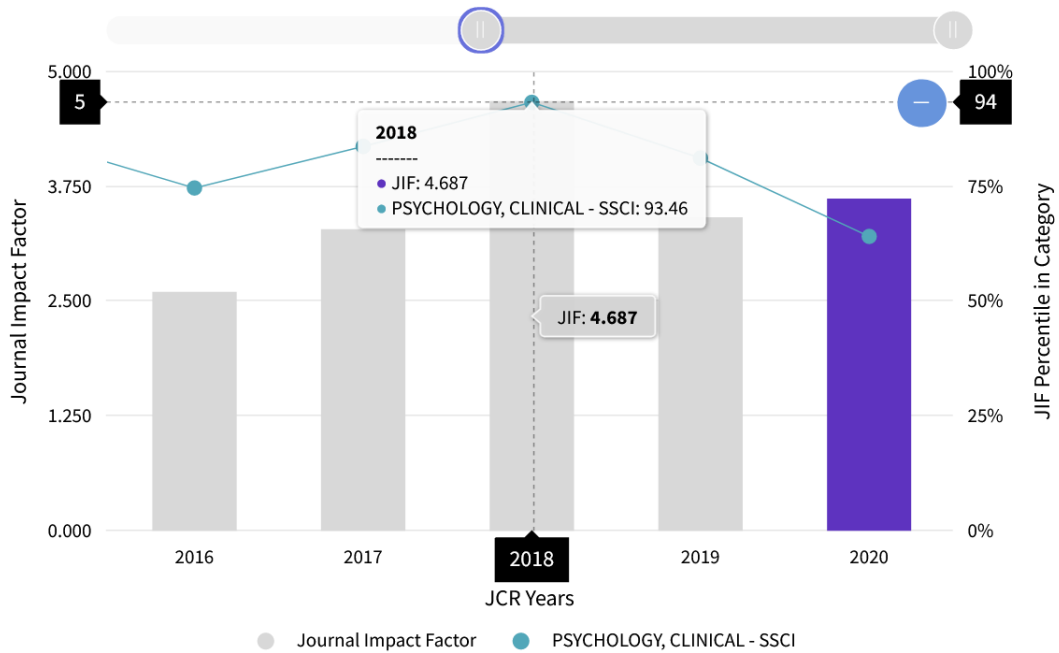6) Moraleda-Barreno, E., Díaz-Batanero, C., Pérez-Moreno, P. J., Gómez-Bujedo, J., & Lozano, O. M. (2018). Relations between facets and personality domains with impulsivity: New evidence using the DSM-5 Section III framework in patients with substance use disorders. *Personality Disorders: Theory, Research, and Treatment, 9*(5), 490-495. https://doi.org/10.1037/per0000278 **(Posición: 9/130; Q1)**.

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BRIEF REPORT

Relations Between Facets and Personality Domains With Impulsivity: New Evidence Using the *DSM-5* Section III Framework in Patients With Substance Use Disorders

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Section III of the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* proposes an alternative diagnostic model for personality disorders based on the identification of pathological personality facets. Despite the existing evidence for the relationship between personality disorders and impulsivity in patients with substance use disorders, no study has yet been conducted within this framework. Thus, using a sample of 110 patients with substance use disorders, the present work aims to (a) analyze the relationship between the different personality facets and domains evaluated by the Personality Inventory for the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (PID-5) and impulsivity and (b) explore the relationships between severity of dependency and personality facets and dimensions of impulsivity. With respect to PID-5 domains, except for sensation-seeking, antagonism and disinhibition showed correlations higher than .30 with the following dimensions: urgency, premeditation, perseverance, sensation-seeking, and positive urgency (UPPS-P). The domains of detachment and psychoticism showed weaker correlations with different UPPS-P dimensions. The risk-taking PID-5 facet explains 49% variability of the sensation-seeking dimension of UPPS-P, whereas the impulsivity facet was significant on regression models computed with lack of premeditation, positive urgency, and negative urgency dimensions. Heroin and cocaine severity of dependence were moderately related to different personality facets. Lower relationships between alcohol and cannabis severity of dependence, impulsivity, and PID-5 facets were found. As a conclusion, the relationships between personality domains and impulsivity behave similarly to their five-factor equivalents for some dimensions but not for negative urgency, which might indicate the lack of specificity of this dimension of impulsivity on this type of patients.

Keywords: DSM-5, impulsivity, personality traits, PID-5, substance use disorders

Impulsivity is a multidimensional construct that has been shown to be of critical importance in many personality models. It directly affects adaptation to the environment and is related to behaviors that carry health risks (Sharma, Markon, & Clark, 2014). In the context of mental health, the literature has consistently shown this construct to be associated with personality disorders (PDs) such as antisocial PD and borderline PD (Grant et al., 2016; Peters, Upton, & Baer, 2013).

One of the populations in which the role of impulsivity has primarily been revealed is that of drug users. The expert literature has consistently shown that high impulsivity is a risk factor for the initiation and maintenance of substance abuse (Bechara, 2005; Cyders, Flory, Rainer, & Smith, 2009; Kreek, Nielsen, Butelman, & LaForge, 2005; Volkow, Koob, & McLellan, 2016). Similarly, numerous studies have typically found a higher prevalence of PDs in drug users compared with the normal population (Compton, Thomas, Stinson, & Grant, 2007; Jané-Llopis, & Matytsina, 2006; Quirk et al., 2016; Samuels, 2011), and relationships between PDs and consumption profiles have also been found. For example, antisocial PD shows high comorbidity with cannabis, opioid, and cocaine use disorders; borderline PD has high comorbidity with both alcohol and cocaine use disorders; and schizotypal PD has been associated with cannabis use disorders (Grant et al., 2016; Pulay et al., 2009; Trull, Sher, Minks-Brown, Durbin, & Burr, 2000). From a clinical perspective, patients with substance use disorders (SUDs) and PDs show poorer treatment outcomes (Bradizza, Stasiewicz, & Paas, 2006; Najt, Fusar-Poli, & Brambilla, 2011).

Previous evidence has led several authors to analyze the relationships between impulsivity, PDs, and SUDs. For instance, Krueger, Markon, Patrick, Benning, and Kramer (2007) presented a model that proposes relationships between antisocial behaviors, substance use, and personality. Literature reviews such as that of Bornovalova, Lejuez, Daughters, Zachary Rosenthal, and Lynch (2005) also indicated the existence of relationships between impulsivity and borderline PD in drug users. Moreover, Kreek et al. (2005) proposed that the link between drug abuse and pathological personality may reflect a risk-taking component of impulsivity.

Some gaps have been detected in the literature linking impulsivity, SUDs, and PDs. For example, the review by Coskunpinar, Dir, and Cyders (2013) for alcohol use and impulsivity showed that the majority of studies have been conducted with a community sample or by comparing clinical groups with control groups. In addition, most of these studies have been carried out within the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* diagnostic framework. The limitations of this classification system for the categorical diagnoses of PDs have been extensively documented (Widiger & Samuel, 2005). However, Section III of the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (*DSM-5*) proposes an alternative diagnostic model based on both the evaluation of functional impairment of personality (Criterion A) and the identification of pathological personality facets (Criterion B). With respect to this second criterion, they propose the evaluation of 25 personality facets configured into five domains (Krueger, Derringer, Markon, Watson, & Skodol, 2012; Krueger & Markon, 2014).

One of the few studies conducted within the framework of the *DSM-5* is that of Few, Lynam, and Miller (2015), who studied the pattern of correlations between the facets and domains of the *DSM-5* and all dimensions of the UPPS (i.e., urgency, premeditation, perseverance, sensation-seeking, and positive urgency) Impulsive Behavior Scale. However, this study was conducted with a sample of 106 patients under treatment (only one with alcohol SUD). A study by Griffin, Lynam, and Samuel (2017) also explored the relationship between UPPS-P and four facets of the Personality Inventory for the *DSM-5* (PID-5) on a community sample. More specifically, they found good coverage of the dimension of sensation-seeking

by the facet of risk-taking and of the dimension of lack of premeditation by the facet of impulsivity. This, however, was not the case for the dimension of urgency, with none of the four facets evaluated being found to specifically represent this component of impulsivity. The dimension of lack of perseverance presented similar correlations with the facets of distractibility and irresponsibility, which led the authors to conclude that these two facets may be redundant. Only weak correlations were found between UPPS-P, PID-5, and substance use variables.

Despite the existing evidence for the relationship between PDs and impulsivity in SUDs, few studies have yet been conducted within the framework of Section III of the *DSM-5*. Thus, using a sample of patients with SUDs, the present work aims to (a) analyze the relationship between the different personality facets and domains evaluated by the PID-5 and impulsivity and (b) explore the relationships between them and the severity of dependency. On the basis of our review of the literature, we expect to find (a) correlations between the dimensions of urgency and the facets related to the domain of negative affect, (b) a relationship between sensation-seeking and risk-taking, (c) correlations between the dimensions of lack of premeditation and lack of perseverance with the facets of the domain of disinhibition, and (d) correlations between the severity of dependence, the facets of impulsivity and risk-taking, and the dimension of negative urgency.

Materials and Method

Participants

The sample consisted of 110 patients diagnosed with SUDs who had begun treatment in two therapeutic communities located in the region of Andalusia, Spain. The fieldwork was conducted between September 2016 and March 2017. During this period, all patients admitted to the therapeutic community were invited to participate, and the following exclusion criteria were adopted: (a) patients with mental disorders that prevented their performance on the tests, (b) patients under 16 years, (c) patients with medication that could affect the execution of the tasks, and (d) patients who did not sign the informed consent form. With these exclusion criteria, two patients with difficult-to-manage mental disorders along with five patients who could not read were excluded from the study. During this period, three patients explicitly refused to participate. In all, 88.7% of the patients were male with a mean age of 37 years (*SD* = 9.9). Of the participants, 13.5% had not completed basic education, 47.4% had reached the primary education level, 38.1% had reached the secondary education level, and only 0.9% had reached the higher education level. Among the participants, 25 were working before the onset of treatment, one was in receipt of benefits, and the remaining were unemployed. Of the sample, 35% was receiving treatment for alcohol abuse, 11.3% for cannabis, 20.3% for cocaine, 3% for benzodiazepines, and 10.5% for heroin. Seventy percent of the sample was receiving treatment for more than one substance.

Instruments

Personality Inventory for *DSM-5*. The reduced 100-item version was administered (Maples et al., 2015), which presents similar psychometric properties to the 220-item version (Bach, Maples-

Keller, Bo, & Simonsen, 2016). The mean value of Cronbach's alpha coefficients reached $\alpha = .80$ on the facets and .82 for domains.

UPPS-P Impulsive Behavior Scale. This test is composed of an inventory of 59 items that evaluate the following five components (dimensions) of impulsive behavior: (a) sensation-seeking, which includes two aspects, namely, the tendency to enjoy and seek exciting experiences and the willingness to try new experiences that can be dangerous or not; (b) (lack of) perseverance, which refers to the ability to remain attentive during a boring or difficult task; (c) (lack of) premeditation, which refers to the tendency to think about the consequences of an act before executing such an act; (d) negative urgency, which is the tendency to manifest impulsive behavior during states of negative affect; and (e) positive urgency, which is the tendency to display this impulsivity during positive affective states (Smith et al., 2007; Whiteside & Lynam, 2001; Spanish version by Verdejo-García, Lozano, Moya, Alcázar, & Pérez-García, 2010). Cronbach's alpha coefficients ranged between .80 and .90.

The severity of dependence was evaluated using the Spanish version of the Substance Dependence Severity Scale (Velez-Moreno et al., 2015). This interview assesses the severity of substance dependence during the 30 days before the interview. It is composed of 11 items that evaluate the seven *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* diagnostic criteria for dependence. The total scores range from 0 to 43. A higher score shows greater severity of substance dependence. Cronbach's alpha coefficients ranged between .88 and .91 for this sample.

Procedure

A psychologist with experience in patient assessment administered the tests. The interviews were conducted individually in the centers where the patients were receiving their treatment. Initially, the clinicians of the therapeutic centers informed the patients of the research. They explained the objectives of the study and informed them of the voluntary nature of their participation. They were also told that the information collected would not be included in their medical history without their express authorization. The Ethics Committee of the Health Research Centres of Huelva, Spain, approved this study.

The raw scores for each of the scales were used for all analyses. After checking for normality, the relationship between facets and domain scores on PID-5 with the UPPS-P dimensions was analyzed using Pearson correlation coefficients. The results are interpreted as a function of effect sizes, where correlations of .50 and above are strong effect sizes, .30 to .49 are regarded as moderate or medium effect sizes, and .29 and below are weak effect sizes (Cohen, 1992). Multiple regression using the entry procedure was conducted to determine which of the 25 PID-5 facets is most strongly related to each of the UPPS-P scales. Facets introduced in each of the five models were those with effect sizes higher than .30. Before the analysis was carried out, a test of collinearity was conducted, obtaining variance inflation factor values ranging between 1.65 and 4.04 and condition index values <23.32. Statistical analyses were carried out using SPSS 20.0.

Results

Table 1 shows the correlations between the facets and domains of the PID with the dimensions of the UPPS-P. The results of the

multiple regression analyses revealed that in the dimensions of lack of premeditation, $F(6, 103) = 7.29$, $p < .001$, $r^2 = .257$, and positive urgency, $F(12, 97) = 4.95$, $p < .001$, $r^2 = .303$, only the facet of impulsivity is retained as a predictor. In the dimension of negative urgency, 17 facets obtained correlations above .30, with anxiousness, deceitfulness, and impulsivity remaining as predictor variables in the regression model, $F(17, 92) = 7.94$, $p < .001$, $r^2 = .520$. For the lack of perseverance dimension, of those facets with correlations greater than .30, depressivity and distractibility were retained in the regression model, $F(9, 100) = 5.02$, $p < .001$, $r^2 = .250$. For the sensation-seeking dimension, of the two facets with correlations greater than .30, only risk-taking remains as the predictor variable, $F(2, 107) = 45.17$, $p < .001$, $r^2 = .448$. With respect to domains, except for sensation-seeking, antagonism and disinhibition showed correlations higher than .30 with all the UPPS-P dimensions. The domains of detachment and psychoticism showed weaker correlations with different UPPS-P dimensions. The negative affect domain is most strongly correlated with the negative urgency dimension.

Table 2 presents the correlations with severity of dependence scores for each of the four main consumption substances. For alcohol users ($n = 58$), there are only moderately sized correlations between severity of dependence and the facet of restricted affectivity ($r = .32$). Among cocaine users ($n = 100$), moderately sized correlations were found with anhedonia ($r = .32$), anxiousness ($r = 34$), depressivity ($r = .30$), impulsivity ($r = .37$), and the negative urgency dimension of the UPPS-P ($r = .31$). Among cannabis users ($n = 52$), correlations between severity of dependence and the remaining variables were weak. Finally, among heroin users ($n = 35$), correlations were obtained with the facets of anxiousness ($r = .34$) and impulsivity ($r = .42$).

Discussion

To our knowledge, this is one of the first studies to analyze the *DSM-5* personality domains and facets with the UPPS-P impulsivity dimensions in a full clinical sample of SUD patients. The chief contribution of this work is the analysis of the differential relationships between facets and domains of personality with the impulsivity construct within the framework of the *DSM-5* alternative personality model. This approach allows for a deeper understanding of such relationships when compared with using the categorical approach. In general terms, the relationships between personality domains and impulsivity behave similarly to their five-factor equivalents for some dimensions but not others (Williams, Suchy, & Kraybill, 2010). As predicted (Few et al., 2015; Griffin et al., 2017), the dimensions of lack of premeditation and lack of perseverance showed stronger correlations with the domain of disinhibition. However, with the exception of detachment, the urgency dimensions showed correlations with all domains, thereby failing to show the expected specificity. Sensation-seeking is the dimension that has the weakest relationship with the personality domains, which might be more related to the sense of well-being (Whiteside & Lynam, 2001). This personality dimension also failed to show relationships with the personality domains in the study by Few et al. (2015).

At the facet level, as hypothesized, positive urgency and negative urgency scores correlated positively with the facets included in the negative affect domain. These results are consistent with the correlations obtained in the work of Few et al. (2015) and Griffin et al. (2017). However, as in these studies, unexpected correlations were

Table 1

Pearson Correlations Between Personality Inventory for Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Facets and Domains and Impulsive Behavior Scale Dimensions (n = 110)

	LPr		NU		LPe		SS		PU	
Facets and domains	r	β	r	β	r	β	r	β	r	β
Anhedonia	.18		.34	−1.14	.34	−0.39	.01		.23	
Anxiousness	.20		.53	2.748*	.17		.23		.28	
Attention-seeking	.23		.10		.21		.16		.19	
Callousness	.28		.36	0.88	.34	0.76	.11		.32	1.24
Deceitfulness	.39	1.14	.47	2.09*	.33	0.56	.11		.42	1.37
Depressivity	.26		.35	0.62	.40	2.06*	.08		.27	
Distractibility	.40	1.51	.50	0.84	.43	1.62*	.07		.38	0.50
Eccentricity	.07		.34	−0.04	.23		.33	0.69	.24	
Emotional lability	.22		.37	−0.57	.09		.01		.31	−0.28
Grandiosity	.13		.28		.25		.23		.37	2.62
Hostility	.29		.40	0.63	.35	0.62	.15		.28	
Impulsivity	.46	2.67*	.65	2.99*	.36	1.18	.28		.50	4.51*
Intimacy avoidance	.06		.03		.16		−.03		.10	
Irresponsibility	.37	0.92	.49	1.28	.38	0.34	.25		.42	2.13
Manipulativeness	.34	0.62	.33	−1.67	.24		.25		.32	−1.02
Perceptual dysregulation	.14		.30	−0.48	.18		.12		.36	2.25
Perseveration	.32	−1.03	.52	0.86	.30	−0.79	.12		.39	−1.50
Restricted affectivity	.01		.08		.11		−.07		.03	
Rigid perfectionism	−.21		.17		−.23		−.04		.16	
Risk-taking	.25		.31	−0.25	.08		.67	6.19*	.30	0.14
Separation insecurity	.10		.21		.03		.03		.26	
Submissiveness	.15		.36	0.60	.22		.15		.29	
Suspiciousness	.26		.40	−1.12	.26		.29		.33	−0.35
Unusual beliefs and experiences	.06		.14		.02		.16		.19	
Withdrawal	.01		.17		.11		−.10		.03	
R^2		0.26		0.52		0.25		0.49		0.30
Negative affect	.22		.47		.12		.15		.37	
Detachment	.10		.22		.25		−.05		.15	
Antagonism	.35		.43		.32		.22		.43	
Disinhibition	.52		.69		.49		.25		.54	
Psychoticism	.11		.34		.18		.27		.33	

Note. LPr = Lack of Premeditation; LPe = Lack of Perseverance; NU = Negative Urgency; SS = Sensation-Seeking; PU = Positive Urgency.
* $p < .05$.

also found with the facets of the domain of disinhibition. Griffin et al. (2017) argued that negative urgency did not seem to have a specific equivalent in any of the PID-5 facets analyzed in their work and speculated whether the emotional lability facet (not analyzed in their research) might be related. In our study, despite the fact that we obtained moderately sized correlations between these two variables, the regression analysis does not maintain this facet as a predictor of negative urgency, but the facets of impulsivity, deceitfulness, and anxiousness were the strongest predictors. In this regard, the literature has pointed to some evidence of the lack of discriminant validity of PID-5 (Crego, Gore, Rojas, & Widiger, 2015), a fact that could explain, in part, these results. Another further explanation could be that the facets that obtain unexpected correlations with the dimensions of urgency are facets that are present in PDs traditionally associated with impulsivity. This is also the case for Antisocial PD (manipulativeness, callousness, deceitfulness, hostility, risk-taking, impulsivity, and irresponsibility) or Borderline PD (emotional deprivation, anxiousness, impulsivity, risk-taking, and hostility), which also present high rates of comorbidity with SUDs (Grant et al., 2016; Peters et al., 2013). Some authors have pointed out that the co-occurrence of SUDs and these PDs can be explained by the overlap of certain personality traits (Ruiz, Pincus, & Schinka, 2008).

With respect to the dimensions of lack of premeditation and lack of perseverance, the correlations obtained with the facets included in the domain of disinhibition are not consistent with our hypotheses, although moderate correlations with irresponsibility and distractibility are observed. In our study, this is presented as the only facet that shows the precognitive capacity of the sensation-seeking dimension. Both results agree with the study by Griffin et al. (2017). The results of the regression analysis reveal that the facets in our study that maintain greater predictive capacity in each of the dimensions of UPPS-P coincide with high correlations in the work of Few et al. (2015), except for the facet of anxiousness, which in our study appears to be predictive of the negative urgency dimension. An explanation for this result may come from the typology of the patient sample, who are initiating treatment and in whom the acute effects of withdrawal from substance use may cause psychiatric symptoms such as anxiety or dysphoria, among others (Brady & Sinha, 2005).

A second contribution of this study is the demonstration of the role of negative urgency and the facets of impulsivity and anxiousness in the severity of cocaine and heroin dependence. Similar results were obtained in the study of Kornør and Nordvik (2007) under the five-factor model, with higher scores on impulsivity and anxiousness in opiate users, although scores in this study are interpreted in relation to

Table 2

Pearson Correlations Between Personality Inventory for Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Facets and Domains; Impulsive Behavior Scale Dimensions; and Severity of Dependence for Each of the Substances

Facets and domains	Alcohol $n = 58$	Cocaine $n = 100$	Cannabis $n = 52$	Heroin $n = 35$
Anhedonia	−.03	.32	−.10	.26
Anxiousness	.22	.34	.14	.34
Attention-seeking	−.17	−.07	.19	−.27
Callousness	−.06	.10	−.00	−.01
Deceitfulness	−.10	.10	−.06	.04
Depressivity	.12	.30	−.13	.23
Distractibility	.10	.20	.17	.14
Eccentricity	.24	.12	.05	.05
Emotional lability	−.09	.22	.07	.09
Grandiosity	−.05	.10	.10	−.06
Hostility	.07	.13	.03	.11
Impulsivity	−.12	.37	−.06	.42
Intimacy avoidance	−.04	.09	.09	−.00
Irresponsibility	.09	.08	.20	−.01
Manipulativeness	.06	.13	−.14	.05
Perceptual dysregulation	−.02	.01	.04	−.06
Perseveration	.07	.09	−.11	.18
Restricted affectivity	.32	.13	.04	−.07
Rigid perfectionism	−.14	.04	−.28	.02
Risk-taking	.03	.15	.12	.03
Separation insecurity	.00	.04	.04	−.03
Submissiveness	−.08	.20	.14	−.00
Suspiciousness	.05	.10	.18	−.16
Unusual beliefs and experiences	.11	.06	.09	.00
Withdrawal	.16	.23	.11	.10
Negative affect	.05	.25	.13	.15
Detachment	.04	.27	.14	.16
Antagonism	.03	.13	.08	.02
Disinhibition	.02	.28	.08	.27
Psychoticism	.15	.08	.16	.00
Lack of premeditation	−.07	.20	.04	.23
Negative urgency	.09	.31	.04	.30
Lack of perseverance	.26	.01	.16	.04
Sensation-seeking	.01	.20	.02	.12
Positive urgency	−.03	.21	−.01	.21

a control group. In previous studies, the negative urgency dimension has been shown to be related to both externalizing dysfunction (Settles et al., 2012) and substance use (Terracciano, Löckenhoff, Crum, Bienvenu, & Costa, 2008). In the study by Griffin et al. (2017), the relationships between the PID-5 facets analyzed with consumption outcome variables show low correlation values, although the sample used is a community sample.

Among cannabis and alcohol user patients, correlations with PID-5 and UPPS-P with the Substance Dependence Severity Scale appear to be weak, although the effect sizes are higher than those obtained in the study by Griffin et al. (2017) for the facets of distractibility, irresponsibility, and risk-taking. The results obtained with alcohol users are similar to those found in the study by Whiteside and Lynam (2009), where alcoholism, independent of antisocial and borderline traits, was not related to impulsive behavior related traits as measured by the UPPS. The review conducted by Coskunpinar et al. (2013) showed effect size values in the relationships between impulsivity and alcohol consumption variables that fall within a wide range (−.05 to 1.02). However, most of the studies included in this review were case–

control studies, which led to greater variability. As for cannabis, the low correlations obtained may be owing to the fact that this substance is consumed in this sample in a complementary way to other substances.

As a conclusion, the results of this study reveal how the approach of examining the relationships between SUD, impulsivity, and personality within the framework of Section III of the *DSM-5* appears to complement previous works (Bechara, 2005; Kreek et al., 2005; Volkow et al., 2016). However, the results have also shown that it is necessary to clarify some of the relationships found, particularly with the dimensions of urgency. Although the present study has generated results of interest in the field of research and clinical practice, it is necessary to bear in mind some limitations. The chief limitation concerns the size of our sample. This is a study with a relatively small sample size of 110 patients, a limitation that is common to many studies using clinical samples (Domínguez-Salas, Díaz-Batanero, Lozano-Rojas, & Verdejo-García, 2016). Despite this, the results revealed considerable effect sizes in the majority of the contrast analyses conducted and, thus, their statistical value should not be questioned.

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