant correlation at the p <0.05 level (two tails).
** Significant correlation at the p <0.01 level (two tails).
[1] Positive and Negative Syndrome Scale. [2] Frankfurt Complaint Questionnaire, third version. [3] Clinical Global Impression.
[4] Global Assessment of Functioning scale.

4. DISCUSSION

The results of our study are consistent with the known fact that substance use is high in people diagnosed with a psychotic disorder. In our sample, only 10 subjects (9.52%) can be considered addiction-free (we set the APSAS cut-off point less than 10 to define the "addiction-free" situation). The use of legal substances, cannabis, and behavioural addictions represent the most frequent addictive pattern. In our sample, addictiveness was higher in men compared to women, which is also consistent with the known fact of a higher prevalence of SUD in men (Steel et al., 2014).

The recent recommendations of the United Nations working group for the management of dual disorders (Volkow et al., 2020) warns of the importance of attending to the

'wrong door syndrome'. According to it, diagnosis and treatment of SUD in the mental health and general medical services are ignored, and vice versa. In addition, people with SUD are often excluded from studies of new treatments, therefore making it difficult to create new scientific evidence. Substance use as a risk factor for mental disorders is usually investigated by means of usual questionnaires, usually designed for each of the substances of interest (Chavez et al., 2019). But the systematic collection of anamnesis data on substance use, especially in people with psychotic disorders, can be ineffective without simple and integrated tools. For this reason, we consider that the APSAS scale can be a useful instrument in the psychosocial rehabilitation of people with dual pathology, as it shows construct validity and psychometric consistency to evaluate the addictiveness dimension; this dimension appears independent of the rest of the clinical dimensions in the psychotic disorders. In a complementary study of this monographic number, the association of addictiveness and cognitive disfunction in verbal memory is described (López Lorenzo et al., 2021).

Regarding the possible limitations of the present study, we consider that the main one is that it has been carried out on a population with a probable bias towards an excessive representativeness of SUD. However, the consistency of the obtained results suggests the interest of the addictiveness dimension to improve the prognosis and treatment of patients as complex as those with psychotic disorders and substance abuse. For this reason, new studies, preferably multicenter ones, are recommended to establish an adequate rating of the scale in the Spanish population; however, we hypothesize that the dimensional structure of the scale will show little change. Likewise, it is desirable to study its interobserver reliability and its concurrent validity with other instruments for the evaluation of substance use.

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