Psychometric Properties of a Brief Spanish Version of the Experiences in Close Relationships (ECR) Instrument Applied to Significant Others

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Abstract

Measuring attachment in adulthood is still a challenge. Despite progress in developing brief instruments, there are currently no instruments that assess attachment to significant persons without being limited to a specific type of relationship. The present study aims to develop a brief scale to assess attachment to significant persons (SP), as well as to provide evidence of validity and reliability. For this purpose, the brief Spanish version of the Experiences in Close Relationships instrument was used. 385 emerging adults, divided into two groups, Spanish psychology students and psychotherapists, completed the study online. A two-factor structure (Anxiety and Avoidance) was supported through confirmatory factor analysis. Likewise, evidence of convergent and concurrent validity, respectively, was provided through correlations with the Inventory of Parent and Peer Attachment and the Relational Needs Satisfaction Scale. The scale also demonstrated gender (men vs. women) and age (18-25 years vs. 26-30 years) invariance and adequate internal consistency. The study has allowed us to obtain a brief 11-item psychometrically robust scale—the ECR-SP11—which helps to understand attachment styles in clinical practice and psychotherapeutic research. The instrument's applicability through more heterogeneous samples should be explored.

Keywords

Attachment, anxiety, avoidance, relational needs, psychometrics.

The attachment theory, developed by Bowlby (1969/1982), originally emerged to understand the formation and enduring relevance of emotional bonds between infants and their primary caregivers, usually their parents (Allen, 2023; Santana, 2022). In the 1980s, its scope was expanded to provide a conceptual framework to facilitate research into close relationships between adults, encompassing aspects such as romantic or marital relationships (Shaver & Hazan, 1987). In his work, Bowlby (1988) postulated that attachment behavior is innate and organic, emerging as a fundamental impulse activated in childhood in adverse situations, and highlighting the need to have a secure base to survive. Early experiences with attachment figures are closely related to developing attachment styles and internal functioning models. Likewise, the quality of emotional bonds, characterized by security and support, shapes key aspects of the psyche, such as self-esteem, relational skills, emotion regulation, and stress management. In line with this perspective, Erskine et al. (1999) highlight the importance of security in relationships, incorporating it as one of the eight fundamental relational needs to establish satisfactory bonds. These needs, such as security, validation, acceptance, and expression of love, among others, are intertwined with the fundamental concepts of Bowlby's attachment theory, emphasizing the importance of emotionally meaningful relationships in human development and well-being (Erskine, 2011; Erskine et al., 1999).

Since its inception, the study of attachment styles has grown notably, generating increasing interest in the subject and leading to a multiplication of measurement procedures and instruments (Troisi et al., 2022). However, evaluating different relational aspects in the context of attachment quality is still challenging for researchers and clinicians. To date, Pollard

et al. (2023) have detected two main approaches to measure attachment in adulthood. On the one hand, the tradition of developmental psychology uses the Adult Attachment Interview (AAI) (Main et al., 1985), a semi-structured interview that assesses the coherence of the discourse on children's experiences concerning caregivers and requires extensive and complex training for its subsequent use. On the other hand, the second approach, derived from social psychology, seeks to evaluate attachment through self-reports of emotions, cognitions, and behaviors in close adult relationships (Crowell et al., 1999). Although their methodology differs, both approaches are based on the same theoretical underpinnings of Bowlby (1988). However, due to its use of self-reports, the second approach stands out for its practicality and efficiency, which has led to the development of multiple instruments.

An exhaustive review of the instruments used for the study of attachment from the second approach (Bárez-Palomo et al., 2024; Bartholomew & Horowitz, 1991; Melero & Cantero, 2008; Pierrehumbert et al., 1996) shows that the Experiences in Close Relationships (ECR) scale of Brennan et al. (1998) is relevant and widely used to evaluate affective bonds in different investigations and current studies (McPherson & Devereaux, 2024; Wongpakaran et al., 2023), thus resulting in its multiple adaptations.

Originally, the ECR scale of Brennan et al. (1998) emerged to guarantee psychometric quality and develop a reliable measurement tool based on the attachment theory. Unlike the predominantly categorical model up to that point, the ECR advocates a dimensional approach. This assessment instrument consists of 36 items designed to explore adult attachment styles and is organized into two subscales: Avoidance and Anxiety. These subscales capture individual preferences concerning intimacy. Individuals with an avoidant style tend to seek independence and are uncomfortable with closeness, whereas those who show anxiety often experience fears related to rejection and abandonment (Fraley et al., 2000). While the original version showed psychometric robustness at the time, over time, Fraley et al.'s (2000) Experiences in Close Relationships-Revised Questionnaire (ECR-R) proved to be more accurate than its predecessor and has recently been translated into several languages, such as German (Ehrenthal et al., 2021), Hungarian (Dupont et al., 2022), and Korean (Lee et al., 2023), among others.

Subsequently, a new revision of this questionnaire was carried out, thus creating the Experiences in Close Relationships-Relationship Structures Questionnaire (ECR-RS) (Fraley et al., 2011). This questionnaire is based on Fraley et al.'s (2000) ECR-R. It is used to assess attachment-related anxiety and avoidance in four types of relationships: maternal-filial, paternal-filial, romantic partners, and friends. This version consists of nine items that assess attachment in each of these four domains, resulting in 36 items (Fraley et al., 2011). Based on this version, several adaptations to different languages, such as Swedish (Sarling et al., 2021), Chinese (Zhang et al., 2022), Turkish (Deveci & Şen, 2021), and Spanish (Larrucea-Iruretagoyena & Orue, 2022) have emerged in recent years.

While this test has been shown to have solid reliability scores, some drawbacks make it necessary to continue investigating new ways to measure attachment in adulthood in different contexts and relationships. On the one hand, when observing the composition of this questionnaire, we see that while six items are used for the avoidance dimension, only two items are used for the anxiety dimension, thus revealing a notable disparity in the assignment of items between the two dimensions. On the other hand, although it claims to be an abbreviated version of its predecessors, it cannot be constituted as such because the nine items must be applied equally in all four contexts to compare them. Likewise, the questionnaire presents a bias concerning the type of relationship that is required to measure attachment because it only measures the relationship with parents, the romantic partner, and a friend, again eliminating the possibility of measuring attachment to significant persons without needing to specify the type of attachment.

Among the most noteworthy versions of the ECR scale in Spanish, the version from Alonso-Arbiol et al. (2007, 2008) is worth highlighting. This version comprised 32 items from the original 36, with 17 items for the Avoidance scale and 15 for the Anxiety scale. This version

obtained an internal consistency similar to the results obtained in previous studies where the scale was applied in its original language (Alonso-Arbiol et al., 2007).

On the other hand, the abbreviated version of the ECR-R by Fuertes et al. (2011), originally designed to be applied in the adolescent population, consists of 18 items and shows good fit and reliability for the Anxiety and Avoidance scales in romantic attachment in adolescents. It has nine items that make up the Anxiety subscale and another nine that make up the Avoidance subscale. This version has been widely used in different fields (Wongpakaran & Wongpakaran, 2012) and, due to its solid reliability and brevity, it is used as a reference for the present study.

However, there is still a need to create and use a brief instrument suitable for measuring attachment with significant persons beyond the specific type of relationship they may have. In fact, all the questionnaires and versions of the ECR reviewed present drawbacks either by extension (being too long), by targeting a specific population (such as adolescents), or by delimiting the type of relationship required (attachment to parents, romantic partner, friends). Therefore, based on Fuertes et al.'s (2011) 18-item version, this study aims to carry out and apply an abbreviated version, with adequate dimensional representation, of the ECR scale that can measure attachment to significant persons with psychometric robustness. The study will be carried out with emerging adults between 18 and 30 years of age (Eurostat, 2022), given the close relationship observed between development at this stage and the security and satisfaction experienced in early relationships with significant persons (Ruberman, 2014), as well as in the previously mentioned relationship between attachment and relational needs (Erskine et al., 1999). Content, construct, and concurrent validity will be analyzed through two different samples. We expect it to replicate the two-dimensional structure of previous versions of the ERC and that we will find relationships between relational needs and attachment to significant persons, such that the greater the avoidance and the anxiety, the greater the presence of relational needs.

Method

Participants

Four judges and two samples of emerging adults between 18 and 30 years participated in the study. The four judges, experts in psychotherapy and attachment and with extensive experience in research, contributed to the analysis of the content validity of the instrument and the development of the first version. The first sample of young people was used to check the internal structure of the questionnaire. This group comprised 183 young people of Spanish nationality with an average age of 21 years (*SD* = 3.33). Most participants were students (89.1%) with a graduate degree or a Bachelor's degree (65.6%). Women accounted for 82%, and about half of the participants had a partner (47.5%).

To replicate the identified internal structure, a second sample composed of 202 participants was used, with an average age of 25 years (*SD* = 2.25), among which 89.1% were women and most were single (92.1%). The sociodemographic characteristics of both groups are specified in Table 1.

Table 1. *Sociodemographic data for both samples*

Variable	Value	*n*	%
Sample *n* = 183			
Gender	Man	30	16.4
	Woman	150	82
	Other	3	1.6
Educational level	CSE	1	0.5
	High school	48	26.2
	Vocational training	10	5.5
	Graduatedegree/Bachelor's Degree	120	65.6
	Master's Degree	4	2.2
Couple status	Yes	87	47.5
	No	96	52.5
Occupation	Unemployed	2	1.1
	Student	163	89.1
	Student and worker	10	5.5
	Worker	8	4.4
Sample *n* = 202			
Gender	Man	21	10.4
	Woman	180	89.1
	Other	1	0.5
Grade-course	1st year	112	55.4
	2nd year	37	18.3
	3rd year	7	3.5
	4th year or +	46	22.7
Couple status	Married	15	7.4
	Single	186	92.1
	Divorced	1	0.5
Years of professional practice	0	138	68.3
	1	26	12.9
	2	21	10.4
	3	3	1.5
	4	6	3
	5	4	2
	6	3	1.5

Note: CSE = Compulsory Secondary Education.

Instruments

Sociodemographic questionnaire

This instrument was designed ad hoc to collect relevant information about the participants: date of birth, gender, occupation, level of education, nationality, origin, and marital status.

Experiences in Close Relationships (ECR) scale (Fuertes et al., 2011)

This version of the ECR comprises 18 items, structured in two dimensions applied to romantic relationships: Anxiety and Avoidance. It is rated on an 8-point Likert-type scale ranging from 0 (*strongly disagree*) to 7 (*strongly agree*). In the original study, both dimensions showed acceptable reliability, with Cronbach's alpha coefficients (α) ranging from .70 to .90. This instrument was adapted in this study for use with significant persons.

Inventory of Parent and Peer Attachment (IPPA) (Greenberg et al., 1983, adapted into Spanish by Gallarín & Arbiol, 2013)

This instrument is widely used to assess adolescents' perception of their attachment relationships. It comprises 16 items that explore three dimensions of attachment: trust,

communication, and alienation in relationships with parents and friends. According to the classification criteria of Armsden and Greenberg (1987), individuals are classified into one of two groups based on their scores on the three subscales of the IPPA: the high-security group (secure attachment) or the low-security group (insecure attachment). In this study, the global scale was used exclusively, which showed excellent internal consistency, with Cronbach's alpha coefficient (α) of .96 and McDonald's omega coefficient (ω) of .96.

Relational Needs Satisfaction Scale (RNSS) (Žvelc et al., 2020; adapted into Spanish by Iraurgi et al., 2022)
This scale, composed of 20 items, proposes a model that includes a general relational needs (RN) factor and five of the eight relational needs proposed by Erskine et al. (1999) as second-order dimensions. These are: Authenticity, Support and Protection (security), Having an Impact, Shared Experience, and Initiative of the Other. The internal consistency of the global scale was excellent (α = .896 and ω = .896), and it also shows sufficient reliability in the different dimensions (α between .5 and .75, and ω between .5 and .75).

Procedure

This study was conducted after obtaining the approval of the University Ethics Committee (URL_2021_2022_012). The data were collected online (through Qualtrics) between 2021 and 2023, through a protocol of about 20 minutes, which participants accessed after having read and consented to the ethical conditions of the study (anonymity, confidentiality, voluntariness, etc.), the registration process, and the custody of the data (following the guidelines established by Organic Law 3/2018 on the protection of personal data). The study is the result of the collaboration of three Spanish universities linked to different autonomous communities, and it complies with the guidelines of the Declaration of Helsinki.

Data Analysis

There were two phases: the first was theoretical, and the second was empirical. The first phase consisted of the analysis and adaptation of the items of the short version developed by Fuertes et al. (2011). Total consensus was sought among the four judges regarding: the formulation of the items, the adequacy of the categories of repsonses, and their link with the dimension.

The empirical phase proceeded through 10 steps, as reported in Table S1 in the supplementary material online. The first step, carried out with the first sample, was aimed at confirming the factor structure established by Fuertes et al. (2011) through confirmatory factor analysis (CFA), based on structural techniques of covariance and using the R program, version 4.2.2 (R Core Team, 2020). Due to the lack of normal distribution of the variables, robust estimation methods were used (Maximum Likelihood Robust [MLR]) (Finney et al., 2016). The goodness-of-fit of the hypothesized models was assessed based on the following indices: 1) Satorra-Bentler χ^2 and, given its high sensitivity to sample size (Jöreskog & Sörbom, 1993; Markland, 2007), also the relative chi-squared (χ^2/df), taking as fit criterion a value less than 2; 2) the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). The fit criteria are identified as values for CFI and TLI ≥ .95, RMSEA ≤ .07 (Browne & Cudeck, 1993), and SRMR ≤ .05 (Bagozzi & Yi, 2012).

After observing a lack of fit of the model, the items were systematically analyzed using the following criteria for eliminating items: 1) the mean of the item was above or below the mean plus/minus one standard deviation (*SD*); 2) the item's reduced *SD* (< .5); 3) an increase in the value of alpha if the item were removed (< .2); 4) Pearson's correlation coefficient between the item and the scale < .4.

In Step 3, exploratory factor analysis (EFA) was performed with maximum verisimilitude extraction and oblimin rotation, considering those factors that presented a

factorial loading greater than .4 in a parallel analysis. Previously, we checked satisfaction of the factorization criteria (Kaiser-Meyer-Olkin [KMO]: >.80; Bartlett's sphericity test: $p < .05$). As a result, the scale was reduced to 11 items, which were submitted to confirmatory factor analysis (CFA).

Step 4 followed the same criteria as Step 1: four models were checked: (a) Model 1: a unifactorial model; b) Model 2: a first-order two-factor model; (c) Model 3: a hybrid ESEM model between EFA and CFA with two factors; d) Model 4: Bi-factor model where items load simultaneously on one general factor and two specific factors. Additionally, the models were compared considering three indices: the Scaled χ^2 Difference Test, Akaike's Information Criterion (AIC), and the Bayesian Information Criterion (BIC). The chi-square difference between the models is expected to be significant ($p < .001$), with lower scores on the AIC and BIC indices indicating a model's better fit and lower complexity.

Step 5 analyzed the association with the IPPA scale, continuing with Sample 1 and as evidence of convergent validity. For this purpose, Pearson's *r*-statistic was used, considering small values around .10, medium values around .30, and large values around .50 (Cohen, 1988).

Steps 6 and 7 focused on the second sample. First, in Step 6, the EFAs were replicated, and in Step 7, their correlation with the RNSS was verified through the *r*-statistic as evidence of concurrent validity.

Once the factor model with the best fit to the data in both subsamples was identified, we worked with the joint sample. Through Steps 8 and 9, we checked the power of the model and its gender (male vs. female) and age invariance (< 24.9 and > 25). Five levels of invariance were tested, with increasing restrictions: (1) configural (structure equality), (2) metric (factor load equality), (3) scalar (equality of intercepts of the observed variables), (4) latvar invariance or latent factor variances, 5) latcov invariance (equality of covariances between latent factors). In addition to the AIC and BIC indices, the increase (△) was considered in RMSEA, CFI, and SRMR between the models, such that △CFI > .01, △RMSEA > .015, and △SRMR > .03 in the SRMR indicated a significant decrease in the model's fit (Chen, 2007).

Step 10, the last step, allowed identifying the descriptive statistics of the global instrument and its dimensions (mean, standard deviation, asymmetry, and kurtosis, and internal consistency—α and ω), and, finally, the differential measures in the dimensions of the scale according to gender and age, using Student's *t*-test.

Results

After checking the lack of fit of the adapted version of the ECR (ECR-PS18), (scaled χ^2 (*df*) = 259.567 (134), $p < .001$, CFI = .803, TLI = .775, RMSEA = .072, 95% CI [0.062, 0.090], SRMR = .088), the descriptive characteristics of the instrument were analyzed and an EFA was conducted (see Table 2). The data were assumed with caution as only Bartlett's sphericity index (χ^2 (153) = 843.1, $p < .001$) was adequate but not the KMO (.76). Following the established criteria, the adequacy of Items 1, 2, 11, 17, and 18 was questioned, as they had a mean lower than the interval; as well as Items 1, 7, and 11 because they presented a correlation lower than < 0.4 with their factor. This led to reducing the items to 11, with 6 linked to the Avoidance dimension and 5 linked to the Anxiety dimension. A new EFA with all 11 items showed adequate factorization indices (KMO = .81; Bartlett's sphericity test: χ^2 (55) = .424.6, $p < .001$) and a two-dimensional structure with loadings higher than .5 (see Table 3). The internal consistency of the items (α and ω) of both dimensions was very high (F1 = .97; F2 = .87; Total scale = .926).

Table 2. *Exploratory descriptive and factor analysis of the ECR-SP18 (n = 183)*

Items	*M*	*SD*	*r*	α	Fact	Eigenvalue	Explained Variance	F 1	F 2	F 3	F 4
1.	5.7	1.372	-.17	.791	1	3.69	12.71				0.995
2.	2.5	1.485	.316	.763	2	1.44	12.59		0.41		
3.	3.8	2.094	.354	.749	3	0.51	8.77	0.63			
4.	3	1.747	.395	.758	4	0.4	6.86		0.58		
5.	3.1	1.757	.382	.759		Total	40.9		0.62		
6.	3.6	1.988	.359	.751				0.63			
7.	3	2.195	.183	.766							
8.	2.7	1.791	.448	.749					0.48		
9.	3.2	1.908	.427	.752							
10.	3.4	1.907	.297	.763				0.54			
11.	6	1.231	-.18	.789							
12.	3.7	1.948	.365	.756				0.64			
13.	4.2	1.787	.215	.766				0.49			
14.	3.7	1.975	.327	.761				0.57			
15.	3	1.68	.479	.758					0.72		
16.	2.8	1.686	.378	.753					0.49		
17.	2.3	1.5	.334	.764						0.41	
18.	2.3	1.505	.518	.757						0.99	
Global	3.4	0.8		.772							

Note: ECR-SP18 = Experiences in Close Relationships Scale-Significant Persons (*initial version)*

Table 3. *Exploratory descriptive and factor analysis of the initial version of the ECR-SP11*

Items	*M*	*SD*	*r*	α	Fact	Eigenvalue	Explained Variance	F 1	F 2
1.	3.79	2.094	.52	.733	1	2.543	18.6	.639	
2.	2.96	1.747	.352	.754	2	1.179	18.0		.604
3.	3.11	1.757	.393	.75		Total	47.771		.548
4.	3.55	1.988	.479	.739				.613	
5.	2.73	1.791	.421	.746					.551
6.	3.4	1.907	.374	.752				.524	
7.	3.7	1.948	.463	.741				.644	
8.	4.23	1.787	.323	.758				.507	
9.	3.71	1.975	.413	.747				.571	
10.	2.95	1.68	.393	.75					.792
11.	2.8	1.686	.408	.748					.531
Global	3.36	1.01		.765				.639	

Note: ECR-SP11 = Experiences in Close Relationships Scale-Significant Persons. See scale in Table S2 in supplementary material online.

The next step was to analyze the suitability of the instrument through CFA. The models considered (unifactorial, two-factors, ESEM, bi-factor) are shown in Table 4. With the exception of the unifactorial model, the other three contrasted models showed an acceptable fit, with significant differences with the unifactorial model ($\chi^2 = 184.8$, $p < .001$). However, the ANOVA showed that the ESEM model had the best fit. The model's adequacy was also supported by the factorial loadings (Table S2 in the supplementary materials). All items loaded above .50 on their respective factor and with very low cross-loadings.

Table 4. *Comparative ANOVA of the estimated models*

FIRST SAMPLE	***n***	**χ^2_{scaled}**	***Df***	**χ^2/df**	***p***	**RMSEA (CI)**	**CFI**	**TLI**	**SRMR**	**AIC**	**BIC**	**χ^2 *diff***	**Pr(>χ^2)**
Model 3	183	22.307	34	0.656	.916	.000 (.000-.014)	1.000	1.046	.031	7823.8	7926.5		
Model 4	183	23.056	34	0.678	.922	.000 (.000-.020)	1.000	1.047	.042	7822.1	7924.8	-1.654	
Model 2	183	32.097	43	0.746	.889	.000 (.000-.026)	1.000	1.041	.044	7814.4	7888.2	8.970	.44
Model 1	183	154.584	44	3.513	<.001	.124 (.103-.145)	.677	.596	.115	7948.8	8019.4	184.8	<2e-16 ***
SECOND SAMPLE	***n***	**χ^2_{scaled}**	***Df***	**χ^2/df**	***p***	**RMSEA (CI)**	**CFI**	**TLI**	**SRMR**	**AIC**	**BIC**	**χ^2 *diff***	**Pr(>χ^2)**
Model 3	179	56.573	34	1.66	.009	.073 (.037-.105)	.966	.945	.039	6174.5	6276.5		
Model 4	179	6.941	34	1.792	.003	.071 (.041-.099)	.967	.947	.082	6163.2	6265.2	-11.33	
Model 2	179	73.122	43	1.700	.003	.073 (.043-.101)	.956	.944	.062	6175.5	6248.8	13.70	.13
Model 1	179	346.188	44	7.86	<.001	.196 (.180-.213)	.589	.566	.205	654.6	661.7	458.3179	<2e-16 ***

Note: Model 1: Unifactorial; Model 2: Two first-order factors; Model 3: ESEM with two factors; Model 4: Bi-factor. RMSEA = root mean square error of approximation; CFI = comparative fit index; TLI = Tucker-Lewis index; SRMR = standardized root mean square residual; AIC = Akaike information criterion; BIC = Bayesian information criterion.
*** $p < .001$.

Finally, based on this first sample, the correlation between the Avoidance and Anxiety subdimensions and the IPPA scale was analyzed. The result was a negative and moderate correlation only with the Anxiety subdimension (r = -.300, p < .001).

Next, the factor structure was checked in the second sample, considering the four previous models (Table 4). Also in this sample, the ANOVA identified the ESEM model as the most suitable and differentiated it from the unifactorial model (χ^2 = 458.3, p < .001). The direct factorial loadings (> .661) and the cross-loadings (< .107) were also adequate (S2). However, χ^2 was significant and RSMEA was slightly higher than ideal. It should also be noted that the bifactor model showed the existence of a general factor that was not sufficiently robust (Table S3 in the supplementary material online).

Finally, the correlation between the two dimensions and the subscales of the RNSS was verified in the second sample (Table 5), finding moderate and even high correlations with the different subscales.

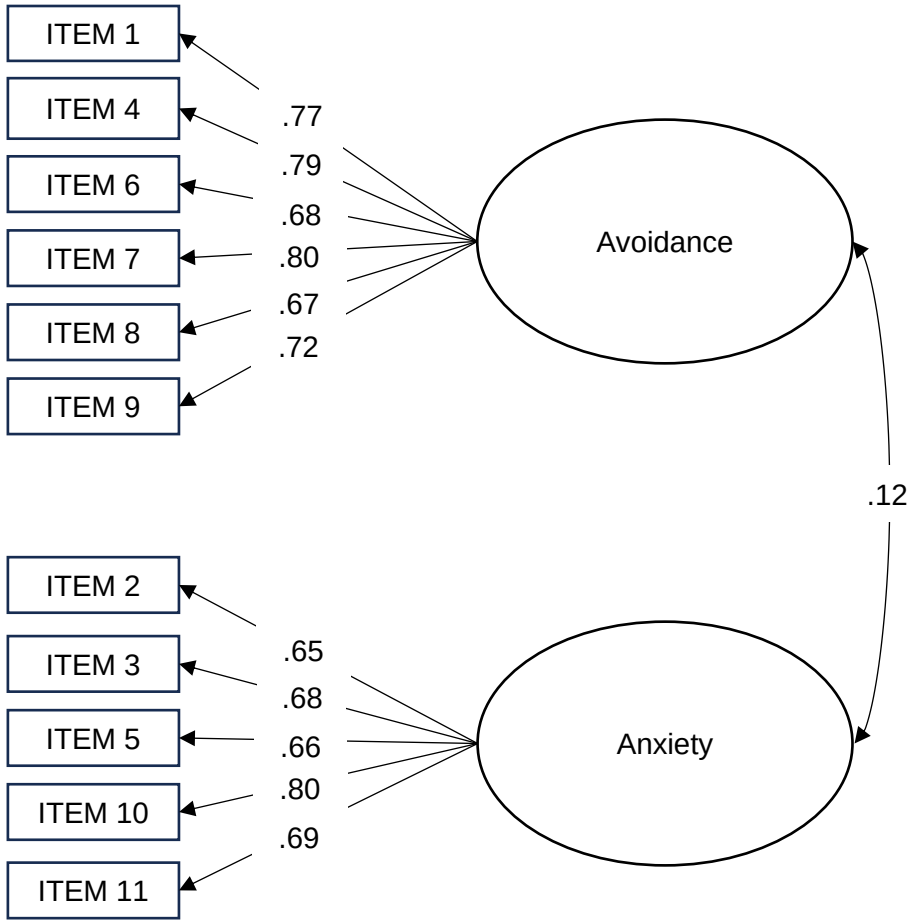
Table 5. *Correlations between the subdimensions of the ECR-SP11 and the dimensions of the RNSS*

	1	2	3	4	5	6	7
Anxiety	-						
Avoidance	-.208**	-					
RNSS	-.287**	.593**	-				
Authenticity	-.346**	.617**	.764**	-			
Having an impact	-.103	.305**	.694**	.420**	-		
Protection	-.205**	.500**	.775**	.497**	.437**	-	
Initiative of others	-.223**	.328**	.808**	.475**	.485**	.486**	-
Sharing experiences	-.159*	.420**	.768**	.469**	.472**	.637**	.523**

*Note: ** p < .05. *** p < .001*.

The following analyses were conducted with the joint sample, checking the suitability (scaled χ^2 (*df*) = 38.689 (34), p < .266, CFI = .966, TLI = .993, RMSEA, 95% = .023 [0.000, 0.052], SRMR = .024), the value of the observed power (88%: (RMSEA $p \geq .05$, n = 362), and the factorial loadings (Table S2 in the supplementary material online). All fit indicators were excellent. The model is represented in Figure 1.

Figure 1. *Experiences in Close Relationships Scale. Brief Spanish version applied to significant persons. Exploratory Structural Equation Modeling Model (ESEM) with two factors.*



The next step was to perform a multigroup factor analysis to check the instrument's invariance according to the participants' gender. For this purpose, five models were considered, with increasing restrictions of equality parameters, shown in Table 6. The results allow us to assume invariance at all levels of both gender and age, as the increases are less than .01 in CFI, .015 in RMSEA, and .03 in SRMR. We only found one exception in the metric model in the contrast as a function of age (ΔRMSEA < .015 and ΔSRMR < .030), but invariance was assumed following the criterion of Rutkowski and Svetina (2014).

Table 6. *Analysis of invariance according to gender (male vs. female) and age (< 24.9 vs. < 25)*

Gender Invariance	**Scaled χ^2**	**Scaled *df***	***p***	**RMSEA (CI)**	**Scaled CFI**	**SRMR**	**Comparison**	**∆RMSEA**	**∆CFI**	**∆SRMR**	**χ^2**	***df***	***p***
Configural	82.438	68	.112	.034 (.000, .066)	.990	.027							
Metric	101.651	86	.119	.032 (.000, .059)	.989	.035	Configural vs. metric	0.002	0.001	-0.008			
Scalar	108.218	95	.167	.028 (.000, .055)	.991	.036	Metric vs. scalar	0.004	-0.002	-0.001			
Latvar	112.669	97	.132	.030 (.000, .055)	.989	.045	Scalar vs. Latvar	-0.002	0.002	-0.009			
Latcov	113.931	98	.130	.030 (.000, .056)	.989	.048	Latvar vs. Latcov	0	0	-0.003			
Age Invariance	**Scaled χ^2**	**Scaled *df***	***p***	**RMSEA (CI)**	**Scaled CFI**	**SRMR**	**Comparison**	**∆RMSEA**	**∆CFI**	**∆SRMR**	**χ^2**	***df***	***p***
Configural	65.582	68	.561	.000 (.000, .046)	1.000	.027							
Metric	10.177	86	.141	.030 (.000, .059)	.988	.054	Configural vs. metric	-0.03	0.012	-0.027	34.6	18	.01*
Scalar	106.821	95	.192	.026 (.000, .054)	.990	.054	Metric vs. scalar	0.004	-0.002	0	5.9	9	.74
Latvar	118.608	97	.067	.035 (.000, .060)	.982	.098	Scalar vs. Latvar	-0.009	0.008	-0.044		2	
Latcov	124.735	98	.035	.039 (.012, .063)	.977	.110	Latvar vs. Latcov	-0.004	0.005	-0.012	4.9	1	.02*

Note: RMSEA = root mean square error of approximation; CFI = comparative fit index; SRMR = standardized root mean square residual.

Finally, Table 7 shows the descriptive characteristics of the instrument (see final version in Table S4 in the supplementary material online) The internal consistency of both dimensions was higher than .80, although somewhat lower for the global scale. There were no differences according to gender in any of the dimensions, and participants under 25 seem to have a higher level of avoidance.

Table 7. *Descriptive statistics and mean differences according to gender and age*

	n	*M*	*SD*	Asim	Kurtosis	α	ω
Anxiety	362	15.27	6.88	.62	-.18	.82	.83
Avoidance*	361	19.83	9.01	.56	-.47	.88	.88
ECR11-SP	361	35.10	1.81	-.04	-.75	.74	.77

	< 24.9 (*n* = 272)		> 25 (*n* = 85)				
Age	***M***	***SD***	***M***	***SD***	***t***	***p***	***d***
Anxiety	15.00	6.78	15.90	7.27	-1.05	.29	-.13
Avoidance*	21.40	9.11	14.40	6.38	6.66	< .001	.83
Total	36.50	1.54	3.30	1.47	4.71	< .001	.59

	Man (*n* = 50)		Woman (*n* = 308)				
Gender	***M***	***SD***	***M***	***SD***	***t***	***p***	***d***
Anxiety	14.50	6.36	15.40	7.00	-.90	.37	-.14
Avoidance*	21.78	7.96	19.50	9.18	166.00	.10	.25
Total	36.24	1.31	34.90	1.95	.81	.42	.12

*Note: The Avoidance dimension has been recoded, so that in both dimensions > Represents the variable > Avoidance or Anxiety.

Discussion

The main objective of this study was to develop a scale to assess the attachment style toward significant persons in adulthood based on an adapted version of the ECR scale by Fuertes et al. (2011): the 11-item Experiences in Close Relationships Scale-Significant Persons (ECR-SP11).

The findings obtained in this study support the suitability of the proposed scale.

First, the factorial validity of the scale was examined in a sample of Spanish psychology students and psychotherapists, all of whom belong to the demographic group of emerging youth. Through confirmatory and exploratory factor analyses, the study's results led to 11 items organized into two factors: Anxiety and Depression. It is a coherent and replicable structure, which coincides with the original arrangement of the ECR scale by Brennan et al. (1998), adapted to Spanish by Alonso-Arbiol et al. (2007), as well as with the subsequent adaptations, not only to Spanish (Fuertes et al., 2011) but to other languages (see Ehrenthal et al., 2021; Dupont et al., 2022; Lee et al., 2023; and Machan, 2022). This two-dimensional structure promotes theoretical support in a conceptual framework that contemplates the processes underlying interpersonal and intimate relationships with significant persons within the context of attachment styles.

Likewise, the invariance analysis according to the participants' gender and age was satisfactory, revealing the model's consistency in different demographic groups. Concerning gender, the instrument behaved the same when applied to men and women, contrasting with Lee et al.'s (2023) adaptation to the Korean sample. On the other hand, the present model has shown age invariance, although the two contrasted groups (< 24.9 and > 25) are in the same range of emerging young people. In this sense, in future studies, the instrument's

invariance should be confirmed in other age ranges, as in the study of Dupont et al. (2022), using a much more heterogeneous sample in terms of age.

Concerning convergent validity, the instrument correlated significantly and coherently with the IPPA (Greenberg et al., 1983) scale adapted to Spanish by Gallarín and Arbiol (2013). The results showed that the Anxiety score on the ECR-SP11 scale is related to decreased IPPA scores. However, studies like that of Waters et al. (2021) have questioned the IPPA scale as a tool for assessing attachment, so future studies should analyze this validity with other, more appropriate instruments.

Likewise, concerning concurrent validity, we verified the association between the ECR-SP11 scores and relational needs using the Spanish version of the RNSS (Žvelc et al., 2020; adapted by Iraurgi et al., 2022). These results were obtained both when considering the total scores and the different dimensions, such that lower satisfaction of relational needs (Authenticity, Having an Impact, Support and Protection, Initiative of the Other, and Shared Experience) is moderately and significantly linked to greater anxiety and lower avoidance. This implies that people with unsatisfied relational needs tend more toward avoidance. These findings suggest that attachment styles relate to how people experience and satisfy their relational needs in the interpersonal context and how they establish new bonds.

In conclusion, the scale seems capable of measuring attachment to significant persons in adulthood, regardless of the type of relationship, which is an important contribution. To date, the adaptations of this instrument have focused exclusively on a single reference figure, either partners, parents, or close friends, and the instrument must be completed repeatedly to analyze each figure separately, neglecting relationships with people who do not fall into these categories.

In turn, it is essential to recognize the limitations of this study to contextualize its findings adequately. First, the sample used was relatively limited and composed mainly of women, generating an unequal gender distribution. Although the invariance analyses indicated that the scale functioned similarly in both the female and male subgroups, more evidence of the instrument's validity should be collected in samples including more men. We also note that the sample came from a normalized, nonclinical population, which could limit the applicability of the results to clinical populations or individuals with specific mental health characteristics. Likewise, as indicated, the age range should be extended for a greater generalization of results. Another limitation concerns the choice of the IPPA as an instrument to provide evidence of convergent validity, and other alternative instruments should be considered.

With a view to future research lines, the instrument's suitability should be confirmed through longitudinal studies to evaluate its temporal stability. Likewise, we acknowledge the need to continue working to ensure reliability and provide validity evidence in different cultural, demographic, and clinical contexts and in age- and gender-diverse populations.

In summary, the present work provides a brief and psychometrically robust instrument that can be used in research and intervention to advance toward a better understanding of the mechanisms underlying interpersonal relationships. At the intervention level, the instrument will play a significant role in psychotherapy, where the therapeutic bond is central. The information provided by the scale can support the therapist's work toward appropriate inquiry, fine attunement, and genuine engagement to explore and work on the client's attachment patterns safely (Erskine et al., 1999).

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References

Alonso-Arbiol, I., Balluerka, N., & Shaver, P. R. (2007). A Spanish version of the Experiences in Close Relationships (ECR) adult attachment questionnaire. *Personal Relationships, 14*(1), 45-63. **https://doi.org/10.1111/j.1475-6811.2006.00141.x**

Alonso-Arbiol, I., Balluerka, N., Shaver, P. R., & Gillath, O. (2008). Psychometric properties of the Spanish and American versions of the ECR adult attachment questionnaire. *European Journal of Psychological Assessment*, *24*(1), 9-13. **https://doi.org/10.1027/1015-5759.24.1.9**

Allen, B. (2023). The historical foundations of contemporary attachment theory: From John Bowlby to Mary Ainsworth. In B. Allen (Ed.), *The science and clinical practice of attachment theory: A guide from infancy to adulthood* (pp. 13-35). American Psychological Association. **https://doi.org/10.1037/0000333-002**

Armsden, G. C., & Greenberg, M. T. (1987). The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence*, *16*(5), 427-454. **https://doi.org/10.1007/BF02202939**

Bagozzi, R. P., & Yi, Y. (2012). Specification, evaluation, and interpretation of structural equation models. *Journal of the Academy of Marketing Science*, *40*(1), 8-34. **https://doi.org/10.1007/s11747-011-0278-x**

Bárez-Palomo, N. B., Saúl Gutiérrez, L. A., & Corbella, S. (2024). Instrumentos para la evaluación del apego adulto en población española: Una revisión sistemática [Instruments for the assessment of adult attachment in the Spanish population: A systematic review]. *CES Psicología*, *17*(3), 80-94. **https://doi.org/10.21615/cesp.7111**

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, *61*(2), 226-244. **https://doi.org/10.1037/0022-3514.61.2.226**

Bowlby, J. (1969/1982). *Attachment and loss*. Basic Books.

Bowlby, J. (1988). Developmental psychiatry comes of age. *The American Journal of Psychiatry*, *145*(1), 1-10.

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46-76). Guilford Press.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing fit. In K. A. Bollen & J. Scott Long (Eds.), *Testing structural equation models* (pp. 136-162). Sage.

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

Crowell, J. A., Fraley, R. C., & Shaver, P. R. (1999). Measurement of individual differences in adolescent and adult attachment. *Handbook of attachment: Theory, research, and Clinical Applications*, *2*, 635.

Cohen, J. (1988). Set correlation and contingency tables. *Applied Psychological Measurement*, *12*(4), 425-434. **https://doi.org/10.1177/014662168801200410**

Deveci Şirin, H., & Şen Doğan, R. (2021). Psychometric properties of the Turkish version of the Experiences In Close Relationships–Relationship Structures Questionnaire (ECR-RS). *SAGE Open*, *11*(1). **https://doi.org/10.1177/21582440211006056**

Dupont, K., Gervai, J., Danis, I., Tóth, I., Koren, R., & Török, S. (2022). Factor structure, psychometric properties, and validation of the Hungarian version of the Experiences In Close Relationships Revised (ECR-R-HU) questionnaire in a nationally representative community sample. *Journal of Personality Assessment*, *104*(6), 747-758. **https://doi.org/10.1080/00223891.2021.2019054**

Ehrenthal, J. C., Zimmermann, J., Brenk-Franz, K., Dinger, U., Schauenburg, H., Brähler, E., & Strauß, B. (2021). Evaluation of a short version of the Experiences in Close Relationships-Revised questionnaire (ECR-RD8): Results from a representative German sample. *BMC Psychology*, *9*, 1-11. **https://doi.org/10.1186/s40359-021-00637-z**

Erskine, R. G. (2011). Attachment, relational-needs, and psychotherapeutic presence. *International Journal of Integrative Psychotherapy, 2*(1), 10-18.

Erskine, R. G., Moursund, J. P., & Trautmann, R. L. (1999). *Beyond empathy: A therapy of contact-in-relationship.* Brunner/Mazel.

Eurostat. (2022). *Age of young people leaving their parental household*. **https://ec.europa.eu/eurostat/statistics-explained/index.php?oldid=572375**

Finney, S. J., DiStefano, C., & Kopp, J. P. (2016). Overview of estimation methods and preconditions for their application with structural equation modeling. In K. Schwizer & C. Distefano (Eds.), *Principles and methods of test construction: Standards and recent advances* (pp. 135-165). Hogrefe.

Fuertes, A. A. F., Orgaz, B., Fuertes, A., & Carcedo, R. (2011). La evaluación del apego romántico en adolescentes españoles: validación de la versión reducida del Experiences in Close Relationships-Revised (ECR-R) [The evaluation of romantic attachment in Spanish adolescents: Validation of the reduced version of the Experiences in Close Relationships-Revised (ECR-R)]. *Anales de Psicología/Annals of Psychology*, *27*(3), 827-833.

Fraley, R. C., Heffernan, M. E., Vicary, A. M., & Brumbaugh, C. C. (2011). The Experiences In Close Relationships—Relationship Structures Questionnaire: A method for assessing attachment orientations across relationships. *Psychological Assessment*, *23*(3), 615-625. **https://doi.org/10.1037/a0022898**

Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology*, *78*(2), 350-365. **https://doi.org/10.1037/0022-3514.78.2.350**

Gallarín, M., & Alonso-Arbiol, I. (2013). Dimensionality of the Inventory of Parent and Peer Attachment: Evaluation with the Spanish version. *The Spanish Journal of Psychology*, 16, E55. **https://doi.org/10.1017/sjp.2013.47**

Greenberg, M. T., Siegel, J. M., & Leitch, C. J. (1983). The nature and importance of attachment relationships to parents and peers during adolescence. *Journal of Youth and Adolescence*, *12*(5), 373-386. **https://doi.org/10.1007/BF02088721**

Iraurgi, I., Gómez-Marroquín, I., Gorbeña, S., & Žvelc, G. (2022). Adaptation to Spanish of the Relational Needs Satisfaction Scale: Translation and psychometric testing. *Frontiers in Psychology*, *13*. **https://doi.org/10.3389/fpsyg.2022.992205**

Jöreskog, K. G., & Sörbom, D. (1993). *LISREL 8: Structural equation modeling with the SIMPLIS command language.* Scientific Software International.

Larrucea-Iruretagoyena, M., & Orue, I. (2022). Spanish validation of the Experiences in Close Relationships-Relationship Structures Questionnaire for pre-adolescents. *Revista de Psicología Clínica con Niños y Adolescentes*, *9*(2), 57-64. **https://doi.org/10.21134/rpcna.2022.09.2.7**

Lee, J. Y., Kim, Y. K., & Shin, Y. J. (2023). Validation of the Korean version of culturally responsive Experiences in Close Relationships–Short Form. *International Journal for the Advancement of Counselling, 45*(1), 57-81. **https://doi.org/10.1007/s10447-023-09503-6**

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. *Monographs of the Society for Research in Child Development*, *50*(1-2), 66-104. **https://doi.org/10.2307/3333827**

Machan, L. (2022). An investigation into the psychometric properties of the Experiences in Close Relationships-Revised scale and the proposal of a new short version, the ECR-R-28 (Doctoral dissertation, University of Huddersfield).

Markland, D. (2007). The golden rule is that there are no golden rules: A commentary on Paul Barrett's recommendations for reporting model fit in structural equation modelling. *Personality and Individual Differences*, *42*(5), 851-858. **https://doi.org/10.1016/j.paid.2006.09.023**

McPherson, C. J., & Devereaux, A. (2024). A dyadic examination of patients' and caregivers' attachment orientations and mutually supportive care in cancer caregiving. *Psycho-Oncology, 33*(1), 1-9. **https://doi.org/10.1002/pon.6256**

Melero, R., & Cantero, M. (2008). Los estilos afectivos en la población española: un cuestionario de evaluación del apego adulto [Affective styles in the Spanish population: An adult attachment assessment questionnaire]. *Clínica y Salud*, *19*(1), 83-100.

Pierrehumbert, B., Karmaniola, A., Sieye, A., Meister, C, Miljkovitch, R., & Alfon, O. (1996). Les modeles de relations: Développement d'un autoquestionnaire d'attachement pour adultes [Relationship models: Development of an attachment self-questionnaire for adults]. *Psychiatrie de lEnfant, 39*(1), 161-206.

Pollard, C., Bucci, S., & Berry, K. (2023). A systematic review of measures of adult disorganized attachment. *British Journal of Clinical Psychology, 62*(2), 329-355. **https://doi.org/10.1111/bjc.12411**

R Core Team. (2020). R: A language and environment for statistical computing (Version 4.2.2) [Software]. *R Foundation for Statistical Computing*. **https://www.R-project.org/**

Ruberman, L. (2014). Challenges in the transition to college: The perspective of the therapist back home. *American Journal of Psychotherapy*, *68*(1), 103-115. **https://doi.org/10.1176/appi.psychotherapy.2014.68.1.103**

Rutkowski, L., & Svetina, D. (2014). Assessing the hypothesis of measurement invariance in the context of large-scale international surveys. *Educational and Psychological Measurement*, *74*(1), 31-57. **https://doi.org/10.1177/0013164413498257**

Santana, S. G. (2022). Antecedentes del apego, tipos y modelos operativos internos [Attachment antecedents, types, and internal operating models]. *Revista de Psiquiatría Infanto-Juvenil*, *39*(2), 2-15. **https://doi.org/10.31766/revpsij.v39n2a2**

Sarling, A., Jansson, B., Englén, M., Bjärtå, A., Rondung, E., & Sundin, Ö. (2021). Psychometric properties of the Swedish version of the Experiences in Close Relationships–Relationship Structures questionnaire (ECR-RS global nine-item version). *Cogent Psychology*, *8*(1). **https://doi.org/10.1080/23311908.2021.1926080**

Shaver, P. R., & Hazan, C. (1987). Being lonely, falling in love: Perspectives from attachment theory. *Journal of Social Behavior and Personality*, *2*(2), 105-124.

Troisi, G., Parola, A., & Margherita, G. (2022). Italian validation of AAS-R: Assessing psychometric properties of Adult Attachment Scale—Revised in the Italian context. *Psychological Studies*, *67*(4), 605-613. **https://doi.org/10.1007/s12646-022-00672-9**

Waters, E., Vaughn, B. E., & Waters, H. S. (2021). Assessing attachment in adolescence. In J. P. Allen (Ed.), *Measuring attachment: Developmental assessment across the Lifespan.* (p. 373). Guilford Publications.

Wongpakaran, T., & Wongpakaran, N. (2012). A short version of the revised Experience of Close Relationships questionnaire: Investigating nonclinical and clinical samples. *Clinical Practice and Epidemiology in Mental Health: CP & EMH*, *8*, 36-42. **https://doi.org/10.2174/1745017901208010036**

Wongpakaran, N., Wongpakaran, T., Lerttrakarnnon, P., Jiraniramai, S., Saisavoey, N., Tantrarungroj, T., Satthapisit, S., DeMaranville, J., Myint, K. M., & Wedding, D. (2023). Psychometric assessment of the 10-item, Revised Experience of Close Relationship (ECR-R-10) in nonclinical and clinical populations of adults and older adults in Thailand. *Scientific Reports*, *13*(1). **https://doi.org/10.1038/s41598-023-41306-y**

Zhang, Q., Hou, Z. J., Fraley, R. C., Hu, Y., Zhang, X., Zhang, J., & Guo, X. (2022). Validating the Experiences in Close Relationships–Relationship Structures scale among Chinese children and adolescents. *Journal of Personality Assessment*, *104*(3), 347-358. **https://doi.org/10.1080/00223891.2021.1947844**

Žvelc, G., Jovanoska, K., & Žvelc, M. (2020). Development and validation of the Relational Needs Satisfaction Scale. *Frontiers in Psychology*, 11. **https://doi.org/10.3389/fpsyg.2020.00901**