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Article

Assessing Impulsivity in Adolescents: Psychometric Properties of the Spanish Short S-UPPS-P

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ABSTRACT

Background: The short S-UPPS-P is a 20-item self-report tool for assessing impulsivity in adolescents, differentiating five dimensions: Negative Urgency, Lack of Perseverance, Lack of Premeditation, Sensation Seeking, and Positive Urgency. This study aimed to evaluate the psychometric properties of the Spanish S-UPPS-P and to establish normative data for adolescents in Spain. **Method**: Participants were 8,944 adolescent students (ages 11–19) from 66 high schools and 789 adolescent psychotherapy patients from 7 centers. **Results**: The expected 5-factor model, evaluated with confirmatory factor analysis (CFA), showed insufficient fit (CFI and TLI ≤ .90, RMSEA = .076). However, an exploratory approach yielded satisfactory results (CFI and TLI ≥ .97, RMSEA ≤ .036), with full measurement invariance across age, gender and sample type. Internal consistency reliability ranged from moderate to excellent (ω = .67–.82). Convergent validity with the Barratt Impulsiveness Scale total score was satisfactory (r = .47–.59). No significant differences in scale scores were observed across gender, age, or sample type, providing the use of a single norm. **Conclusions**: These findings support the S-UPPS-P as a valid, reliable tool for assessing impulsivity in Spanish adolescents. The availability of standardized norms enhances its utility in clinical and educational contexts.

Evaluación de la Impulsividad en Adolescentes: Propiedades Psicométricas de la Versión Corta Española S-UPPS-P

Palabras clave:
Adolescencia
Impulsividad
Baremos
S-UPPS-P
Validación

RESUMEN

Antecedentes: El S-UPPS-P es un instrumento de 20 ítems para evaluar la impulsividad en adolescentes, diferenciando cinco dimensiones: Urgencia Negativa, Falta de Perseverancia, Falta de Premeditación, Búsqueda de Sensaciones y Urgencia Positiva. Este estudio evaluó sus propiedades psicométricas y estableció datos normativos en adolescentes españoles. **Método:** Participaron 8.944 estudiantes (11-19 años) de 66 institutos y 789 pacientes adolescentes de salud mental. **Resultados:** El modelo de cinco factores, evaluado mediante análisis factorial confirmatorio (AFC), mostró ajuste insuficiente (CFI y TLI ≤ .90, RMSEA = .076). Sin embargo, un enfoque exploratorio mostró resultados satisfactorios (CFI y TLI ≥ .97, RMSEA ≤ .036), con invariancia completa del modelo de medida en función de la edad, género y tipo de muestra. La consistencia interna fue moderada a excelente (ω = .67-.82), y la validez convergente con la Escala de Impulsividad de Barratt fue adecuada (r = .47-.59). No se hallaron diferencias significativas en las puntuaciones según género, edad o muestra, permitiendo el uso de un único baremo. **Conclusiones**: Estos resultados apoyan al S-UPPS-P como un instrumento válido y fiable para evaluar la impulsividad en adolescentes españoles. La disponibilidad de baremos aumenta su utilidad en contextos clínicos y educativos.

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Impulsivity is a multifaceted construct defined as "a predisposition toward rapid, unplanned reactions to internal or external stimuli [with diminished] regard to the negative consequences of these reactions to the impulsive individual or others" (Potenza, 2007, p. 5). It has been suggested that high impulsivity may be associated with cognitive impairments and various problem behaviors, as well as engaging in risky behaviors that could potentially contribute to the development of mental health problems (Potenza, 2007).

Adolescence is a developmental stage characterized by heightened emotional reactivity and poor inhibitory control, which makes adolescents more prone than older individuals to impulsive actions and experimentation with potentially risky behaviors, such as drug use, suicidal behaviour, early sexual activity, or delinquent and aggressive behaviors, (Caro-Cañizares et al., 2024; Duell & Steinberg, 2019). However, the availability of assessment tools specifically validated for this population remains limited (Kulendran et al., 2016). Whiteside and Lynam (2001) developed a conceptual framework for impulsivity within the context of the five-factor model of personality (Costa & McCrae, 1985). Based on the analysis of 17 impulsivity-related scales, they identified four distinct facets of impulsivity and created a multidimensional measure known as the UPPS Impulsive Behavior Scale, which includes Negative Urgency, Lack of Premeditation, Lack of Perseverance, and Sensation Seeking. This model was later expanded by Cyders and colleagues (2007) by incorporating Positive Urgency, resulting in the UPPS-P scale. The UPPS-P scale allows for assessment of multiple aspects of impulsive personality, capturing various expressions of impulsivity that are relevant to a range of clinical manifestations in youth, such as in mood disorders (Caro-Cañizares et al., 2024), fetal alcohol spectrum disorders (Kingdon et al., 2016; Mattson et al., 2019; Carrera et al., 2024), Attention-Deficit/Hyperactivity Disorder (Miller et al., 2010) or eating disorders (Mallorquí-Bagué et al., 2020). Notably, Urgency is a core component of impulsivity and a transdiagnostic risk factor for several mental disorders, particularly during developmental adolescence (Littlefield et al., 2016; Sonmez et al., 2024).

After the UPPS-P gained wide acceptance, shorter versions were developed (Billieux et al., 2012; Cyders et al., 2014), reducing the original 59-item scale to 20 items while maintaining the original 5-factor structure. These shorter versions (S-UPPS-P) are frequently used in clinical settings to support professional judgment and streamline multi-step assessments, thanks to their brevity and ease of administration (Rammstedt & Beierlein, 2014). Their reduced cognitive load and shorter completion time make them particularly suitable for adolescents in both clinical and educational contexts (Omrani et al., 2019). Adolescents, compared to adults, are more prone to boredom, cognitive fatigue, and inconsistent adherence to response scales (Fortgang & Cannon, 2022).

Previous research has shown that the 20-item and 5-factor model of the S-UPPS-P provides an acceptable fit in adolescent samples (Donati et al., 2021; Eray et al., 2023; Pechorro et al., 2021; Wang et al., 2020) when its internal structure is evaluated using confirmatory factor analysis (CFA), mostly considering indicators as continuous. Potential competing models (such as a single factor or three interrelated factors grouping Negative and Positive Urgency [as broad urgency] and combining Lack of Premeditation and of Perseverance [labelled as deficits in conscientiousness], while Sensation Seeking remaining separated) have shown to fit worse. Higher correlations have been observed between Negative and Positive Urgency, as well as between Lack of Premeditation and Lack of Perseverance. By contrast, Sensation Seeking is recognized as a distinct dimension of impulsivity, associated with motivational aspects such as novelty seeking, excitement, and arousal, and it operates quite independently of other traits (Billieux et al., 2012). Measurement invariance has been established across various demographic characteristics, including age and gender identities, in different countries and languages (Donati et al. 2021; Fournier et al., 2025; Pechorro et al., 2021; Wang et al., 2020). S-UPPS-P scores have demonstrated poor-acceptable to good internal consistency reliability across diverse languages, with coefficients ranging from .53 to .87 (Donati et al., 2021; Eray et al., 2023; Pechorro et al., 2021; Wang et al., 2020). Regarding convergent validity, low to moderate but statistically significant correlations have been reported between S-UPPS-P Negative and Positive Urgency and Lack of Premeditation and the Barratt Impulsiveness Scale (BIS) scores (Eray et al., 2023).

When comparing scale scores by gender, most studies involving adolescents have found no significant differences, although males tend to score slightly higher than females on the Sensation Seeking subscale (Wang et al., 2020). In terms of age, findings have been more heterogeneous in youth (Sonmez et al., 2024). For instance, in adolescents, Wang et al., (2020) identified differences across all subscale scores except Sensation Seeking. However, other authors have reported no significant differences based on age (Donati et al., 2021; Montasell-Jordana et al., 2025).

Although the shortened UPPS-P (S-UPPS-P) has been translated into many languages, adapted, and validated for use in adolescents (Donati et al., 2021; Eray et al., 2023; Pechorro et al., 2021; Wang et al., 2020), to our knowledge, it has been evaluated in adults (Candido et al., 2012), but no study has yet evaluated the psychometric properties of the S-UPPS-P for adolescents in Spanish. This study aimed to fill this gap by pursuing three specific objectives, both in a community and a clinical sample: a) to test the factor structure, measurement invariance across gender, age, and sample type, and internal consistency of the S-UPPS-P derived scale scores; b) to examine its convergent validity with an alternative self-reported measure of impulsivity (BIS-11-A); and c) to explore the relationship between S-UPPS-P scores and participant characteristics, specifically gender, age, and sample type, and accordingly, to provide normative data for the Spanish adolescent population. Based on previous findings of internal structure, we expect to obtain the best fit for the 5-factor model. We hypothesize a low correlation for Sensation Seeking and a medium correlation for the other S-UPPS-P scale scores with the total BIS-11-A score. We do not expect to find differences in S-UPPS-P scale scores based on age, gender or sample type due to the variety of results of the previous validation studies available.

Method

Participants

In this study, we utilized both a community and a clinical subsample to evaluate the psychometric properties of the Spanish S-UPPS-P scale for adolescents. Participants for the community subsample were recruited using a multi-stage cluster sampling from schools located throughout the territory of Catalonia, Spain. The database of the Department of Education of the Generalitat de Catalunya (Government of Catalonia, 2022a, 2022b) was used to

select schools of different types (private, public and subsidized), as well as different academic courses. Additionally, demographic information regarding population density and family income levels was obtained from the Institut d'Estadística de Catalunya (IDESCAT, 2022a, 2022b) to guide the clustering of the selected schools. A total of 66 secondary schools were randomly selected and considered for the study during the academic year 2021-2022. The inclusion criterion for participants enrolled in these schools was being aged between 11 and 19. Students were excluded if they were in special education or adapted courses, or if they had an insufficient level of reading comprehension in Spanish. For the clinical subsample, a convenience sampling method was used to enroll consecutively admitted inpatients receiving psychotherapy and individuals undergoing day hospital treatment from seven hospitals and day clinics within the (blind) network. These centers provide treatment for people with various mental disorders referred from the main public hospitals. The inclusion criterion for the clinical subsample was the same as those for the community one, with participants aged between 11 and 19. Patients were excluded if they had an IQ below 80 (as assessed by the Wechsler Intelligence Scale [WISC-V]) or the Wechsler Adult Intelligence Scale [WAIS-IV] following the internal protocol of the clinical centers) or if they had an inadequate level of reading comprehension in Spanish.

The initial sample comprised 9929 participants (9024 from community and 905 from clinical settings) who agreed to take part in the study. Data of participants who omitted information or left the administration blank during the data collection process (n = 64), those who fell outside the specified age range (n =108), and those who did not complete the tests (n =24) were excluded, resulting in a final sample of 9733 participants (8944 for the community subsample and 789 for the clinical subsample). Students self-reported socio-demographic information in an *ad hoc* survey, which also included questions on possible mental health disorders. Participants were asked to indicate any diagnoses provided by mental health professionals, referencing a detailed list of specific disorders, with an open-ended option for unlisted diagnoses. In fewer than 10% of schools, psychological disorders were identified by the school's psychological services following survey administration. For the clinical subsample, psychological disorders were diagnosed collaboratively by the Neuropsychology department and the Psychiatry department of Ita Salud Mental using the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition [DSM-V] (American Psychiatric Association, 2013) or the International Classification of Diseases (10th or 11th version) [ICD] (World Health Organization (WHO), 1992; 2024). Sample characteristics are displayed in Table 1.

Instruments

Sociodemographic data. This data was collected *ad-hoc* to characterize the sample, including different variables as place of birth, type of school, disorders self- reported, if they had siblings, or had repeated any course and socioeconomic status of the student population.

S-UPPS–P Impulsivity scale (Cyders et al., 2014; Verdejo-García et al., 2010). This self-report questionnaire consists of 20 items and aims to assess five distinct personality pathways to impulsive behavior: Negative Urgency (e.g., "When I feel rejected, I will often say things that I later regret"), Lack of Perseverance (e.g., "Once I get going on something I hate to stop"), Lack of Premeditation (e.g., "I like to stop and think things over before I do them"), Sensation Seeking (e.g., "I quite enjoy taking risks"), and Positive Urgency (e.g., "I tend to lose control when I am in a great mood"). Each item is rated on a 4-point Likert-type scale ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). Subscale scores are calculated by summing the item responses (reversed when necessary) with higher scores indicating higher levels of each trait. Verdejo-García et al. (2010) used a college sample from Granada (Spain) exclusively to validate the long version of the UPPS-P in young adults.

BIS-11-A (Barratt Impulsiveness Scale, version 11 for Adolescents; Fossati et al., 2002). We used the Spanish version adapted for adolescents by Martínez-Loredo et al. (2015) to evaluate convergent validity, since this test is the most widely used psychometric instrument in the field of impulsivity. The BIS-11-A comprises 30 items measuring motor, unplanned, and attentional aspects of impulsivity. Each item in BIS-11-A presents a statement describing impulsivity-related thoughts or behaviors in different situations. The items are scored on a 4-point Likert-type scale, ranging from 1 (*rarely/never*) to 4 (*almost always/always*). The total score is obtained by summing the item responses, with items reversed when necessary, with higher scores indicating higher levels of impulsivity. In our sample, we found good internal consistency reliability, with an omega coefficient of .84. BIS-11-A views impulsivity as a more global, unidimensional construct involving motor, attentional, and planning-related aspects.

Procedure

The procedure received approval from the ethics committee of (CEEAH nº 6494) and also authorization from the Department of Education of the Government of Catalonia (Spain) for recruiting centers (Register: nº: 9067/490777/2021).

For the community subsample, initial contact was established with the school principals, who were provided with an overview of the research goals and a request for cooperation. Upon agreement to participate, each institution's administration reviewed and approved the detailed study protocol. An information sheet outlining the study was given to each participating institution, along with a video document explaining the study's characteristics, objectives, and guidelines for parental communication. A 2-week notice period was provided to parents, during which they could opt their minor children out of the study. The self-reported questionnaires and an *ad-hoc* survey for socio-demographics and mental health problems were administered collectively during a 1-hour academic session. A teacher assisted with the administration, and the first-author was present to oversee the process. The questionnaires were administered using an online platform to facilitate data collection. All students received an information sheet confirming that their data would be treated confidentially and used solely at the group level. In four centers, the *ad-hoc* socio-demographic survey did not include the section on mental health problems, and diagnoses of mental disorders were reported directly to the first-author by the school services, following their internal data protection protocols.

For the clinical subsample, an information sheet was provided to the centers with a document explaining the characteristics, objectives and procedures for subsequent data handling. Parental consent for minors (< 18) was obtained by email and also collected during

Table 1
Sociodemographic Characteristics of the Final Sample (N = 9733)

		Community (n = 8944)	Clinical (n = 789)
Age; *M* (*SD*)	(Years)	14.7 (1.5)	16.3 (1.7)
Gender; *n* (%)	Male	4376 (48.9%)	168 (21.3%)
	Female	4417 (49.4%)	610 (77.3%)
	Non-binary	151 (1.7%)	7 (0.9%)
	Not-reported	0 (0.0%)	4 (0.5%)
Place of birth; *n* (%)	Spain	8274 (92.5%)	668 (84.6%)
	Other European countries	163 (1.8%)	59 (7.5%)
	Outside Europe	507 (5.7%)	62 (7.9%)
Siblings; *n* (%)	Yes	7520 (84.1%)	663 (84.0%)
Socio-economic status [a]; *n* (%)	Low	1021 (11.5%)	[b]
	Medium-low	3392 (37.9%)	[b]
	Medium	1808 (20.2%)	[b]
	Medium-high	1471 (16.4%)	[b]
	High	1252 (14.0%)	[b]
Current education level; *n* (%)	Primary	0 (0.0%)	3 (0.3%)
	Mandatory secondary high school (ESO)	7529 (84.1%)	461 [c] (58.6%)
	Post obligatory High School pre university studies (ESPO)	1066 (12.0%)	197 (25.0%)
	Post obligatory basic professional education (PFI/FPB)	25 (0.3%)	5 (0.6%)
	Post obligatory formation for middle and superior grades (CFGM/CFGS)	324 (3.6%)	75 (9.5%)
	University	0 (0.0%)	47 (6.0%)
Type of school; *n* (%)	Public	3857 (43.1%)	[b]
	Subsidized	5004 (56%)	[b]
	Private	83 (0.9%)	[b]
Repetition course; *n* (%)	Yes	717 (8.0%)	179 (22.7%)
Disorder	Without disorder	7033 (78.6%)	0 (0.0%)
	Attention deficit hyperactivity disorder	491 (5.5%)	88 (11.1%)
	Language/learning impairment	468 (5.2%)	0 (0.0%)
	Anxiety	406 (4.6%)	47 (6.0%)
	Eating disorders	189 (2.1%)	240 (30.4%)
	Autism spectrum disorders	157 (1.8%)	97 (12.3%)
	Depression/mood disorder	151 (1.7%)	78 (9.9%)
	Borderline personality disorder	3 (0.0%)	77 (9.8%)
	Substance use disorder	0 (0.0%)	60 (7.6%)
	Posttraumatic stress disorder	2 (0.0%)	58 (7.3%)
	Fetal alcohol spectrum disorders	1 (0.0%)	42 (5.3%)
	Other	43 (0.5%)	2 (0.3%)
Treatment	Inpatients	NA	515 (65.3%)
	Day hospital	NA	274 (34.7%)

[a] based on IDESCAT database https://www.idescat.cat/pub/?id=rfdbc. [b] detail not available. [c] Each of the univariate descriptive analyses was performed using list-wise deletion. NA = Not Applicable. *Note.* Language/learning impairment include Developmental Oral Language disorder, Dyslexia, Dyscalculia, Dysorthographia; Eating Disorders include Anorexia I or II, Bulimia or Binge Disorder.

monthly parents' group meetings at each clinical center by the first-author. A 2-week notice period was given to parents, during which they could opt their minor children out of the study. The self-reported questionnaires and the *ad-hoc* survey for socio-demographics were administered collectively during a 1-hour group therapy session with the assistance of a psychologist or individually with any of the research authors who were clinicians. The questionnaires were administered in paper-and-pencil format. All patients received and signed an information sheet assuring them that their data would be treated confidentially and only be used at the group level.

Data Analysis

We conducted the analyses using SPSS 29 and MPlus 8.9 programs. Internal structure of S-UPPS-P items was analyzed with weighted least squares means and variance adjusted (WLSMV) estimator and, when applicable, theta parameterization. First, three models were analyzed with confirmatory factor analysis (CFA) to test whether a single-factor model (Model A1: all items loading on a single factor), a 5-factor model (Model A2: items loading on the expected five intercorrelated factors), or a 3-factor model (Model A3: three intercorrelated factors -broad urgency, lack of conscientiousness, and sensation-seeking-) showed the best fit to the data, following previous research on the S-UPPS-P items. Second, a cross-validation design was used to determine the dimensionality from a more non-restricted (or "exploratory") approach. This was done by splitting the sample randomly into two subsamples of approximately the same size. In the first subsample, exploratory factor analysis (EFA) with the extraction of 1 to 5 factors was conducted, with geomin rotation for multidimensional solutions

(Models B#). For determining the number of factors to retain, we relied on eigenvalues and Cattell's scree test, since parallel analysis is not available in Mplus for categorical indicators. Acceptable salient loadings were considered above .35. In the second subsample, exploratory structural equation modeling (ESEM; Asparouhov & Muthén, 2009) with target rotation was conducted to test if the best EFA solution could be replicated (Model C). ESEM is considered a more flexible approach than CFA because, with target rotation, ESEM estimates the factor loadings of all items on all factors while constraining non-target loadings to be as close to zero as possible. In contrast, CFA restricts each item to load solely onto its intended factor, with all cross-loadings on non-intended factors fixed at zero. For all the factor analyses aforementioned, the common fit indices were used to assess goodness-of-fit (Jackson et al., 2009): Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). The following thresholds were applied (Brown, 2015): an excellent fit was defined as CFI and TLI > .95 and RMSEA < .05, while a moderate fit was considered for CFI and TLI > .90 and RMSEA < .08. And third, for the best-fitting model, measurement invariance of ESEM across gender, age, and sample type (community without disorder, community with any disorder, and clinical) was tested (Models D#, E#, and F#), following the standard sequence (e.g., Vandenberg & Lance, 2000). The process involved testing four models across each group of responses, the last three models each nested in the previous one: configural (resulting ESEM taken as baseline model, with all parameters free across groups except those for model identification), metric or weak invariance (fixing factor loading to be equal), scalar or strong invariance (fixing also item thresholds to be equal), and strict invariance (fixing also uniquenesses to be equal). The factor variance strategy was used for model identification (for detailed steps, see Ezpeleta & Penelo, 2015). Because group sizes were unequal, specific criteria were used to indicate a meaningful worsening of fit and, consequently, non-invariance when comparing nested models: decrease in CFI > .004 and increase in RMSEA > .02 (Chen, 2007). In other words, evidence for the more parsimonious model and, therefore, support for invariance at each step was considered if CFI and RMSEA were as good as or better than for the more complex model (i.e., less constrained): an increase in CFI or a decrease of up to .004 (change up to −.004), and a decrease in RMSEA or an increase of up to .02.

Omega coefficient (McDonald, 1999) was used for evaluating internal consistency reliability of the S-UPPS-P scale scores. The convergent validity with BIS-11-A impulsivity total score was assessed with Pearson's correlation coefficients.

Finally, differences across gender and age (2-factor mixed), and among sample type (1-way) were evaluated with analysis of variance (ANOVA) to establish the need for separate normative data by groups. To define the age stages, we based our categorization on WHO guidelines (2024), Specifically, early adolescence includes ages approximately 10 to 13, middle adolescence from 14 to 16, and late adolescence from 17 to 20, an age range that aligns with our sample distribution. Three criteria were combined to determine the relevant differences of these variables on raw scores. As the main criterion, η^2 effect-size was used applying Cohen's rules of thumb of 0.01 for small, 0.06 medium and 0.14 for large effect (Cohen, 1988). In addition, the following information was considered. The standard error of measurement (SE*m*) was obtained based on the reliability coefficient and standard deviation of the raw scores, and then the 95% CI or range of true scores around the SE*m* values was derived. Lastly, a difference greater than 5-6 points on raw subscale scores was considered as an indicator of practical importance. Normative data for each subscale score were then calculated on the relevant normative reference groups, using T-scores and percentile ranks.

Results

Missing responses for the 20 S-UPPS-P items were very low (Graham, 2009): 0.01%; only 10 participants (0.10%) exhibited missing values for one or more items. Item mean (and standard deviation) values ranged from 1.65 to 2.97 (0.73-1.19). Median (in absolute value) of skewness was 0.35 and kurtosis was 0.81. None of the items showed floor or ceiling effects.

Goodness-of-fit indexes for CFA were insufficient both for the 1-factor and 3-factor models (Table S1, Models A1 and A3: CFI and TLI ≤ .803; RMSEA ≥ .097), and better but not acceptable enough for the 5-factor model (Table S1, Model A2: CFI = .899; TLI = .880; RMSEA = .076, 90% CI [.075, .077]). Moving to an exploratory approach, and regarding EFA in the first subsample of the cross-validation design, the first four observed eingenvalues were above 1 (5.37-1.13), the fifth very little below (0.98), and from the sixth all were clearly below 1 (≤ 0.76). Cattell's scree test also suggested the extraction of three or five factors, the profile clearly flattening from the sixth factor onwards. The 5-factor solution with EFA showed the best fit (Table S1, Model B5: CFI = .985; TLI = .972; RMSEA ≤ 0.36, 90% CI [.034, .039]) and also showed the simplest and most interpretable loading structure (Table 2, left). Fit for this model (consisting of 20 items and five correlated factors) with ESEM in the second subsample was also satisfactory (Table S2 from supplementary material, Model C: CFI = .987, TLI = .975, RMSEA = .035, 90% CI [.032, .037]), and results for factor loadings and factor correlations were very similar (Table 2, right). Both with EFA/ESEM, the pattern of salient factor loadings of S-UPPS-P was as expected: all the items showed the highest factor loading on their intended factor, with values above .35 (all ≥ .41/.45); factor loadings on non-intented factors were all below .20, except for two/one items (.26-.27/.20, which could explain the poor fit, buy by very little, of the 5-factor model when analyzed with CFA). The expected pattern of factor correlations was also observed: .64/.69 between Urgency factors, .46/46 between Lack of Premeditation and Lack of Perseverance, and lower values involving Sensation Seeking (.10-.43/.12-.39 in absolute value).

Subsequently, the ESEM model was used as the baseline configural model for the tests of equivalence of factor loadings (weak or metric invariance), item thresholds (strong or scalar invariance), and item uniquenesses (strict invariance) across gender, age and sample type. Full weak, strong and strict measurement invariance was supported across all types of groups (CFI increased or at most decreased ≤ .004; RMSEA decreased or at most increased ≤ .002). These findings support the cross-group comparability of S-UPPP-P across gender, age and sample types (Table S1, Models D#, E#, and F#).

Table 2

Cross-validation Exploratory Factor Analysis (Standardized Parameters) for S-UPPS-P and Omega Coefficient

		EFA with geomin rotation (n = 4860)					ESEM with target rotation (n = 4873)				
Factor loadings [a]	Item (original numeration)	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5
Negative urgency	6. *When I feel bad, I will…	**.56**	.17	−.04	.06	.03	**.59**	.18	−.11	.10	.02
	8. *Sometimes when I feel bad…	**.74**	.00	−.01	.03	.01	**.82**	−.07	−.12	.06	.03
	13. *When I am upset I often…	**.59**	.02	.19	−.08	.05	**.61**	−.03	.19	−.08	.05
	15. *When I feel rejected …	**.48**	.13	.09	−.08	−.03	**.51**	.10	.06	−.09	−.06
Positive urgency	3.* When I am in great mood …	.04	**.68**	.05	.05	.04	.07	**.64**	.04	.04	.03
	10.* I tend to lose control…	.03	**.80**	−.03	−.03	−.04	.05	**.76**	.00	−.04	−.03
	17. *Others are shocked…	−.04	**.69**	.00	.03	.02	−.03	**.71**	−.03	.03	.02
	20. *I tend to act without thinking…	.02	**.74**	.07	−.03	.02	.01	**.77**	.06	−.03	.03
Lack of premeditation	2. My thinking is usually careful…	.05	.04	**.41**	.26	.00	−.01	.01	**.45**	.20	.03
	5. I like to stop and think…	−.01	.01	**.71**	.06	.05	.01	.00	**.72**	.02	.07
	12. I tend to value and…	.03	.03	**.48**	.18	−.07	−.03	.07	**.58**	.10	−.10
	19. I usually think carefully…	−.01	−.01	**.83**	−.03	.01	−.01	.02	**.83**	−.07	.02
Lack of perseverance	1. I generally like to see things…	.00	.03	−.08	**.68**	.01	.04	.05	−.02	**.69**	.01
	4. Unfinished tasks...	−.12	−.01	.05	**.62**	.06	−.09	.05	.01	**.64**	.08
	7. Once I get going on something…	−.12	−.19	.02	**.46**	−.08	−.14	−.13	.00	**.48**	−.07
	11. I finish what I start.	.16	.00	.05	**.69**	−.01	.18	−.02	.16	**.59**	−.06
Sensation seeking	9. *I quite enjoy taking...	.09	.11	.03	.13	**.64**	.09	.10	.11	.01	**.61**
	14. *I welcome new and exciting…	.11	−.04	−.02	−.01	**.73**	.12	−.05	.03	−.06	**.68**
	16. *I would like to learn to fly...	−.27	.10	−.02	−.02	**.56**	−.18	.07	−.10	.02	**.58**
	18. *I would enjoy the sensation…	−.08	−.05	.04	−.04	**.70**	−.02	−.07	−.03	.02	**.77**
Factor correlations [b] and omega [c]											
	F1 (Negative urgency)	*.74*					*.74*				
	F2 (Positive urgency)	.64	*.82*				.69	*.82*			
	F3 (Lack of premeditation)	.33	.43	*.76*			.35	.44	*.75*		
	F4 (Lack of perseverance)	−.02	.13	.46	*.67*		−.05	.11	.46	*.68*	
	F5 (Sensation seeking)	.30	.43	.24	−.10	*.73*	.28	.39	.18	−.12	*.73*

* Inverse items reversed prior to analysis.

[a] In bold: Salient factor loading above ≥.35. Shaded cells indicate the factor in which the item was assigned, taken into account the content.

[b] For factor correlations: all p-values < .05

[c] In italics: internal consistency reliability (omega coefficient)

Internal consistency reliability ranged from moderate (.67-.68 for Lack of Perseverance) to excellent values (.82 for Positive Urgency) (Table 2, bottom). In terms of convergent validity with the BIS-11-A, the total score correlated highly-moderately with the theoretically most closely related S-UPPS-P subscale scores: .47 with Negative Urgency, .51 with Positive Urgency, and .59 with Lack of Premeditation. Lower correlations were observed for Lack of Perseverance (.27) and Sensation Seeking (.22).

Results from the 3 × 3 two-way ANOVA (gender [females, males, and non-binary] × age [11-13, 14-16, and 17-19 years] (Table S2 from supplementary material, top) and from the one-way ANOVA (sample type [community sample, clinical sample]) (Table S2 from supplementary material, bottom) for S-UPPS-P scores showed very small or null effects for all terms, including interaction for the former (all $\eta^2 \leq 0.033$). In addition, the 95% CI for range of "true" scores based on *SEm* was wider than the range between the highest and the lowest observed group mean (for cells with $n > 30$), which in turn did not exceed the threshold of 5-6 points considered as a cut point of practical importance for the raw scores. Taken as a whole, differences among gender, age and sample type were considered negligible. Therefore, we calculated norms based exclusively on the total sample for each derived scale score. T-scores and percentile ranks are provided in Table 3.

Table 3

Normative Data for the Spanish Adolescent S-UPPS-P (N = 9733)

	NeUr		PoUr		LPrm		LPrs		SeSe	
Score	T	Pc	T	Pc	T	Pc	T	Pc	T	Pc
4	30	2	37	8	31	2	32	3	28	1
5	33	5	40	20	35	8	37	10	32	4
6	36	10	43	30	39	15	41	20	35	9
7	40	17	47	41	44	26	46	35	38	14
8	43	26	50	53	48	42	50	52	42	22
9	47	38	53	65	52	59	55	69	45	31
10	50	50	57	74	56	73	59	82	48	41
11	53	62	60	82	60	84	64	91	51	53
12	57	73	64	89	64	91	68	96	55	65
13	60	83	67	94	68	96	73	98	58	76
14	64	90	70	97	72	98	77	99	61	85
15	67	95	74	99	77	99	82	99	64	92
16	70	98	77	99	81	99	86	99	68	98
M	10.02		7.98		8.57		7.96		10.59	
SD	2.95		2.95		2.43		2.22		3.06	
SEm	1.5		1.3		1.2		1.3		1.6	

Note. T: T-score; Pc: Percentile rank; NeUr: Negative urgency; PoUr: Positive urgency; LPrm: Lack of premeditation; LPrs: Lack of perseverance; SeSe: Sensation seeking. SEm: Standard Error of Measuremen

Discussion

The aim of the present study was to evaluate the psychometric properties of the S-UPPS-P scale and to provide normative data for the Spanish adolescent population. Overall, our results supported the expected internal structure, demonstrating equivalent across gender, age and sample type, along with acceptable internal consistency reliability. Regarding, convergent validity, the S-UPPS-P subscale scores showed moderate to high correlations with the total BIS total score, except for Lack of Perseverance. Furthermore, negligible or no differences were observed in raw scores across gender, age and sample type, allowing for the derivation of a single set of normative data for the entire sample.

The results obtained from the present adolescent sample supported the expected 5-factor internal structure of the S-UPPS–P items, consistent with the original UPPS-P model (Lynam et al., 2006; Whiteside & Lynam, 2001) and previous findings (Donati et al., 2021; Eray et al., 2023; Pechorro et al., 2021). Measurement invariance analyses provided key insights into the comparability of S-UPPS-P scale scores across gender, age, and sample type. Specifically, full measurement invariance was established across all groups, supporting the equivalence of factor loadings and thresholds, and allowing for meaningful group comparisons (Meredith, 1993). This finding partially aligns with previous research, which reported full measurement invariance across age and gender (Wang et al; 2020), only across gender (Donati et al., 2021; Fournier et al., 2024), or failed to achieve it (Pechorro et al., 2021). Our results suggest that the relationships between the items and their underlying latent constructs (e.g., impulsivity traits) are consistent across age, gender and sample types. To our knowledge, no previous study has examined the S-UPPS-P measurement invariance across clinical and community adolescent samples.

Regarding dimensionality, all items had a salient factor loading above .35 on their intended factor. Factor correlations ranged from moderate to strong, except for the value involving Sensation Seeking, which showed lower correlations, evidencing related but distinguishable factors, aligned with the theoretical model underlying the test, with varying magnitudes among different pairs of factors. In line with prior research, the strongest correlations were identified between dimensions more closely linked from a theoretical standpoint (Donati et al., 2021; Eray et al., 2023; Pechorro et al., 2021), such as Negative Urgency and Positive Urgency (Fisher-Fox et al., 2024), and Lack of Premeditation and Lack of Perseverance (Gomez & Watson, 2023). Predictably, Sensation Seeking showed low correlations with the other factors, supporting its distinct nature (Smith et al., 2007). The low correlation between Lack of Perseverance and both Urgency scale scores obtained as in previous research (Donati et al., 2021, Wang et al., 2020) may reflect two different processes as Lack of Perseverance and Lack of Premeditation (cognitive impulsivity) are linked to top-down processing, and Negative Urgency and Positive Urgency (emotional impulsivity) dimensions can be linked to bottom-up processing both linked as for example in Attention-Deficit/Hyperactivity Disorder [ADHD] (Gomez & Watson, 2023).

In relation to internal consistency, the subscale scores exhibited coefficient values ranging from moderate to excellent (ω between .67-.68 for Lack of Perseverance and .82 for Positive Urgency). Our findings align with those obtained in several validation studies of short versions in adolescent populations of the S-UPPS-P (Wang et al., 2020). Notably, Lack of Perseverance has presented smaller internal consistency coefficients than the other scale scores in other short studies in adolescents (Eray et al., 2023; Pechorro et al., 2021).

In assessing convergent validity, Lack of Premeditation showed a moderate to high correlation with the BIS-11-A global score, which was expected given that several items in the BIS-11-A specifically measure aspects of non-planning impulsiveness. The S-UPPS-P provides a more nuanced and clinically informative assessment between profiles or risk factors (e.g., emotional vs. cognitive impulsivity). However, contrary to our expectations Lack of Perseverance scores showed a low correlation with the BIS-11-A global score. Eray et al (2023) is the only study to report a low correlation between Lack of Perseverance and motor impulsivity subscale score of the BIS-11-A. A possible explanation for this low correlation may involve social desirability, as perseverance is seen as a valued trait in adolescence, potentially leading to biased responses (Carvalho et al., 2023; Holden & Passey, 2010; Schoenmakers et al., 2024; Wu, 2025). Additionally, the link between Perseverance and cognitive effort might partially account for this result. Given the ongoing development of executive functions during adolescence, adolescents may exhibit more variability in the capacity to sustain effort, which could attenuate its relationship with impulsivity measures such as the BIS-11-A (Fortgang & Cannon, 2022). Furthermore, the relatively lower reliability observed for the Lack of Perseverance subscale most likely has attenuated the convergent relation with the BIS scale score. Perseverance performance requires a certain level of sustained effort, but beyond a specific point increasing this effort does not lead to further improvement and instead remains constant. This nonlinear performance may partially explain the lower correlation value (Bandalos, 2018). This suggests that Perseverance may counterbalance the tendency to avoid cognitive effort, which often drives impulsivity, especially in adolescence (Patzelt et al., 2019). This is especially relevant in neurodevelopmental disorders like ADHD or fetal alcohol spectrum disorders (FASDs), where impairments in Perseverance contribute to risk-taking behaviors (Eray et al., 2023; Kingdon et al., 2016; Mattson et al., 2019; Miller et al., 2010; Wagner et al., 2024). Finally, Sensation Seeking exhibited a low correlation, as expected taking into account that the BIS-11-A does not specifically assess Sensation Seeking as one of its facets (Smith et al., 2007).

Since the observed differences by gender, age and sample type were considered negligible, normative data were ultimately calculated based on the total sample for each derived scale score. A single S-UPPS-P norm for adolescents aligns with previous studies reporting no literature of no gender differences (Montasell-Jordana et al., 2025; Fournier et al., 2025). This finding matches with the availability of undifferentiated norms by age and gender both in adults (Gialdi et al., 2021; Pinto et al., 2021) and in adolescents in Spain for the long version of the UPPS-P (Montasell-Jordana et al., 2025).

Several limitations must be recognized. We had no opportunity to corroborate self-reported diagnoses with professional clinical diagnoses for most of the community subsample. Resource constraints and limited access to comprehensive diagnostic data precluded the acquisition of accurate and valid diagnostic information from all participants through the psychological services of the schools. Moreover, additional resources for additional self-reported mental health or emotional well-being instruments and neuropsychological tasks to further explore

facets of impulsivity were also unavailable. The results from the non-binary group should be interpreted with caution due to the limited sample size, which may restrict the reliability of the estimates for this subgroup. Nonetheless, our results are based on a very large and diverse sample obtained through random stratification for the community sample, representing the adolescent population across family situations, school types, income levels and population densities. Furthermore, the prevalence of self-reported mental health problems in our samples closely aligns with findings from epidemiological studies of adolescents in Spain (Haro et al., 2006).

Despite these limitations, the present findings suggest that the scores for the Spanish version of the S-UPPS-P have acceptable validity and internal consistency in the adolescent population. Its reduced length may make it more suitable for clinical and survey administration among adolescents compared to longer versions (Omrani et al., 2019), which minimizes the time and effort required for respondents in this population (Fortgang & Cannon, 2022). Given that adolescence is a critical period for the emergence of impulsivity-related disorders, the S-UPPS-P may serve as a useful tool for early identification and risk assessment in clinical settings, and may complement screening efforts as well as therapeutic and clinical services (Fisher-Fox et al., 2024). Moreover, the normative data provided by this study offers a useful resource for future research. Given that adolescence is a critical period for the emergence of impulsivity-related disorders, the S-UPPS-P may serve as a useful tool for early identification and risk assessment in clinical settings (Um et al., 2018). Specifically, it can be incorporated into screening protocols in primary care or mental health services to detect adolescents exhibiting elevated levels of specific impulsivity traits (e.g. Negative Urgency or Lack of Premeditation) as for specific risk profiles for suicide behaviors (Lynam et al., 2011), which are associated with emotional dysregulation or externalizing behaviors.

Author Contributions

Esteve Montasell-Jordana: Conceptualization, Investigation, Validation, Supervision, Funding acquisition, Project administration, Resources, Writing – Original draft, Writing - Review & editing. **Eva Penelo:** Conceptualization, Methodology, Software, Data curation, Validation, Formal analysis, Supervision, Writing – Review & editing. **Laura Blanco-Hinojo**: Conceptualization, Data curation, Supervision, Visualization, Writing – Review & editing. **Beatriz Lanceta**: Investigation, Project administration, Resources. **Laura Gomàriz-Camacho**: Investigation, Project administration, Resources **Anna Soler**: Investigation, Project administration, Resources**. Jesús Pujol**: Conceptualization, Validation, Writing – Review & editing. **Joan Deus**: Conceptualization, Validation, Supervision, Project administration, Resources, Writing – Review & editing.

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Declaration of Interests

The authors declare that there is no conflict of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon request. Supplementary material can be found here: https://figshare.com/s/29528f85a8c8ca5d4fff

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Asparouhov, T., & Muthén, B. (2009). Exploratory structural equation modeling. *Structural Equation Modeling, 16*(3), 397-438. https://doi.org/10.1080/10705510903008204

Bandalos, D. L. (2018). *Measurement theory and applications for the social sciences.* The Guilford Press

Billieux, J., Rochat, L., Ceschi, G., Carré, A., Offerlin-Meyer, I., Defeldre, A. C., Khazaal, Y., Besche-Richard, C., & Van der Linden, M. (2012). Validation of a short French version of the UPPS-P Impulsive Behavior Scale. *Comprehensive Psychiatry*, *53*(5), 609–615. https://doi.org/10.1016/j.comppsych.2011.09.001

Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (2nd ed.). Guilford Press.

Cándido, A., Orduna, E., Perales, J. C., Verdejo-García, A. J., & Billieux, J. (2012). Validation of a short Spanish version of the UPPS-P Impulsive Behaviour Scale. *Trastornos Adictivos*, *14*(3), 73-78. https://doi.org/10.1016/S1575-0973(12)70048-X

Caro-Cañizares, I., Brenlla, M. E., Carballo, J. J., Santos, M., Guija, J. A., & Giner, L. (2024). Suicidal behavior and stressful life events: The mediating role of the impulsivity-aggression-hostility triad through psychological autopsy. *Psicothema*, *36*(4), 380-388. https://doi.org/10.7334/psicothema2023.300

Carrera, P., Román, M., Cáceres, I., & Palacios, J. (2024). Internalizing problems in adopted Eastern European adolescents: The role of the informant, early adversity and post-adoption processes. *Psicothema*, *36*(2), 103-112. https://doi.org/10.7334/psicothema2023.152

Carvalho, C. B., Arroz, A. M., Martins, R., Costa, R., Cordeiro, F., & Cabral, J. M. (2023). "Help me control my impulses!": Adolescent impulsivity and its negative individual, family, peer, and community explanatory factors. *Journal of Youth and Adolescence*, *52*(12), 2545–2558. https://doi.org/10.1007/s10964-023-01837-z

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling, 14*(3), 464–504. http://doi.org/10.1080/10705510701301834

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Elrbaum.

Costa, P. T., & McCrae, R. R. (1985). *The NEO Personality Inventory manual*. Psychological Assessment Resources.

Cyders, M. A., Smith, G. T., Spillane, N. S., Fischer, S., Annus, A. M., & Peterson, C. (2007). Integration of impulsivity and positive mood to predict risky behavior: Development and validation of a measure of positive urgency. *Psychological Assessment*, *19*(1), 107–118. https://doi.org/10.1037/1040-3590.19.1.107

Cyders, M. A., Littlefield, A. K., Coffey, S., & Karyadi, K. A. (2014). Examination of a short English version of the UPPS-P Impulsive Behavior Scale. *Addictive Behaviors*, *39*(9), 1372–1376. https://doi.org/10.1016/j.addbeh.2014.02.013

Donati, M. A., Beccari, C., Bacherini, A., Capitanucci, D., & Primi, C. (2021). Psychometric properties of the short UPPS-P scale in adolescents: Gender, age invariance, and validity among italian youth. *Addictive Behaviors*, *120*, 106987. https://doi.org/10.1016/j.addbeh.2021.106987

Duell, N., & Steinberg, L. (2019). Positive risk taking in adolescence. *Child Development Perspectives, 13*(1), 48–52. https://doi.org/10.1111/cdep.12310

Eray, Ş., Sigirli, D., Yavuz, B. E., Şahin, V., Liu, M., & Cyders, M. A. (2023). Turkish adaptation and validation of the Short-UPPS-P in adolescents and examination of different facets of impulsivity in adolescents with ADHD. *Child Neuropsychology*, *29*(3), 503–519. https://doi.org/10.1080/09297049.2022.2100338

Ezpeleta, L., & Penelo, E. (2015). Measurement invariance of oppositional defiant disorder dimensions in 3-year-old preschoolers. *European Journal of Psychological Assessment, 31*(1), 45–53. http://doi.org/10.1027/1015-5759/a000205

Fisher-Fox, L., Whitener, M., Wu, W., Cyders, M. A., & Zapolski, T. C. B. (2024). Urgency as a predictor of change in emotion dysregulation in adolescents. *Frontiers in Psychiatry*, *15*, 1451192. https://doi.org/10.3389/fpsyt.2024.1451192

Fortgang, R. G., & Cannon, T. D. (2022). Cognitive effort and impulsivity. *Personality and Individual Differences, 199,* 1–9. https://doi.org/10.1016/j.paid.2022.111830

Fossati, A., Barratt, E. S., Acquarini, E., & Di Ceglie, A. (2002). Psychometric properties of an adolescent version of the Barratt Impulsiveness Scale-11 for a sample of Italian high school students. *Perceptual and Motor Skills*, *95*(2), 621–635. https://doi.org/10.2466/pms.2002.95.2.621

Fournier, L., Bőthe, B., Demetrovics, Z., Koós, M., Kraus, S. W., Nagy, L., Potenza, M. N., Ballester-Arnal, R., Batthyány, D., Bergeron, S., Briken, P., Burkauskas, J., Cárdenas-López, G., Carvalho, J., Castro-Calvo, J., Chen, L., Ciocca, G., Corazza, O., Csako, R. I., Fernandez, D. P., … Billieux, J. (2025). Evaluating the factor structure and measurement invariance of the 20-item short version of the UPPS-P Impulsive Behavior Scale across multiple countries, languages, and gender identities. *Assessment*, *32*(5), 635–653. https://doi.org/10.1177/10731911241259560

Gialdi, G., Somma, A., Borroni, S., & Fossati, A. (2021). Factor structure, measurement invariance across gender sub-groups, and normative data for the Italian translation of the UPPS-P Impulsive Behavior Scale in Italian community-dwelling adults. *Mediterranean Journal of Clinical Psychology, 9*(2), e3004. https://doi.org/10.13129/2282-1619/MJCP-3004

Gomez, R., & Watson, S. (2023). Associations of UPPS-P negative urgency and positive urgency with ADHD dimensions: Moderation by lack of premeditation and lack of perseverance in men and women. *Personality and Individual Differences*, *206*, 112125. https://doi.org/10.1016/j.paid.2023.112125

Government of Catalonia, Departament Educació, Serveis Educatius. (2022a). *Centres educatius de Catalunya* [Educational Centers in Catalonia]. https://educacio.gencat.cat/ca/serveis-tramits/directoris-centres/

Government of Catalonia, Departament Educació, Estadistica de l'ensenyament. (2022b). *Estadistica d'Inici de curs 2022-2023* [Statistics for the start of the 2022-2023 academic year]. https://educacio.gencat.cat/web/.content/home/departament/estadistiques/estadistiques-ensenyament/estadistica-inici-curs/estadistica-inici-curs.xlsx

Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual Review of Psychology, 60*, 549–576. http://doi.org/10.1146/annurev.psych.58.110405.085530

Haro, J. M., Palacín, C., Vilagut, G., Martínez, M., Bernal, M., Luque, I., Codony, M., Dolz, M., Alonso, J., & Grupo ESEMeD-España (2006). Prevalence of mental disorders and associated factors: Results from the ESEMeD-Spain study. *Medicina Clinica*, *126*(12), 445–451. https://doi.org/10.1157/13086324

Holden, R. R., & Passey, J. (2010). Socially desirable responding in personality assessment: Not necessarily faking and not necessarily substance. *Personality and Individual Differences, 49*(5), 446–450. https://doi.org/10.1016/j.paid.2010.04.015

IDESCAT (Institut d'Estadistica de Catalunya). (2022a). *Densitat de població. Comarques i Aran, àmbits i províncies* [Population density. Counties and Aran, areas and provinces]. https://www.idescat.cat/indicadors/?id=aec&n=15227

IDESCAT (Institut d'Estadistica de Catalunya). (2022b) *Renda familiar disponible bruta territorial* [Gross territorial disposable household income]. https://www.idescat.cat/pub/?id=rfdbc

Jackson, D. L., Gillaspy, J. A., & Purc-Stephenson, R. (2009). Reporting practices in confirmatory factor analysis: An overview and some recommendations. *Psychological Methods, 14*(1), 6–23. http://doi.org/10.1037/a0014694

Kingdon, D., Cardoso, C., & McGrath, J. J. (2016). Research Review: Executive function deficits in fetal alcohol spectrum disorders and attention-deficit/hyperactivity disorder - a meta-analysis. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *57*(2), 116–131. https://doi.org/10.1111/jcpp.12451

Kulendran, M., Patel, K., Darzi, A., & Vlaev, I. (2016). Diagnostic validity of behavioural and psychometric impulsivity measures: An assessment in adolescent and adult populations. *Personality and Individual Differences, 90,* 347–352. https://doi.org/10.1016/j.paid.2015.11.026

Littlefield, A. K., Stevens, A. K., Ellingson, J. M., King, K. M., & Jackson, K. M. (2016). Changes in negative urgency, positive urgency, and sensation seeking across adolescence. *Personality and Individual Differences*, *90*, 332–337. https://doi.org/10.1016/j.paid.2015.11.024

Lynam, D. R., Miller, J. D., Miller, D. J., Bornovalova, M. A., & Lejuez, C. W. (2011). Testing the relations between impulsivity-related traits, suicidality, and nonsuicidal self-injury: A test of the incremental validity of the UPPS model. *Personality Disorders: Theory, Research, and Treatment, 2*(2), 151–160. https://doi.org/10.1037/a0019978

Lynam, D. R., Smith, G. T., Whiteside, S. P., & Cyders, M. A. (2006). *The UPPS–P: Assessing five personality pathways to impulsive behavior* (Tech. Rep.). IN: Purdue University.

Mallorquí-Bagué, N., Testa, G., Lozano-Madrid, M., Vintró-Alcaraz, C., Sánchez, I., Riesco, N., Granero, R., Perales, J. C., Navas, J. F., Megías-Robles, A., Martínez-Zalacaín, I., Veciana de las Heras, M., Jiménez-Murcia, S., & Fernández-Aranda, F. (2020). Emotional and non-emotional facets of impulsivity in eating disorders: From anorexia nervosa to bulimic spectrum disorders. *European Eating Disorders Review, 28*(4), 410–422. https://doi.org/10.1002/erv.2734

Martínez-Loredo, V., Fernández-Hermida, J. R., Fernández-Artamendi, S., Carballo, J. L., & García-Rodríguez, O. (2015). Spanish adaptation and validation of the Barratt Impulsiveness Scale for early adolescents (BIS-11-A). *International Journal of Clinical and Health Psychology, 15(3),* 274–282. https://doi.org/10.1016/j.ijchp.2015.07.002

Mattson, S. N., Bernes, G. A., & Doyle, L. R. (2019). Fetal alcohol spectrum disorders: A review of the neurobehavioral deficits associated with prenatal alcohol exposure. *Alcoholism: Clinical and Experimental Research, 43(6),* 1046–1062. https://doi.org/10.1111/acer.14040

McDonald, R. P. (1999). *Test theory: A unified treatment*. Erlbaum.

Meredith, W. (1993). Measurement invariance, factor analysis and factorial invariance. *Psychometrika, 58(4),* 525–543. https://doi.org/10.1007/BF02294825

Miller, D. J., Derefinko, K. J., Lynam, D. R., Milich, R., & Fillmore, M. T. (2010). Impulsivity and Attention Deficit-Hyperactivity Disorder: Subtype classification using the UPPS Impulsive Behavior Scale. *Journal of Psychopathology and Behavioral Assessment, 32(3),* 323–332. https://doi.org/10.1007/s10862-009-9155-z

Montasell-Jordana, E., Penelo, E., Blanco-Hinojo, L., Pujol, J., Billieux, J., & Deus, J. (2025). Psychometric properties and normative data of the Spanish UPPS-P Impulsive Behavior Scale in adolescents. *Journal of Personality Assessment, 107(2),* 234–243. https://doi.org/10.1080/00223891.2024.2399184

Omrani, A., Wakefield-Scurr, J., Smith, J., & et al., (2019). Survey development for adolescents aged 11–16 years: A developmental science based guide. *Adolescent Research Review, 4(4),* 329–340. https://doi.org/10.1007/s40894-018-0089-0

Patzelt, E. H., Kool, W., Millner, A. J., & Gershman, S. J. (2019). The transdiagnostic structure of mental effort avoidance. *Scientific Reports, 9*, 1689. https://doi.org/10.1038/s41598-018-37802-1

Pechorro, P., Revilla, R., Palma, V. H., Nunes, C., Martins, C., & Cyders, M. A. (2021). Examination of the SUPPS-P Impulsive Behavior Scale among male and female youth: Psychometrics and invariance. *Children, 8*(4), 283. https://doi.org/10.3390/children8040283

Pinto, A. L. de C. B., Garcia, M. S., Godoy, V. P., Loureiro, F. F., da Silva, A. G., & Malloy-Diniz, L. F. (2021). Psychometric properties and normative data of the Brazilian version of UPPS-P Impulsive Behavior Scale. *Current Research in Behavioral Sciences, 2*, 100052. https://doi.org/10.1016/j.crbeha.2021.100052

Potenza, M. N. (2007). To do or not to do? The complexities of addiction, motivation, self-control, and impulsivity. *The American Journal of Psychiatry, 164*(1), 4–6. https://doi.org/10.1176/ajp.2007.164.1.4

Rammstedt, B., & Beierlein, C. (2014). Can't we make it any shorter? The limits of personality assessment and ways to overcome them. *Journal of Individual Differences, 35*(4), 212–220. https://doi.org/10.1027/1614-0001/a000141

Schoenmakers, M., Tijmstra, J., Vermunt, J., & Bolsinova, M. (2024). Correcting for extreme response style: Model choice matters. *Educational and Psychological Measurement, 84*(1), 145–170. https://doi.org/10.1177/00131644231155838

Smith, G. T., Fischer, S., Cyders, M. A., Annus, A. M., Spillane, N. S., & McCarthy, D. M. (2007). On the validity and utility of discriminating among impulsivity-like traits. *Assessment, 14*(2), 155–170. https://doi.org/10.1177/1073191106295527

Sonmez, A. I., Garcia, J. Q., Thitiseranee, L., Blacker, C. J., & Lewis, C. P. (2024). Scoping review: Transdiagnostic measurement of impulsivity domains in youth using the UPPS Impulsive Behavior Scales. *Journal of the American Academy of Child and Adolescent Psychiatry, 63*(8), 789–812. https://doi.org/10.1016/j.jaac.2024.03.011

Um, M., Hershberger, A. R., Whitt, Z. T., & Cyders, M. A. (2018). Recommendations for applying a multi-dimensional model of impulsive personality to diagnosis and treatment. *Borderline Personality Disorder and Emotion Dysregulation, 5*, 6. https://doi.org/10.1186/s40479-018-0084-x

Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods, 3*(1), 4–70. https://doi.org/10.1177/109442810031002

Verdejo-García, A., Lozano, O., Moya, M., Alcázar, M. A., & Pérez-García, M. (2010). Psychometric properties of a Spanish version of the UPPS-P Impulsive Behavior Scale: reliability, validity and association with trait and cognitive impulsivity. *Journal of Personality Assessment*, *92*(1), 70–77. https://doi.org/10.1080/00223890903382369

Wagner, D., Mason, S. G., & Eastwood, J. D. (2024). The experience of effort in ADHD: A scoping review. *Frontiers in Psychology*, *15*, 1349440. https://doi.org/10.3389/fpsyg.2024.1349440

Wang, Y., Long, J., Liu, Y., Liu, T., & Billieux, J. (2020). Psychometric properties of the Chinese SUPPS-P Impulsive Behavior Scale: Factor structure and measurement invariance across gender and age. *Frontiers in Psychiatry*, *11*, 529949. https://doi.org/10.3389/fpsyt.2020.529949

Whiteside, S. P., & Lynam, D. R. (2001). The Five Factor Model and impulsivity: Using a structural model of personality to understand impulsivity. *Personality and Individual Differences, 30*(4), 669–689. https://doi.org/10.1016/S0191-8869(00)00064-7

World Health Organization. (1992). *The ICD-10 classification of mental and behavioural disorders.* World Health Organization.

World Health Organization. (2024). *Clinical descriptions and diagnostic requirements for ICD-11 mental, behavioural and neurodevelopmental disorders.* World Health Organization.

Wu, P.-C. (2025). Stability of response styles in a personality measure: Evidence with clinical adolescents. *Counselling and Psychotherapy Research, 25*, 12859. https://doi.org/10.1002/capr.12859