



## ORIGINAL

# Validation of a short Spanish version of the UPPS-P impulsive behaviour scale

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### KEYWORDS

Impulsivity;  
UPPS;  
Confirmatory factor  
analysis;  
Validation;  
Psychometric;  
Spanish

### Abstract

**Aim.** Impulsivity is a multifaceted construct that has a prominent role in psychiatry and especially in addiction. The objective of the current study is to develop and validate a Spanish version of the short UPPS-P impulsive behavior scale<sup>1</sup>, which assesses five distinct impulsivity traits (positive urgency, negative urgency, lack of premeditation, lack of perseverance, and sensation seeking).

**Material and methods.** One hundred and eighty-nine participants were included in the study. Confirmatory factor analyses supported the five-factor model of the original scale.

**Results.** The results indicated good internal reliability. External validity was supported by specific relationships with a scale assessing emotion regulation strategies.

**Conclusion.** Accordingly, the short Spanish version of the UPPS-P scale presents good psychometric properties and may be considered a promising instrument for both research and clinical practice.

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### PALABRAS CLAVE

Impulsividad;  
UPPS;  
Análisis factorial  
confirmatorio;  
Psicometría;  
Versión española

### Validación de una versión breve de la escala de comportamiento impulsivo UPPS-P

#### Resumen

**Objetivo.** La impulsividad es un constructo multifactorial con un papel central en la psicopatología y en especial en las adicciones. El objetivo de este estudio es desarrollar y validar una versión española de la escala breve de comportamiento impulsivo UPPS-P<sup>1</sup>, que evalúa cinco rasgos relacionados con el comportamiento impulsivo: urgencia positiva, urgencia negativa, falta de premeditación, falta de perseverancia y búsqueda de sensaciones.

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**Métodos.** Participaron 189 sujetos que completaron la versión breve de la escala UPPS-P. Sobre esta muestra, se llevó a cabo un análisis factorial confirmatorio que corroboró la validez de la estructura factorial de cinco dimensiones de la escala original.

**Resultados.** Los resultados indicaron buenos índices de fiabilidad. La validez externa de la escala queda apoyada por su asociación específica con una escala de evaluación de estrategias de regulación emocional.

**Conclusión.** La versión breve en español de la Escala UPPS-P presenta buenas propiedades psicométricas y puede considerarse un instrumento prometedor para su uso en contextos de investigación y especialmente por su brevedad en contextos clínicos.

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## Introduction

The construct of impulsivity, which has been included in almost all major models of personality, has been consistently related to psychopathological symptoms and problematic behaviors (e.g., dysfunctional coping strategies). It is now acknowledged that impulsivity is an umbrella construct encompassing a combination of multiple and separable dimensions<sup>2</sup>. In line with multidimensional models of impulsivity, Whiteside and Lynam<sup>3</sup> developed the UPPS Impulsive Behavior scale, which assesses four distinct dimensions of impulsivity: urgency, lack of premeditation, lack of perseverance and sensation seeking. Urgency refers to the tendency to experience strong reactions under conditions of negative affect. Lack of premeditation is the tendency not to think of the consequences of an action before engaging in it. Lack of perseverance refers to the inability to stay focused on a task that can be long, boring or difficult. Finally, sensation seeking is twofold: a) the tendency to pursue exciting activities, and b) the willingness to participate in new experiences that can potentially be dangerous. A fifth dimension has been recently added to the UPPS model: positive urgency, defined as the proneness to act rashly when faced to intense positive affect<sup>4</sup>. These five impulsivity traits can be measured through the UPPS-P, a 59-item self-reported questionnaire<sup>5</sup>. The UPPS-P has recently been translated and validated in the Spanish language<sup>6</sup>.

The different dimensions of the UPPS-P have been meaningfully associated with a number of dysfunctional traits and psychopathological disorders. Negative urgency has in particular been associated with cigarette craving, severity of stimulant addiction, behavioural addiction symptoms (compulsive buying, pathological gambling, cyber-addiction), dimensional elevations on bulimic tendencies, risky sex, suicidal ideations and risk of intimate partner violence<sup>7-15</sup>. Negative urgency, in combination with lack of premeditation, has also been associated with borderline and cocaine dependence diagnoses<sup>16</sup>. Positive urgency has been associated with hazardous drinking, risky sex, recreational drug use and pathological gambling<sup>4,17,18</sup>. Finally, lack of perseverance has been associated (in combination with urgency and lack of premeditation) with insomnia, intrusive thoughts proneness, ADHD, and weight fluctuations in eating disorders<sup>19-22</sup>. Finally, sensation seeking has been specifically associated with drug and alcohol use, gambling, delinquent acts, instrumental aggression and antisocial traits<sup>23,24</sup>.

Our aim here is to develop a short version of the UPPS-P in Spanish. Actually, the original version of the scale is long (59 items), and a short version would be useful for both research and clinical purposes. Recently, a short-version of the UPPS-P scale has been successfully developed in the French language<sup>1</sup>. The French short version of the UPPS-P was found to have a robust five factor structure (established through confirmatory factor analysis), high internal reliability, and strong test-retest stability. Accordingly, the purpose of the current study is to explore the psychometrical properties (factor structure, internal consistency, external validity) of a comparable Spanish version of the short UPPS-P scale. External validity will be explored through the consideration of the specific associations between impulsivity and emotion regulation strategies. Indeed, several of the impulsivity facets measured by the UPPS-P, as well as their postulated underlying mechanism (e.g. poor inhibitory control) have been related to dysfunctional emotional regulation strategies<sup>25,26</sup>.

## Methods

### Participants and procedure

The sample consisted of 189 participants (111 men). The age range was between 18 and 45 years ( $M = 22.44$  years,  $SD = 5.26$  years). They were students from Sport Sciences and Psychology at the University of Granada ( $N = 39$ ) and Optometry at the European University of Madrid ( $N = 150$ ). Participants were selected through a purposive sampling procedure, by including those students who voluntarily wanted to participate. Only native or fluent Spanish speakers were retained for the study. The questionnaires were completed anonymously and participants provided informed consent. No compensation was given for participation in the study.

### Instruments

#### Spanish version of the short UPPS-P impulsivity scale

The Spanish short version of the UPPS-P Scale, consists of 20 items that measure five impulsivity traits (4 items each), namely, negative urgency (items 4, 7, 12 and 17), lack of premeditation (items 1, 6, 13 and 19), lack of perseverance (items 5, 8, 11 and 16), sensation seeking (items 3, 9, 14 and 18) and positive urgency (items 2, 10, 15 and 20)

(Appendix I). To develop the Spanish short UPPS-P, we selected the 20 items of the Spanish original 59-item UPPS-P<sup>6</sup> corresponding to the 20 items retained by Billieux et al<sup>1</sup> for the French short UPPS-P. The items are scored on a four-point Likert scale, ranging from 1 (strongly agree) to 4 (strongly disagree).

### Spanish version of the emotion regulation questionnaire (ERQ)

The emotion regulation questionnaire<sup>27,28</sup> measures two key aspects of active emotion regulation strategies, namely, suppression (i.e. trying to inhibit the outward signs of inner feelings and emotions) and reappraisal (i.e. reappraising the way a situation is experienced so as to decrease its emotional impact). Suppression can be considered a maladaptive emotion regulation strategy, whereas reappraisal is a more adaptive emotion regulation strategy<sup>27</sup>. The questionnaire is composed of ten items (5 per dimension) scored on a 7-point Likert scale, ranging from 1 to 7, where 1 indicates “strongly disagree” and 7 “strongly agree”. For the purpose of this study, we used the Spanish translation of the ERQ validated by Cabello et al<sup>28</sup>.

### Statistical analyses

To determine the factor structure of the Spanish short UPPS-P, we undertook CFAs with maximum likelihood estimation with robust standard errors<sup>29</sup>. We used CFA instead of exploratory factor analysis because the former allows testing specific a priori hypotheses regarding the factorial structure of the scale, which is particularly suited for translations of scales having received prior validations. In the current study, three models that consider the relationships among the five components of impulsivity were computed. The first model holds that there is a single, unitary impulsivity construct. The second model identifies five inter-related impulsivity constructs. Indeed, prior studies conducted with the UPPS-P has shown that the solution that best fits the data consists of five specific but inter-correlated factors, both for the Spanish version<sup>6</sup> and the English version<sup>4</sup> of the scale. Nonetheless, the validation study of the Spanish and the original UPPS-P found very high correlations, on the one hand, between lack of premeditation and lack of perseverance and, on the other hand, between positive and negative urgency<sup>30,6</sup>. Therefore, an additional model including three inter-related factors was tested. In this model, positive and negative items were pooled together, as well as lack of premeditation and perseverance items.

Goodness of fit was tested with  $\chi^2$  (a non-significant value corresponds to an acceptable fit). However,  $\chi^2$  is known to increase with sample size, and some authors have noticed that it is unusual to obtain non-significant  $\chi^2$  values when performing CFAs on self-reported questionnaires<sup>31</sup>. Consequently, in addition to  $\chi^2$ , two other indices that depend on a conventional cut-off were also computed: the root mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR). The combination of these two indices is valuable because the RMSEA is sensitive to the misspecification of the factor loadings, and the SRMR is sensitive to the misspecification of the factor covariances. An RMSEA between 0 and 0.05 indicates a good fit, and between 0.05 and 0.08 an acceptable fit. An SRMR between 0 and

0.05 indicates a good fit, and between 0.05 and 0.10 an acceptable fit<sup>32</sup>. We also reported the Comparative Fit Index (CFI). A CFI > 0.90 is generally interpreted as indicating an acceptable fit. Internal reliability of the short Spanish UPPS-P was measured with the Cronbach's alpha coefficient.

Two-tailed Pearson's correlations (with 5% significance criterion) were used to evaluate relations between the facets of the short Spanish UPPS-P, age, and the other self-reported questionnaires included in the study. Pearson's point-biserial correlation was used to evaluate the effect of gender on the impulsivity facets (women were coded as 1 and men as 2). Pairwise treatment of missing data was used.

## Results

### Psychometric properties of the short Spanish UPPS-P

Of the 189 participants, 5 had one or more items missing after completion of the scale and were removed from the analyses. CFA was then computed on the 20 items of the short Spanish UPPS-P. Three models differing in the way they consider the relationships between the five components of impulsivity were tested. Absolute fit indices of the three models tested are summarized in table 1. First, the results showed that the single-factor model, in which all the items loaded on a unique latent factor, fits the data poorly (table 1, model 1). Therefore, our data confirm that impulsivity is not a unitary construct. Second, as in previous validation studies of the UPPS-P, the model with five distinct but inter-related factors of impulsivity had a good fit (table 1, model 2). Third, the three-factor model regrouping, on the one hand, positive and negative urgency and, on the other hand, lack of perseverance and lack of premeditation, with sensation seeking as a separate factor, fits the data poorly (table 1, model 3).

Mean, standard deviations, internal consistency coefficient (Cronbach's alpha), and correlations between the various components of the short Spanish UPPS-P and other variables are reported in table 2. The Cronbach alpha ranged from 0.61 to 0.81, suggesting acceptable internal consistency for the subscales.

### Correlations between the short UPPS-P and the other measures

Table 2 describes the correlations between the various impulsivity facets with gender, age and emotion regulation strategies. No significant linkage was found between gender

**Table 1** Absolute fit indices of the CFAs for the short Spanish UPPS-P for three models

Model	df	$\chi^2$	RMSEA	SRMR	CFI
Model 1	170	651.20***	0.122	0.118	0.535
Model 2	160	235.75***	0.050	0.064	0.927
Model 3	167	328.33***	0.071	0.078	0.844

\*\*\*p < 0.001.

**Table 2** Descriptive statistics, internal consistency (Cronbach alpha coefficient), and correlations (Pearson) among the subscales of the short Spanish UPPS-P and others variables

Variables	Mean	SD	Alpha	1	2	3	4	5	CogReap N = 188	EmSup N = 188	Sex N = 189	Age N = 186
1. Negative urgency	9.65	2.54	0.68		0.27**	0.17*	0.17*	0.50**	-0.01	-0.17*	0.12	-0.13
2. Lack of premeditation	8.04	2.27	0.78			0.60**	0.27**	0.41**	0.02	-0.08	0.01	-0.18**
3. Lack of perseverence	7.61	2.48	0.79				0.10	0.33**	-0.02	0.10	-0.00	-0.18**
4. Sensation seeking	10.34	2.87	0.81					0.43**	0.16*	-0.15*	-0.11	-0.21**
5. Positive urgency	9.90	2.39	0.61						0.11	-0.11	0.02	-0.24**

\*p < 0.05; \*\* p < 0.01.

and the impulsivity subscales. Age was found to negatively correlate with all facets of impulsivity except negative urgency, meaning that older participants tend to be less impulsive in almost all traits measured by the UPPS-P. Regarding the dimensions of ERQ, cognitive reappraisal is only significantly associated with sensation seeking, whereas emotion suppression is negatively related to negative urgency and positively to sensation seeking.

## Discussion

This study examined the psychometric properties of a short version of the Spanish adaptation of the UPPS-P impulsivity scale developed by Lynam et al<sup>5</sup>. Results showed that the short version of the UPPS-P scale holds a solid theory-driven factor structure, fitting with the theoretical model assumptions and with the psychometric features of the original version. The CFA analysis indicated that the best-fitting model is one that assumes five specific but related factors: positive urgency, negative urgency, lack of premeditation, lack of perseverance and sensation seeking. This is consistent with the results of the validation of the short scale French UPPS-P made by Billieux et al<sup>1</sup>, which is composed of the identical items we used in the current study. In addition, the short version of the UPPS scale showed appropriate internal consistency.

The major finding of the study was the confirmation of the UPPS model factor structure, consisting of five separate but inter-related dimensions<sup>5</sup>. This structure has obtained both theoretical and empirical support, and in fact the different dimensions are specifically associated with a number of psychopathologies (e.g., negative urgency is the best predictor of stimulant dependence, mobile phone dependence and compulsive behaviours proneness)<sup>33-35</sup>. Nonetheless, it is also frequent that different dimensions contribute to explain a single disorder. For example, in the case of problem gambling, it has been shown that adverse consequences resulting from gambling (e.g. financial problems, chasing behaviours) as well as the diagnosis of pathological gambler are predicted by high urgency and low premeditation, whereas high sensation seeking only predicts gambling frequency as well as the type of gambling activities privileged<sup>10,23,36,37</sup>. These findings illustrate how the psychometric evidence of five separate inter-related dimensions suits the clinical findings in terms of significant prediction of valuable clinical constructs.

One of the main motivations for developing a short version of the original UPPS-S scale original is to shorten the time necessary to complete the scale without altering the psychometric properties of the original scale. Based on both the good fit provided by the CFA and the internal reliability coefficients, we conclude that the UPPS-P short scale developed here has a factor structure similar to that obtained in the original UPPS<sup>4,23</sup>, as well as with its French original and short versions<sup>1,38</sup>. This implies that our results support the use of the short UPPS-P for meaningful time-saving (assuming a completion time of 15 per item, completion time for the full original scale would be 15 minutes, whereas only 5 minutes are sufficient to complete the short version). This time reduction makes the use of the UPPS-P scale in everyday clinical practice much easier and practical, considering that professionals often have limited time schedules and a considerable load of patients. In view of the translational potential of the UPPS-P scale, its incorporation into clinical practice may benefit adequate case management and better identification of mediating or risk factors for poorer prognosis. For example, there is evidence of the usefulness of the scale to predict a range of clinical surrogate and outcome variables, such as intensity of cigarette cravings<sup>8</sup>, risk of problem drinking<sup>4</sup>, risk of intimate partner violence<sup>13</sup> or the response to pharmacological treatment in pathological gamblers<sup>39</sup>.

In terms of external validity, specific associations were identified between impulsivity facets and emotion regulation strategies. First, results showed that participants with a high level of sensation seeking tend to use adaptive emotional regulation strategies (reappraisal) more frequently than dysfunctional regulation ones (suppression). Interestingly, Cabello et al<sup>28</sup> found similar relationships between emotion regulation strategies and extraversion, a personality trait that, in turn, correlates with sensation seeking<sup>40</sup>. Although the specific psychological processes underlying these relationships remain to be elucidated, our results support the view that a high level of sensation seeking is not *per se* problematic, in contrast to the other facets of impulsivity. Second, we found that participants with a high level of negative urgency reported a lower tendency to suppress their emotions. This result could be seen as somewhat unexpected as high negative urgency has been extensively related to emotional disorders as well as with the involvement in dysfunctional emotions regulation strategies<sup>25,41</sup>. However, as people with high negative urgency failed to exert self-control when faced to intense



emotions (e.g., saying things they later regret when experiencing a strong emotion of anger), it is possible to hypothesize that they *a priori* assessed themselves as “people who do not keep their emotions for themselves” (although for them this is more the result of failed self-control attempt than the result of an adaptive regulation strategy based on emotional acceptance). Our results do not contradict previous studies, as these have measured emotion regulation strategies with instruments that do not specifically include emotion suppression.

This study holds some limitations to be addressed in future studies. First, the sample was composed by university students, which might reduce generalizability. Nonetheless, as we have argued before<sup>17</sup>, community samples have often shown competence to unveil the clinical relevance of certain psychopathological traits, as has been the case of the original UPPS trait facets in relation to eating disorders or depression<sup>7,25</sup>. Second, we should note that, as mentioned by previous methodological essays<sup>42</sup>, the development of short measures may imply a relative loss of reliability in measurement. In our case, although internal consistency indices slightly dropped with respect to the original Spanish version, they still fell within acceptable levels of psychometric soundness and therefore, this risk is minimized.

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## Conflicts of interest

The authors declare that they have no conflicts of interest.

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## Appendix

Por favor, indica tu grado de conformidad con cada una de las siguientes frases. Si estás “rotundamente de acuerdo”, rodea con un círculo el 1, si estás “algo de acuerdo”, rodea con un círculo el 2, si estás “algo en desacuerdo” rodea con un círculo el 3, y si estás “rotundamente en desacuerdo” rodea con un círculo el 4

Normalmente pienso cuidadosamente antes de hacer cualquier cosa	1	2	3	4
Cuando estoy realmente animado, no suelo pensar en las consecuencias de mis acciones	1	2	3	4
A veces me gusta hacer cosas que dan un poco de miedo	1	2	3	4
Cuando estoy irritado suelo actuar sin pensar	1	2	3	4
En general me gusta asegurarme de llevar las cosas a buen término	1	2	3	4
Mi manera de pensar es normalmente meticulosa y centrada	1	2	3	4
En el acaloramiento de una discusión, con frecuencia digo cosas de las que luego me arrepiento	1	2	3	4
Termino lo que empiezo	1	2	3	4
Disfruto mucho corriendo riesgos	1	2	3	4
Cuando estoy rebosante de alegría, siento que no puedo evitar “tirar la casa por la ventana”	1	2	3	4
Casi siempre termino los proyectos que empiezo	1	2	3	4
Con frecuencia empeoro las cosas porque actúo sin pensar cuando estoy irritado	1	2	3	4
Normalmente tomo mis decisiones mediante un cuidadoso razonamiento	1	2	3	4
Generalmente busco experiencias y sensaciones nuevas y excitantes	1	2	3	4
Cuando estoy realmente contento por algo, tiendo a hacer cosas que pueden tener malas consecuencias	1	2	3	4
Soy una persona que siempre deja el trabajo hecho	1	2	3	4
Cuando me siento rechazado, frecuentemente digo cosas de las que luego me arrepiento	1	2	3	4
Me gustan experiencias y sensaciones nuevas y excitantes, aunque causen un poco de miedo y sean poco convencionales	1	2	3	4
Antes de implicarme en una nueva situación me gusta informarme sobre qué puedo esperar de ella	1	2	3	4
Cuando estoy muy feliz, veo bien sucumbir a mis deseos o darme algún capricho de más	1	2	3	4