

## Maternal and paternal parenting styles as a whole: validation of the simple form of the Parenting Style Evaluation Scale

Álvaro Balaguer<sup>1</sup>, Edgar Benítez<sup>2\*</sup>, Jesús de la Fuente<sup>1</sup>, and Alfonso Osorio<sup>1,3</sup>

<sup>1</sup> School of Education and Psychology, University of Navarra (Spain).

<sup>2</sup> Institute of Data Science and Artificial Intelligence (DATAI), University of Navarra (Spain).

<sup>3</sup> Institute for Culture and Society, University of Navarra (Spain).

**Título:** Estilos parentales materno y paterno en conjunto: validación de la forma simple de la Escala de Evaluación del Estilo Parental

**Resumen:** La *Escala para la Evaluación del Estilo Parental (EEEP)* pregunta a los adolescentes sobre los estilos educativos de sus padres por separado (“tu padre” y “tu madre”) o de forma conjunta (“tus padres”), pero solo se ha evaluado la validez en la versión por separado. El objetivo de este trabajo fue evaluar la validez de las inferencias de la versión conjunta. Se reclutó una muestra de 1507 adolescentes, de 12 a 18 años. Se realizaron análisis factoriales exploratorios y confirmatorios en dos submuestras independientes. Después se probó un modelo de ecuaciones estructurales para comprobar la asociación de las subescalas de la EEEP con desenlaces de los adolescentes (optimismo, pesimismo y resultados académicos). Los resultados muestran buenas medidas de ajuste de la estructura del instrumento. Además, las subescalas mostraron asociación con los desenlaces. La EEEP puede ser usada con fiabilidad en su forma conjunta, resultando en una reducción de ítems, lo cual es a menudo beneficioso para la investigación.

**Palabras clave:** Validación. Estilos parentales. Modelo de ecuaciones estructurales. Adolescencia.

**Abstract:** Oliva’s *Escala para la Evaluación del Estilo Parental (EEEP)* [Scale for the evaluation of parenting styles] asks adolescents about their parents’ education styles separately (“your father” and “your mother”) or in a combined way (“your parents”), but only the separated version has been tested for validity. The objective of this work was to carry out a validation of the combined version. A sample of 1507 adolescents, aged 12 to 18 years, was recruited. Exploratory and confirmatory factor analyses were run in two independent subsamples. Then, structural equation models (SEM) were run in order to test the association between the EEEP’s subscales and adolescent outcomes (optimism, pessimism, and academic achievement). Results showed a good fit of the instruments’ structure. Furthermore, the subscales showed associations with the outcomes. The EEEP can be reliably used in its combined form, which results in a reduction of items, often beneficial for research.

**Keywords:** Scale validation. Parenting styles. Structural equation modeling. Adolescence.

### Introduction

Parents serve as role models for their children, who learn beliefs and behaviors from them (Álvarez et al., 2019; Varela et al., 2019). Relationships with parents are essential socioemotional (Collins & Steinberg, 2006) and moral assets (Mounts & Allen, 2019), even beyond childhood, and strongly influence child development. Accordingly, it is important to develop relevant assessment instruments to improve young people’s development. In recent decades, there has increased interest in defining and measuring the dimensions of parenting style (Smetana, 2017).

### Conceptualizations of Parenting Styles

The first investigations into parenting styles focused on samples of children (Baumrind, 1967; Maccoby & Martin, 1983). However, in the 21st century, interest in parent-adolescent relationships has increased. Obtaining information from children directly rather than their parents reduces social desirability bias and increases objectivity (Gonzales et al., 1996). The first studies in this area took a typological approach to categorizing parenting styles (Baumrind, 1967; Maccoby & Martin, 1983). This approach classifies

parenting styles in a generalized way, mainly in terms of the variables affection and control, which together compose the authoritative parenting style (Laursen & Collins, 2009; Steinberg & Silk, 2002). Later, the dimensional approach was developed to complement the typological approach (Steinberg & Silk, 2002).

Studies subsequent to Baumrind indicated that the dimensions of control and affection were not completely independent, since parents’ degree of affection influences the external manifestation of control (Darling & Steinberg, 1993). There is abundant literature demonstrating the importance of parental warmth in adolescent adjustment, development, and social and emotional well-being (Collins & Laursen, 2004). Establishing which indicators support control has been controversial. For example, some scales measuring control include parents’ knowledge of their children’s activities (Oliva et al., 2007). However, such knowledge may be the result either of parents’ efforts or of children’s self-disclosure, which in turn becomes an important variable to measure (Laird & Zeringue, 2019; Stattin & Kerr, 2000).

Some authors distinguish behavioral control from psychological control, positioning the latter as clearly negative. “Psychological control” in this context refers to a parent’s attempts to control their child’s feelings, thoughts, or interests (Schaefer, 1965). More specifically, it involves parental manipulation of and intrusion into children’s thoughts using methods such as constant criticism, guilt induction, or emotional blackmail (Mageau et al., 2015; Oliva et al., 2007). Behavioral control, in contrast, has been associated with better outcomes among adolescent children (Darling, 1999).

#### \* Correspondence address [Dirección para correspondencia]:

Edgar Benítez. Institute of Data Science and Artificial Intelligence (DATAI), University of Navarra. Campus Universitario 31009. Pamplona (España). E-mail: [ebenitez@unav.es](mailto:ebenitez@unav.es)

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However, some instruments do not distinguish between types of control, and results can differ depending on how control is measured (González-Cámara et al., 2019; Osorio & González-Cámara, 2016). For example, some studies have included physical punishment (Fuentes et al., 2015) or exaggerated rule setting (Calafat et al., 2014) in their assessment of the control dimension. Such studies have found that control is associated with worse adolescent outcomes when defined in this way. Though some authors suggest that this is due to cultural differences, others attribute it to changes in recent decades (García et al., 2019). A recent systematic review shows that the association between parental control and adolescent outcomes depends on how control is measured and that it is therefore important to distinguish between behavioral and psychological control (González-Cámara et al., 2019).

In addition, promotion of autonomy is closely related to authoritative parenting style (Oliva et al., 2007). While promotion of autonomy has sometimes been understood as a lack of psychological control, Barber et al. (2005) showed that these are different dimensions. In terms of its influence on child development, promotion of autonomy has been associated with better academic performance (Diaconu-Gherasim & Măirean, 2016; Steinberg, 2001).

Finally, Oliva et al. (2007) included humor in their instrument for the evaluation of parenting style in order to evaluate the attitude of joy and optimism between parents and children. This attitude shapes a more positive climate that promotes the welfare of both parents and children, as well as positive parent–child relationships (Darling & Steinberg, 1993; Oliva et al., 2007).

### Instruments Measuring Parenting Styles

Some instruments that measure parenting styles are oriented towards infant children. Such instruments collect perceptions from both parents, such as the Parent-Child Relationship Inventory (Gerard, 1994) or from mothers only, such as the *Escala de prácticas parentales prosociales* (Zacaría-Salinas & Andrade-Palos, 2014). Other instruments can be used for both infant and adolescent children, including the Alabama Parenting Questionnaire (Shelton et al., 1996), the Children's Reports of Parental Behavior Inventory (Schaefer, 1965), the *Cuestionario sobre la calidad de las relaciones padres–hijos* (Ortega & Triana, 2002), the Parental Perceptions Questionnaire (Pasquali & de Araújo, 1986), and the Parenting Style Inventory II (Darling & Toyokawa, 1997). According to a recent systematic review (González-Cámara et al., 2019), the most frequently used instruments in the 21st century to date have included the Parenting Styles Index (Steinberg et al., 1992), the Parental Socialization Scale (Musitu & García, 2001), the Child's Report of Parental Behavior Inventory (Schaefer, 1965), the Parental Acceptance-Rejection/Control Questionnaire (Rohner & Khaleque, 2005), and the *Escala para la Evaluación del Estilo Parental* [Scale for the Evaluation of Parenting Styles] (EEEEP; Oliva et al., 2007).

According to the cited systematic review, the EEEP is one of the most used instruments in the Hispanic world. It encompasses a wide range of parenting dimensions and offers a reduced number of items but very acceptable reliability indices. Specifically, the EEEP measures six subscales: psychological control (PC), behavioral control (BC), affection and communication (AC), humor (H), promotion of autonomy (PA), and self-disclosure (SD). While the EEEP can be used to evaluate maternal and paternal styles either separately (“your father” and “your mother”) (Oliva et al., 2007) or together (“your parents”) (Oliva et al., 2011), only the former has been validated. Given the increasing necessity of using short and simple instruments, validating the simple version of this instrument is of interest.

### Aims and Hypotheses

This study aimed to validate the simple version of the EEEP for maternal and paternal parenting styles measured together. In a departure from previous work (Oliva et al., 2007), this research reassessed the reliability and validity of the scores of the EEEP among a diverse sample of adolescents. The study intended to replicate the original structure of the latent variables and find associations with external variables. Specifically, we expected:

- to replicate the same six-factor structure with good adjustment indices;
- to find good internal consistency indices for each factor;
- to find associations between psychological control and worse outcome variables (inverse association with academic performance and optimism, direct association with pessimism); and
- to find associations between the other EEEP factors and better outcome variables (direct association with academic performance and optimism, inverse association with pessimism).

## Methods

### Participants

The inclusion criteria for data collection were targeted towards schools offering curricular programs to adolescents in the province of Zaragoza, Spain. In Spain, these programs comprise the educational stages of compulsory secondary education, baccalaureate, initial professional qualification programs, and professional training. Ten schools were randomly selected from all secondary schools in the province of Zaragoza, with a proportional representation of public vs. private and urban vs. rural schools: seven public schools (four urban, three rural) and three private urban schools. Of these, seven schools agreed to participate: six public schools (four urban, two rural) and one private urban school. At these schools, we requested participation from students in

grades 7, 9, and 11 (approximately 12, 14, and 16 years old, respectively).

The sample consisted of 1,507 adolescents (49.5% girls). Among participants, 33.2% were 11–13 years old, 32.8% were 14–15 years old, and 34.0% were over 15 years old. Roughly half of participants (50.8%) were from public urban schools, while 39.0% attended public rural schools and 10.2% attended a private urban school.

### Instruments

*EEEP* (Oliva et al., 2007). This instrument evaluates several dimensions of parents' style based on the perceptions of their adolescent children (at least 12 years old). The version we used does not differentiate between paternal and maternal parenting styles but asks about parents' jointly. It consists of 41 items, and is divided into six factors: psychological control (8 items); behavioral control (6 items); affection and communication (8 items); humor (6 items); promotion of autonomy (8 items); and self-disclosure (5 items). The items are scored on a Likert scale (1 = *strongly disagree* to 6 = *totally agree*). In the authors' validation, the reliability indices (Cronbach's alpha) of the subscales were as follows for mothers and fathers, respectively: psychological control (.80 and .80); behavioral control (.76 and .78); affection and communication (.88 and .90); humor (.82 and .82); promotion of autonomy (.83 and .83); and self-disclosure (.83 and .85).

*Youth Life Orientation Test* (Ey et al., 2005). This measure is adapted from the revised Life Orientation Test (Scheier et al., 1994) to assess optimism in children and adolescents between 7 and 18 years old. It consists of two subscales, optimism and pessimism, which can be measured either jointly and separately. In total, the measure contains 14 items: 6 optimistic items, 6 pessimistic items, and 2 distracting items. In the Spanish version adapted by Royo (2016), statements are scored on a Likert scale (1 = *I never think that way* to 5 = *I always think that way*). The internal consistency of the two scales for the Spanish version of the instrument was .62 for optimism and .78 for pessimism.

*Academic performance*. Participants were asked the average grade of their academic record for the previous year.

### Procedure

The objectives and characteristics of the study were explained to the principals and counselors at each school. Prior to participation in the study, families were informed via letter about the purpose and procedure of the study. Participants' anonymity was ensured, and schools were informed that they should exclude children whose families did not want them to participate.

The questionnaires were completed during school hours. The teacher of each classroom read the instructions to the students and supervised them during completion. Questionnaires were completed over the course of 1 hour. After

completing the study, each school received an individualized report with the overall results of their students.

The Ethical Guidelines for Educational Research were followed (British Educational Research Association, 2011). No compensation was granted for participating in the study. Ethical approval was obtained for the project from the Academic Commission of the University of Zaragoza, Spain.

### Data Analysis

The analysis began with a general evaluation of evidence of reliability and validity. We evaluated the internal reliability of each construct before proceeding to the validation of inferences of the scale (Muñiz & Fonseca-Pedrero, 2019), using independent samples for exploration through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Questionnaires that were not completed were discarded from the analyses.

For the full sample, adjustment statistics were estimated to the normal distribution and skewness and kurtosis were calculated. The adjustment was rejected, and we needed to estimate the polychoric correlation matrix as an alternative to the Pearson matrix for subsequent analyses (Ferrando & Lorenzo-Seva, 2014; Lloret-Segura et al., 2014). The internal evidence of the reliability of the instrument's scores was estimated using the ordinal coefficient alpha (OCA; Contreras & Novoa-Muñoz, 2018; Zumbo et al., 2007) and compared with the omega coefficient (Dunn et al., 2014).

Parallel analysis was used to define the number of factors (Glorfeld, 1995). EFA was then performed on the polychoric matrix of correlations within a random half of the sample using the unweighted least squares method. Loads above 0.4 units were considered significant (Lloret-Segura et al., 2014). This EFA was compared with that performed on the Pearson correlation matrix estimated by maximum likelihood. Promax was the factor rotation used for both cases, from which the correlations between factors were estimated. We evaluated two alternatives for the remaining sample using CFA. The first was based on the authors' proposal (Oliva et al., 2007) and incorporated six independent dimensions, and the second used three dimensions: *Behavioral Control*, *Psychological Control*, and *Positive Parenting* (*Affection and Communication*, *Humor*, *Promotion of Autonomy*, and *Self-Disclosure*), based on a classification of the dimensions made by the same authors (Oliva et al., 2011).

Robust two-stage maximum likelihood (RML; Lloret-Segura et al., 2014) was used for estimation purposes. The cutoff values proposed by Hu and Bentler (1999) for model validation were used: 1) comparative fit index (CFI) > 0.95 and standardized root mean square residual (SRMR) < 0.09; or 2) root mean square error of approximation (RMSEA) < 0.05 and SRMR < 0.06. The measurement properties of the instrument were estimated using the model chosen based on this analysis. Items were discarded due to low performance on the basis of item reliability < 0.4, composite reliability < 0.7, variance extracted < 0.5 units, and convergent validity  $t$



Construct	Item	Omega coefficient	Skewness	Kurtosis	Ordinal Alpha	Factorial loads based on polychoric matrix correlation						Cronbach alpha	Factorial loads based on Pearson matrix correlation						
						PC	BC	AC	H	PA	SD		PC	BC	AC	H	PA	SD	
	20		0.58	-0.99		.67*						.62*							
	21		0.25	-0.11		.74*						.69*							
	22		1.12	0.07		.67*						.61*							
Behavioral Control (BC)		.83			.87						.83								
	9		-1.07	-0.03		.66*						.60*							
	10		-1.22	0.26		.75*						.66*							
	11		-1.24	0.45		.79*						.71*							
	12		-0.34	-0.01		.61*						.59*							
	13		-0.67	-0.48		.66*						.66*							
	14		-1.03	0.03		.77*						.74*							
Affection and Communication (AC)		.92			.93						.91								
	1		-1.51	1.88		.70*						.69*							
	2		-1.69	2.30		.78*						.76*							
	3		-1.21	0.92		.83*						.83*							
	4		-1.11	0.51		.70*						.69*							
	5		-1.19	1.02		.48*						.39*							
	6		-1.10	0.41		.53*						.49*							
	7		-1.37	1.59		.52*						.47*							
	8		-0.94	0.36		.35						.33							
Humor (H)		.89			.92						.89								
Promotion of Autonomy (PA)	31		-1.13	0.84		.62*						.57*							
	32		-1.03	0.78		.73*						.68*							
	33		-1.11	0.71		.74*						.77*							
	34		-0.74	0.12		.62*						.58*							
	35		-1.02	0.44		.73*						.74*							
	36		-0.86	0.05		.58*						.59*							
	23	.89	-0.89	-0.04	.90						.88								
	24		-1.17	0.82		.68*						.52*							
	25		-1.07	0.56		.80*						.66*							
	26		-0.92	-0.05		.58*						.56*							
	27		-0.81	-0.10		.80*						.87*							
	28		-0.75	-0.30		.76*						.82*							
	29		-1.11	0.54		.51*						.47*							
	30		-1.33	1.34		.48*						.40*							
Self-Disclosure (SD)		.86			.90						.87								
	37		-0.67	-0.68							.72*	.68*							
	38		-0.67	-0.75							.73*	.70*							
	39		-0.41	-0.88							.78*	.78*							
	40		-0.36	-0.99							.75*	.74*							
	41		-0.21	-0.01							.59*	.55*							

\* Factorial loads > .40

Normality adjustment statistics (skewness and kurtosis), internal reliability coefficients for each dimension (Cronbach alpha and Ordinal Alpha), and factor loads estimated from the polychoric correlation matrix and Pearson product-moment, for the items that are part of the instrument that evaluates Parenting Styles.

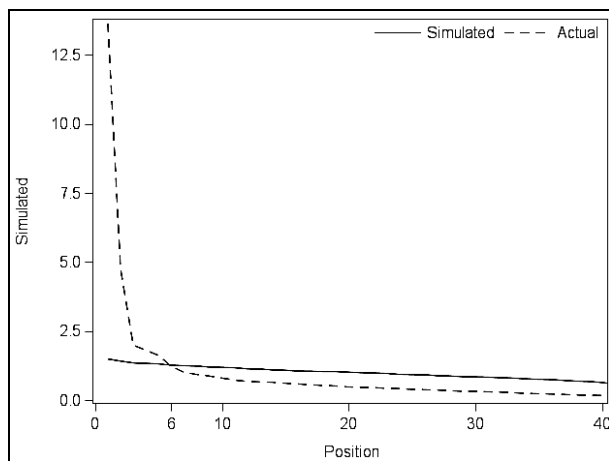
We found high OCA values for the *Affection and Communication*, *Promotion of Autonomy*, *Humor*, and *Self-Disclosure* constructs ( $\alpha \geq 0.9$ ), which suggested possible multicollinearity. For the EFA, although the underestimation effect of the Pearson matrix was generally observed, both results (that generated from the Pearson matrix and that generated from the polychoric matrix) presented the same structure, with the items loading on their respective dimensions. Omega coefficient values were similar to Cronbach's alpha values. The model also revealed some strong correlations between constructs, with the exception of *Psychological Control* and *Behavioral Control* (Table 2).

**Table 2.** Matrix of correlation between constructs of Parenting Styles.

	PC	BC	AC	H	PA	SD
PC	1.00					
BC	.23	1.00				
AC	-.35	.34	1.00			
H	-.34	.27	.67*	1.00		
PA	-.25	.27	.58*	.56*	1.00	
SD	-.16	.35	.53*	.49*	.53*	1.00

\* Correlation coefficient > .40

Matrix of correlation between the scores of the factors: *Psychological Control* (PC), *Behavioral Control* (BC), *Affection and Communication* (AC), *Humor* (H), *Promotion of Autonomy* (PA), and *Self-disclosure* (SD).



**Figure 2.** Parallel Analysis (PA) for the definition of the number of dimensions in which the generated data are grouped for the model of *Parenting Style* (PS). The intersection between the simulated data and the actual data indicates the number of factors to be retained in the exploratory factor analysis (EFA).

Up to this point, the multicollinearity (high OCA) and divergent validity (correlations between factors) of the instrument showed low adjustment of the model. To improve this adjustment, we identified the poorly performing constructs and their respective items and proceeded to eliminate them. Items 9 and 12 of *Behavioral Control*; items 15, 20, and 22 of *Psychological Control*; and item 23 of *Promotion of Autonomy* were removed from the instrument in this way (Table 3).

**Table 3.** Properties of the measurement instrument.

Construct and item	Original measure instrument				Without low reliability items				Modification Lagrange multiplier			
	VEE	R	SL	<i>t</i>	VEE	R	SL	<i>t</i>	VEE	R	SL	<i>t</i>
PC	.43	.86 <sup>a</sup>			.51	.84			.51	.84		
15		.31	.55	16.53								
16		.51	.71	28.40		.48	.69	25.65		.48	.69	25.81
17		.52	.72	28.79		.55	.74	30.65		.55	.74	30.46
18		.49	.70	26.67		.53	.73	29.28		.53	.73	28.98
19		.53	.73	29.95		.52	.72	28.68		.53	.73	28.91
20		.34	.58	18.23								
21		.49	.70	27.26		.45	.67	23.99		.45	.67	23.90
22		.29	.54	15.86								
BC	.46	.84			.50	.80			.50	.80		
9		.37	.61	19.44								
10		.53	.73	28.58		.51	.71	25.94		.50	.71	25.82
11		.56	.75	30.85		.51	.71	26.17		.51	.71	26.04
12		.34	.58	17.81								
13		.43	.66	22.43		.42	.65	21.52		.43	.65	21.75
14		.53	.73	28.85		.57	.76	29.90		.58	.76	30.19
AC	.60	.92			.59	.92			.59	.92		
1		.50	.71	30.32		.50	.71	30.88		.49	.70	30.39
2		.57	.76	37.21		.57	.75	37.34		.56	.75	37.12
3		.65	.81	47.74		.66	.81	49.42		.66	.81	49.37
4		.68	.82	51.87		.68	.83	54.05		.68	.83	54.15
5		.66	.81	48.63		.65	.81	48.65		.65	.81	48.59
6		.57	.75	36.65		.55	.74	35.27		.55	.74	35.40
7		.63	.79	43.83		.61	.78	42.33		.60	.78	41.99
8		.53	.73	33.11		.54	.73	34.42		.54	.73	34.42
H	.63	.91	.	.	.63	.91	.	.	.62	.89		
31		.67	.82	50.30		.67	.82	51.61				
32		.76	.87	67.09		.76	.87	68.44		.68	.82	50.90
33		.53	.72	32.16		.53	.73	33.36		.55	.74	34.26
34		.56	.75	36.00		.56	.75	36.82		.56	.75	35.81
35		.63	.79	43.39		.63	.79	44.39		.67	.82	48.95
36		.62	.79	42.93		.63	.79	44.73		.66	.81	48.37
PA	.49	.88			.53	.89			.53	.89		
23		.17	.42	10.91								
24		.61	.78	39.77		.58	.76	37.74		.58	.76	37.21
25		.55	.74	33.57		.55	.74	34.24		.55	.74	34.13
26		.51	.71	29.98		.50	.70	29.53		.50	.70	29.62

Construct and item	Original measure instrument				Without low reliability items				Modification Lagrange multiplier			
	VEE	R	SL	<i>t</i>	VEE	R	SL	<i>t</i>	VEE	R	SL	<i>t</i>
27		.57	.75	35.12		.56	.75	35.60		.57	.75	35.88
28		.59	.77	37.94		.59	.77	38.02		.58	.76	37.73
29		.52	.72	30.54		.52	.72	31.14		.52	.72	31.22
30		.41	.64	22.93		.41	.64	23.41		.41	.64	23.18
SD	.61	.89			.60	.88			.62	.87		
37		.55	.74	33.14		.54	.74	33.51				
38		.57	.75	35.12		.57	.75	35.77		.50	.71	29.39
39		.74	.86	57.28		.73	.86	57.62		.77	.88	61.74
40		.70	.83	50.59		.68	.83	50.04		.73	.86	55.63
41		.51	.71	29.79		.49	.70	29.15		.49	.70	29.04

R: Reliability; VEE: Variance Extraction Estimates; SL: Standardized load; *t*: *t* value.

<sup>a</sup> Composite Reliability.

Properties of the instruments for measuring *Parenting Styles* in the validation process. Original instrument, instrument without items of low reliability, and instrument modified by the indices produced by the Lagrange Multiplier.

### Confirmatory Factor Analysis

Our CFA began by evaluating the two proposed theoretical alternatives: the six-dimensional model proposed by Oliva, and the model reduced to three dimensions: positive parenting (*Affection and Communication*, *Humor*, Promotion of *Autonomy*, and *Self Disclosure*) and two types of control. In our analysis, the original model proposed by the authors performed better than the alternative where the variables related to positive parenting were grouped (CFI: 0.89, 0.77; Tucker-Lewis index [TLI]: 0.88, 0.76; SRMR: 0.057, 0.075; RMSEA: 0.059, 0.086, 90% CI [0.056, 0.059] and [0.083, 0.088], respectively).

The three-dimensional model was discarded, and the original model was evaluated against the model from which items with low reliability were removed. The modification indices of the Ward test and the Lagrange multiplier were then applied, one modification at a time (Table 4). For this method, the ideal adjustment criteria and improvements to the model that would not affect the content validity criteria or the stability of the factor estimate were addressed. Based on this analysis, two items were removed (31 of *Humor* and 37 of *Self-disclosure*) for which the Lagrange multiplier identified a relationship between items of the same construct (multicollinearity).

**Table 4.** Goodness-of-Fit Indices for Various Models, Parenting Styles (N = 559).

Model	d. f.	$\chi^2$	$\Delta$ d. f.	$\Delta \chi^2$	TLI	CFI	SRMR	RMSEA	(RMSEA CI.90)
Base model	820	13409.3							
Six factors model	764	2160.8	56	11248.5**	0.88	0.89	0.057	0.059	(0.056-0.059)
Without low reliability items	545	1484.4	219	676.4**	0.91	0.92	0.047	0.056	(0.052-0.059)
Without 31	512	1334.2	252	826.6**	0.92	0.93	0.046	0.054	(0.050-0.057)
Without 37	480	1197.6	65	286.8**	0.93	0.93	0.048	0.052	(0.048-0.055)

$\chi^2$  = chi-square; d. f. = degrees of freedom; TLI: Tucker-Lewis Index; CFI = Comparative Fit Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation; RMSEA (90% CI) = RMSEA 90% Confidence Limits. Each  $\Delta$  was calculated from the previous model.

\*\*  $p < .01$

### Relationship between the Instrument, Dispositional Optimism, and Academic Performance through SEM

The selected model's relationship with the external variables *Dispositional Optimism* and *Academic Performance* was evaluated via confirmatory analysis. Descriptive statistics for these subscales are presented in Table 5. The adjustment of *Dispositional Optimism* was first assessed through CFA, which showed optimal values of adjustment (CFI = .95; TLI = .94; SRMR = .0394; RMSEA = .0542, 90% CI [.048, .061];  $\alpha$  = .70 [optimism];  $\alpha$  = .80 [pessimism]).

**Table 5.** Descriptive statistic for subscales used in the SEM model.

Variable	Mean	SD	Skewness	Kurtosis	Cronbach alpha	Omega coefficient
OP_4	3.43	1.12	-0.31	-0.53	0.70	0.70
OP_6	3.18	1.09	-0.07	-0.51		
OP_8	4.30	0.90	-1.32	1.44		
OP_10	4.16	0.89	-0.95	0.69		
OP_12	3.58	1.09	-0.44	-0.47		
OP_14	4.28	0.89	-1.20	1.11		
PE_3	2.45	0.93	0.46	0.13	0.80	0.80
PE_5	2.34	1.13	0.53	-0.51		
PE_7	2.46	1.09	0.41	-0.34		
PE_9	2.43	1.25	0.57	-0.66		
PE_11	1.94	1.04	1.11	0.73		
PE_13	1.89	1.00	1.17	1.02		
AP	4.30	2.27	-0.17	-1.13		

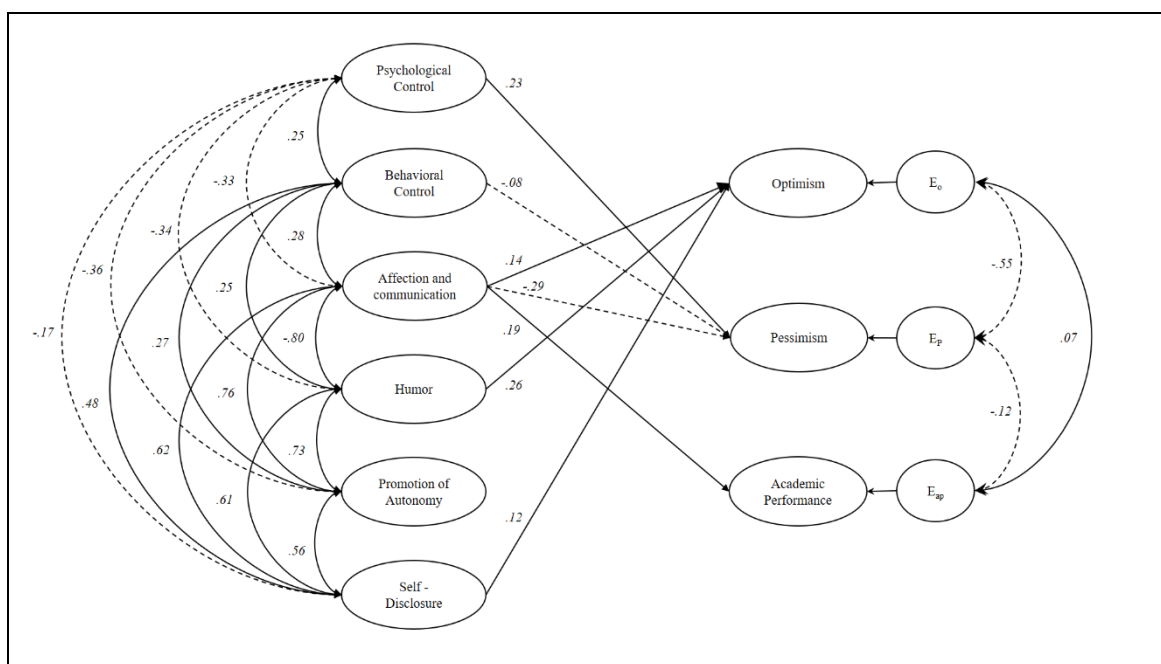
OP: dispositional optimism; PE: dispositional pessimism; AP: academic performance.

Once all measurement instruments were validated, the causal model was estimated using SEM. A correlation matrix for the scores of the factors evaluated is presented in Table 6. The Ward test modification indicator and convergent validity tests showed that some functional relationships were not significant ( $p \geq .05$ ). Such items were eliminated from the model. Although the elimination of non-significant relationships did not improve the indices of adjustment of the model, they were nevertheless removed in the search for a parsimonious model and a model not affected by relationships attributable only to chance (CFI = .93; TLI = .92; SRMR = .040; RMSEA = .042, 90% CI [.040, .044]). The model presented in Figure 3 was obtained through this process.

**Table 6.** Matrix of correlation between constructs of SEM for external validation of Parenting Styles (N=1075).

	PC	BC	AC	H	PA	SD	OP	PE	AP
PC	1.00								
BC	.27	1.00							
AC	-.39	.31	1.00						
H	-.39	.28	.85	1.00					
PA	-.42	.31	.81	.79	1.00				
SD	-.21	.53	.67	.66	.61	1.00			
OP	-.17	.18	.53	.55	.50	.44	1.00		
PE	.35	-.11	-.45	-.41	-.40	-.31	-.83	1.00	
AP	-.12	.06	.16	.12	.12	.09	.14	-.20	1.00

Matrix of Pearson correlation between the scores of the factors associated with Psychological Control (PC), Behavioral Control (BC), Affection and Communication (AC), Humor (H), Promotion of Autonomy (PA), and Self-disclosure (SD). Optimism (OP), Pessimism (PE), and Academic Performance (AP).



**Figure 3.** Estimated final model for the relationship between the constructs of Parental Style, Academic Performance, and Dispositional Optimism. The values represent the significant standardized linear coefficients ( $p < 0.05$ ). Solid line correspond to a direct relationship. Dashed line correspond to an inverse relationship. Straight lines are unidirectional relationship. Curve arrows correspond to covariance relationship.

The resulting model shows that *Pessimism* was inversely influenced by *Affection and Communication* and *Behavioral Control*, and directly influenced by *Psychological Control*. On the other hand, *Affection and Communication*, *Humor*, and *Self-Disclosure* directly influenced *Optimism*. Finally, *Academic Performance* was directly influenced by *Affection and Communication* (Figure 3).

Finally, when evaluating the invariance of the model and considering boys and girls as groups, no changes were observed that indicated an improvement in the model (CFI = .92; SRMR = .048; RMSEA = .045). However, when estimating the parameters for each sex, we found that, for boys, *Affection and Communication* no longer influenced *Optimism* ( $\hat{\beta} = 0.076$ ;  $p = .45$ ). In addition, the relationship between *Optimism* and *Academic Performance* was not present among boys ( $\hat{\rho}$

= 0.24;  $p = .63$ ). On the contrary, for girls, *Self-Disclosure* was not significantly related to *Optimism* ( $\hat{\beta} = .088$ ;  $p = .10$ ), and the negative effect of *Behavioral Control* on *Pessimism* disappeared ( $\hat{\beta} = -.023$ ;  $p = .62$ ). For the remaining variables, the changes identified were on the level of magnitude, where *Affection and Communication* influenced girls over *Pessimism* at a rate almost double that among boys ( $\hat{\beta}_{\text{boys}} = -.183$ ;  $\hat{\beta}_{\text{girls}} = -.364$ ). This finding stands in contrast to *Psychological Control* and its influence on *Pessimism*, which in boys is almost double the rate estimated for girls ( $\hat{\beta}_{\text{boys}} = .335$ ;  $\hat{\beta}_{\text{girls}} = .151$ ).

## Discussion

The proposed model for evaluating parenting styles as a whole (i.e., for fathers and mothers jointly) encountered sev-



eral difficulties not reported in previous studies (Oliva et al., 2007, 2011). Overall, these difficulties were related to the biased behavior of some dimensions and the model's low reliability in the two dimensions related to parental control. This affected the performance of the model when assessed via CFA. Bias, which resulted in multicollinearity problems, was resolved with the use of adequate statistical techniques.

It was necessary to eliminate some items due to low reliability. In analyzing the content of these items, we observed that they were associated with extreme perceptions of their respective dimension. For example, in the psychological control dimension, questions associated with unexplained punishments or with parents who withdraw communication were removed. Similarly, in the behavioral control dimension, items related to exhaustive control of time and money were eliminated. Since these problems were not reported in the validation of the version of the instrument that evaluated maternal and paternal parenting styles separately (Oliva et al., 2007), we speculate that they might be related to mixing the responses of both parents. In other words, a parent's sex might be associated with differences in behavior that are not reflected in adolescents' ratings.

For dispositional optimism, although optimism and pessimism were expected to behave similarly (Hinz et al., 2017), differential effects were found. Pessimism was influenced by parental affection and communication, as well as both psychological and behavioral control. The two classical components of authoritative parenting (affection and communication and behavioral control) seemed to decrease pessimism, while psychological control seemed to increase it. This is consistent with the hypotheses of the present study. Affection and communication, together with self-disclosure and especially humor, were again shown to be precursors of optimism and positive factors in adolescent development. As these variables are usually considered components of positive parenting (Oliva et al., 2011), we expected that they would increase optimism (Hasan & Power, 2002).

Although some authors consider pessimism to be a mirror image of optimism (Gustems-Carnicer et al., 2017), our findings did not support this view, as the predictive capacity of pessimism was greater than that of optimism. This effect has also been detected by other authors (Ey et al., 2005). An explanation for this differential effect can be found in the concept of cognitive dissonance within the construct of unrealistic optimism proposed by Kapikiran and Acun-Kapikiran (2016). According to these authors, when young people are asked about their optimistic vision of their lives, they tend to hide situations that diminish this perception. However, when adolescents are asked specifically about neg-

ative aspects (i.e., the pessimistic dimension), cognitive dissonance decreases, and pessimism becomes an important predictive factor that reveals the truth behind an adolescent's optimistic view of their life.

In line with previous literature, we expected that academic performance would be positively associated with behavioral control (Darling, 1999; González-Cámara et al., 2019; Waterman & Lefkowitz, 2017). However, our initial model found only a small and non-significant association, which was dropped in the final model. The only variable that showed a significant effect on academic performance was affection and communication, which is consistent with other studies where this factor was found highly relevant (Pinquart, 2016).

### Limitations and Future Research

We conclude by mentioning some of the limitations of our research. First, only children's perceptions were used in this study. This implies a bias that could increase the size of the relationship between the different variables analyzed. Second, social desirability and infrequency of response scales were not used to detect invalid or random response patterns. That said, as previously noted, this is a more reliable method of assessing parenting styles than using parents' perceptions, since relying on adolescents' points of view reduces social desirability bias and increases objectivity (Gonzales et al., 1996). Finally, we did not analyze factor invariance for different types of families or for different groups of adolescents. Such differences may be relevant in researching the effects of different parenting styles in society (Pearce et al., 2018). Future studies might consider this issue.

### Conclusion

The tested model showed good fit indices and high internal reliability when asking adolescents about their parents' collective parenting style. In relation to the original version of the scale, it was possible to reproduce the six dimensions proposed by Oliva. However, some of the original items were removed because they reduced the reliability of the dimensions evaluated. The associations between parenting dimensions and adolescent outcomes were as expected, with the dimension of affection and communication best explaining adolescent outcomes, whether affective (optimism and pessimism) or behavioral (academic performance). The modified instrument can be used with sufficient assurance of quality.

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