

Psychometric properties of the Parenting Styles and Dimensions Questionnaire (PSDQ) in Colombian and Uruguayan samples

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Abstract

Parenting practices and styles have gained relevance for their effects on people's emotional development. One of the most widely used instruments to measure them is the Parenting Styles and Dimensions Questionnaire (PSDQ). This study aimed to examine the factor structure, internal consistency, and convergent validity of the PSDQ in Colombian and Uruguayan samples. A total of 688 adults (age $M = 36$, $SD = 7$; 87.2% female) with children between 4 and 10 years old participated. Descriptive item analyses and exploratory factor analyses led to the elimination of seven items. Confirmatory factor analysis with the 25-item version showed the adequacy of the data to the three-factor model and high internal consistency for the democratic and authoritarian subscales. Convergent validity with a similar instrument showed adequate results. It is concluded that the measurement of parenting styles should consider cultural factors associated with parenting practices.

Keywords: Parenting; Parenting styles; Validity; Reliability; Latin America.

Resumen

Propiedades psicométricas del Cuestionario de Dimensiones y Estilos de Crianza (PSDQ) en muestras colombiana y uruguaya. Las prácticas y estilos parentales han cobrado relevancia por sus efectos sobre el desarrollo emocional de las personas. Uno de los instrumentos más utilizados para medirlos es el Parenting Styles and Dimensions Questionnaire (PSDQ). El objetivo de este estudio fue examinar la estructura factorial, consistencia interna y validez convergente del PSDQ en muestras colombiana y uruguaya. Participaron 688 adultos (edad $M = 36$, $DE = 7$; 87.2% mujeres) con hijos/as entre 4 y 10 años. Los análisis descriptivos de ítems y el análisis factorial exploratorio llevó a la eliminación de siete ítems. El análisis factorial confirmatorio con la versión de 25 ítems mostró adecuación de los datos al modelo de tres factores y alta consistencia interna para las subescalas democrática y autoritaria. La validez convergente con un instrumento semejante mostró resultados adecuados. Se concluye que la medición de los estilos parentales debe contemplar factores culturales asociados a prácticas de crianza.

Palabras clave: parentalidad; estilos parentales; validez; fiabilidad; América Latina.

In most societies, parents bear the primary responsibility for guiding their children in socially desirable directions, carrying out tasks of supervision, education, and discipline throughout their development (Bush & Peterson, 2013). The way in which parents deal with child behavior, societal socialization norms and affection has a profound influence on the children's emotional, cognitive, and behavioral development (Ali et al., 2023; Cohrdes & Göbel, 2022; Goagoses et al., 2023; McWhirter et al., 2023; Wang et al., 2024).

Based on the classic contributions of Baumrind (1966, 1967, 1971) and Darling and Steinberg (1993), one way of desegregating competent ways that parents socialize their children is with a mul-

tidimensional approach comprised of support, control and autonomy. Conversely, the coercive parenting dimension is comprised of overcontrolling behaviors that focus on punishment, isolation, or restriction in ways the limit the facilitation of healthy psychosocial and emotional child development. Finally, the under controlled parenting dimension reflects few demands for mature behavior, minimal restrictions, and a lack of consequences for misbehavior (Maccoby & Martin, 1983). Variations in how these parenting dimensions are expressed determine parenting styles, which encompass constellations of prominent behavioral practices that parents typically employ with their children across diverse situations over time. These behav-

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Cite as: Bedoya-Valderrama, L., Cracco, C., Kiefer, M. & Garay-Quevedo, O. (2025). Psychometric properties of the Parenting Styles and Dimensions Questionnaire (PSDQ) in Colombian and Uruguayan samples. *Revista de Psicología Clínica con Niños y Adolescentes*, 12(1), 31-39. doi: 10.21134/rpcna.2025.12.1.4

Received: December 14, 2023 - Accepted: July 24, 2024

ioral elements collectively shape the environment in which the parent-child relationship unfolds (Bush & Peterson, 2013).

Accordingly, parenting style typologies have generally been categorized as authoritative/democratic, authoritarian, or permissive (Baumrind et al., 2010; Hart et al., 2003). More recently, the authoritative/democratic style has been conceptualized with three dimensions comprised of: 1) connection - reflecting warm, nurturing and supportive parenting practices; 2) regulation - which actively fosters the development of maturity by establishing clear boundaries accompanied by reasoning, and the enforcement of pre-explained consequences for the violation of rules in matter-of-fact but non-punitive ways, and 3) autonomy granting - allowing children to make personal decisions within acceptable limits while expressing understanding and encouraging open communication with children.

Baumrind (1991) and other scholars have conducted extensive research addressing the relationship between these parenting styles and child development outcomes in North America and in other cultural settings (Ren et al., 2023). Recent studies have provided consistent evidence supporting the idea that children raised in an authoritative/democratic parenting style exhibit more beneficial developmental outcomes compared to those with parents adopting an authoritarian or permissive style (Goagoses et al., 2023; Herrera- López et al., 2022; Peng et al., 2021; Pérez-Gramaje et al., 2020).

In the Latin American context, review studies have sought to achieve conceptual agreements, identify sociocultural variables that influence parenting styles and practices, and synthesize the results regarding their effects on child development (Del Castillo & Vallejos, 2019; Jorge & González, 2017; Losada et al., 2020; Tilano et al., 2018). There are few empirical studies carried out in Colombia (Aguirre-Dávila, 2015; Guevara-Marín et al., 2021) and Uruguay (Capano et al., 2016), making it evident that research on parenting styles in these countries is scarce but of growing interest.

Several methodologies have been used to measure parenting styles, such as questionnaires and surveys, interviews, or observations of interactions between parents and children. Among the standardized instruments for the evaluation of parenting styles, *The Parenting Styles and Dimensions Questionnaire* (PSDQ) stands out (García-Zavala & Peraltilla-Romero, 2019; Olivari et al., 2013).

The Parenting Styles and Dimensions Questionnaire (PSDQ), designed by Robinson et al. (1995), was created to assess parenting styles based on Baumrind's typologies and their elaborations noted above. During its construction, items from Block's (1965) parenting practices report and additional items generated by the authors were incorporated. The initial version, administered to 1251 parents in the United States, underwent a factor analysis, resulting in a 62-item questionnaire categorized into authoritarian, democratic, and permissive styles. Subsequently, a concise version of the PSDQ with 32 items used by other researchers was derived from Robinson et al. (2001). Additionally, an introspective self-report version has been created, allowing adults and/or adolescents to reflect on their parents' parenting practices during childhood (Nunes & Mota, 2018; Tagliabue et al., 2014).

The psychometric properties of the brief parent version of the PSDQ have been analyzed in different cultural contexts and countries such as Brazil (Oliveira et al., 2018), Indonesia (Rahmawati et al., 2021), Israel (Yaffe, 2018), Lithuania (Kern & Jonyniene, 2012), Portugal (Figueiredo et al., 2015; Martins et al., 2018) and Turkey (Önder & Gülay, 2019). While some studies supported the original structure of the PSDQ, others explored alternative factor solutions. Notably, the reliability indices of the democratic and authoritarian style scales con-

sistently showed higher values, while the permissive scale, in certain instances, exhibited values falling below the minimum recommended thresholds (Carretero-Dios & Pérez, 2007).

The PSDQ, like other parenting style assessment instruments, was constructed by taking specific aspects of parental behavior that are not necessarily representative of other cultures and historical moments (Bush & Peterson, 2013). Given that the brief version of the PSDQ has not been validated in Spanish-speaking countries, we undertook an exploratory study to examine its psychometric properties utilizing Colombian and Uruguayan fathers and mothers. Our objectives were as follows: (a) analyze aspects of wording and relevance and present descriptive data on the items, (b) analyze the internal structure of the instrument through exploratory and confirmatory factor analysis and measurement invariance between the two countries, (c) examine the reliability indices of the scales, and (d) explore the convergent validity of the PSDQ scales with another measure of parenting behaviors.

Method

Participants

A sample of 688 adults from Colombia and Uruguay, fathers and mothers of children between 4 and 10 years of age, was collected through convenience sampling. The only requirement for participating was to have at least one child between four and 10 years of age (in the case of having more than one child of those ages, the questionnaire had to be answered with only one of them in mind). Table 1 presents sociodemographic information on the sample.

Instruments

Parenting Styles and Dimensions Questionnaire – short version (PSDQ; Robinson et al., 1995; 2001). The instrument was an initially unpublished version derived from Robinson et al. (2001) and is composed of 32 items that are answered by parents on a Likert-type response scale (1 = *never*; 5 = *always*). Fifteen evaluate the authoritative/democratic style, 12 for the authoritarian style, and five for the permissive style. In this study, the Spanish-version by Velásquez and Villouta (2013) was used.

Parent Behavior Inventory (PBI; Lovejoy et al., 1999). The instrument is comprised of 20 items and its objective is to evaluate parental behaviors grouped in two dimensions: hostile/coercive behavior (10 items) and supportive/engaged behavior (10 items). Parents answer each statement on a Likert-type scale 0 (*not at all*) to 5 (*very true*). In this study, the version adapted to the Peruvian population by Merino-Soto et al. (2004) was used. The authors obtained moderate support for the two-factor structure with Cronbach's α reliability indices of .78 for the hostility/coercive scale and .81 for the supportive/engaged subscale.

Sociodemographic Questionnaire. A sociodemographic questionnaire was designed to obtain basic information. For the Colombian population, the corresponding socioeconomic status was asked according to their place of residence, and in Uruguayan families, the Socioeconomic Level Index (INSE; Perera, 2018) was used.

Procedure

First, parents of children between 4 and 10 years of age were contacted and asked to evaluate the wording of the PSDQ items. For each statement, parents were asked to indicate whether the statement was:

Table 1. Sociodemographic information of the sample

Adult age	Total (<i>n</i> = 688)	Colombia (<i>n</i> = 367)	Uruguay (<i>n</i> = 321)
	<i>M</i> = 36, <i>SD</i> = 7 (min. 18 - max. 64)	<i>M</i> = 33.3, <i>SD</i> = 7.3 (min. 18 - max. 64)	<i>M</i> = 39.3, <i>SD</i> = 5.1 (min. 24 - max. 51)
Participating adult, <i>n</i> (%)			
Mother	600 (87.2)	316 (86.1)	284 (88.5)
Father	88 (12.3)	51 (13.9)	37 (11.5)
Highest educational level , <i>n</i> (%)			
Primary	11 (1.6)	11 (3)	0 (0)
Baccalaureate	170 (24.7)	111 (30.3)	59 (18.4)
Technical/technologist	163 (23.7)	134 (36.5)	29 (9)
Professional	211 (30.7)	75 (20.4)	136 (42.4)
Postgraduate	133 (19.3)	36 (9.8)	97 (30.2)
Socioeconomic status, <i>n</i> (%)			
Low	225 (32.7)	209 (56.9)	16 (5)
Middle	292 (42.4)	156 (42.5)	136 (42.4)
High	171 (24.9)	2 (0.5)	169 (52.6)
Child's age, <i>M</i> (<i>SD</i>)	<i>M</i> = 6.6, <i>SD</i> = 2.0 (min. 4 - max. 10)	<i>M</i> = 6.6, <i>SD</i> = 2.2 (min. 4 - max. 10)	<i>M</i> = 6.7, <i>SD</i> = 1.8 (min. 4 - max. 10)
Gender of child, <i>n</i> (%)			
Female	323 (46.9)	175 (47.7)	148 (46%)
Male	365 (53.1)	192 (52.3)	173 (54%)

Note: *M* = Mean; *SD* = Standard Deviation.

not at all clear, moderately clear, very clear or absolutely clear. For the not at all clear or moderately clear options, suggestions for alternative wording were requested. Eighteen adults participated (12 Colombians, six Uruguayans; 14 mothers, four fathers; one with a primary school education, two with a high school education, three with technical/technologist education, five with bachelor's degrees, and seven with a postgraduate degree).

Once a version of the PSDQ for Colombian and Uruguayan adults was agreed upon by the principal investigators, expert judges were asked to evaluate the questionnaire. Each expert was invited by e-mail with information of the objectives of the study and the participation procedure. The email included the instructions, the questionnaire items and response scale to evaluate the aspects of semantic and syntactic clarity, and the coherence and relevance of the PSDQ items to each subscale. Five expert judges participated, two Colombians and three Uruguayans, psychologists with postgraduate studies (2 with a specialization, 2 with master's degrees and 1 with a Ph.D.) and with professional (min. 5 years; max. 40 years) and academic (min. 2 years; max. 30 years) work experience in the areas of family, childhood, and public policy.

To collect the sample, the project was promoted through social media and institutions linked to formal and non-formal education in Colombia and Uruguay. When accessing a link to the Google forms survey, the participants found the informed consent with the study objectives and the general characteristics of the survey. Those who provided informed consent were redirected to another form with the sociodemographic questionnaire and the items of the PSDQ and PBI scales. Data was collected between June and October 2023.

Ethical considerations

The research project is endorsed by the Institutional Research Ethics Committee (CIDEIN) of the Corporación Universitaria Iberoamericana through record 07-2023, and the approval of the Research Ethics Committee of the Universidad Católica del Uruguay.

Data design and analysis

An instrumental study was conducted (Ato et al., 2013). To obtain evidence of content validity, we resorted to the expert judgment study by calculating the Aiken *V* index for semantic and syntactic clarity, and coherence and relevance. Then, a descriptive analysis of the items was performed (*M*, *SD*, asymmetry, and kurtosis). No missing data was found. Two subsamples of *n* = 344 subjects were randomly generated. With subsample 1, an exploratory factor analysis (EFA) was performed. Beforehand, the adequacy of the data was tested with Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) measure. The correlation matrix can be factored if the Bartlett's test statistic is significant and if KMO is equal to or greater than .80 (Ferrando & Anguiano-Carrasco, 2010). Given the ordinal nature of the response scale, we employed polychoric data matrices and the Weighted Least Squares Mean and Variance adjusted (WLSMV) estimation method, as recommended by Lloret-Segura et al. (2014).

Based on the EFA results, a confirmatory factor analysis (CFA) was carried out with subsample 2. The fit indices used were $X^2/df < 3$, CFI and TLI $> .92$, RMSEA $< .07$ (Hair et al., 2019). Measurement invariance of the 25-item Spanish version of the PSDQ was also assessed in Colombian and Uruguayan adults through a multigroup CFA. For the estimation of the reliability of the scales, the McDonald Omega coefficient was calculated (Ventura-León & Caycho-Rodríguez, 2017). After testing the assumption of normality of the variables with the Kolmogorov-Smirnov (K-S) statistic, the convergent validity of the PSDQ scales with the PBI scales was studied using Spearman's *rho* test. For the calculation of the inter-judge correlation index and the descriptive and correlational analyses, SPSS version 29 was employed. Factor analyses were conducted using the AMOS program.

Results

Linguistic adjustments of the PSDQ for Colombian and Uruguayan population

A total of 18 parents of children between 4 and 10 years graded the clarity of wording of the Spanish version of the PSDQ by Velásquez and Villouta (2013). Based on the participants' assessment and suggestions, the principal investigators agreed on a unique alternative wording, which are presented in Table 2.

Evidence of content validity by expert judgement

The degree of inter-judge agreement was evaluated by calculating Aiken's V index (95% confidence interval). Table 3 shows that, except for items 13 and 24, the levels of inter-judge agreement are adequate ($> .80$; Robles-Pastor, 2018) for both semantic and syntactic clarity and coherence and relevance.

Table 2. Linguistic adjustments of the PSDQ items

Item	Original wording	Consensual drafting
3	<i>Tomo en cuenta los deseos de mi hijo/a antes de pedirle que haga algo</i>	<i>Tomo en cuenta las preferencias de mi hijo/a antes de pedirle que haga algo</i>
4	<i>Cuando mi hijo/a pregunta por qué él/ella tiene que conformarse, digo: "porque yo lo digo" o "soy tu papá/mamá y quiero que lo hagas"</i>	<i>Cuando mi hijo/a pregunta por qué él/ella tiene que conformarse, digo: "porque soy tu papá/mamá y quiero que lo hagas"</i>
6	<i>Le doy nalgadas a mi hijo/a cuando es desobediente</i>	<i>Le doy palmadas a mi hijo/a cuando es desobediente</i>
10	<i>Castigo a mi hijo/a quitándole privilegios, dándole poca o ninguna explicación</i>	<i>Castigo a mi hijo/a quitándole privilegios, sin dar mucha explicación</i>
15	<i>Termino cediendo cuando mi hijo/a hace una pataleta por algo</i>	<i>Termino cediendo cuando mi hijo/a hace una pataleta o berrinche por algo</i>
20	<i>Declaro castigos a mi hijo/a y en realidad no los cumplo</i>	<i>Anuncio castigos a mi hijo/a y en realidad no los cumplo</i>
23	<i>Regaño y critico a mi hijo/a para que mejore</i>	<i>Regaño y critico a mi hijo/a para que mejore su comportamiento</i>
28	<i>Castigo a mi hijo/a poniéndolo solo/a en algún lugar dándole poca o ninguna explicación</i>	<i>Castigo a mi hijo/a poniéndolo solo/a en algún lugar sin dar mucha explicación</i>

Table 3. Aiken's V coefficients of inter-judge agreement

Item	Aiken's V semantic and syntactic [95% CI]	Aiken's V consistency and relevance [95% CI]
1. Respondo a los sentimientos...(I am responsive to my child feelings...)	.93 [.78 - 1]	.93 [.78 - 1]
2. Uso el castigo físico...(I use physical punishment...)	1.00 [.89 - 1]	1.00 [.89 - 1]
3. Tomo en cuenta las preferencias...(I take into account my child's preferences...)	1.00 [.89 - 1]	.93 [.78 - 1]
4. Cuando mi hijo/a pregunta...(When my child ask...)	.93 [.78 - 1]	1.00 [.89 - 1]
5. Le explico a mi hijo/a cómo me siento...(I explain to my child how I feel...)	.87 [.69 - 1]	.93 [.78 - 1]
6. Le doy palmadas...(I spank when my child is disobedient)	1.00 [.89 - 1]	1.00 [.89 - 1]
7. Animo a mi hijo/a a hablar...(I encourage my child to talk...)	1.00 [.89 - 1]	1.00 [.89 - 1]
8. Me resulta difícil disciplinar...(I find it difficult to discipline...)	1.00 [.89 - 1]	.93 [.78 - 1]
9. Animo a mi hijo/a a que se exprese...(I encourage our child to freely express...)	.93 [.78 - 1]	.93 [.78 - 1]
10. Castigo a mi hijo/a quitándole privilegios...(I punish by taking privileges away...)	.93 [.78 - 1]	.93 [.78 - 1]
11. Explico las razones...(I give my child reasons...)	.93 [.78 - 1]	.93 [.78 - 1]
12. Doy consuelo y comprensión...(I give comfort and understanding...)	.93 [.78 - 1]	1.00 [.89 - 1]
13. Grito o lloro cuando mi hijo/a...(I scream or cry when my child...)	.87 [.69 - 1]	.73 [.54 - 1]
14. Elogio a mi hijo/a...(I give praise when my child...)	1.00 [.89 - 1]	1.00 [.89 - 1]
15. Termino cediendo...(I give into...)	1.00 [.89 - 1]	.93 [.78 - 1]
16. Exploto de ira...(I explode in anger...)	.93 [.78 - 1]	1.00 [.89 - 1]
17. Amenazo a mi hijo/a con castigarle...(I threaten my child with punishment...)	.93 [.78 - 1]	.87 [.69 - 1]
18. Tengo en cuenta los gustos...(I take into account my child's preferences...)	1.00 [.89 - 1]	1.00 [.89 - 1]
19. Aprieto con fuerza...(I grab my child...)	1.00 [.89 - 1]	1.00 [.89 - 1]
20. Anuncio castigos...(I state punishments...)	.93 [.78 - 1]	.87 [.69 - 1]
21. Muestro respeto por las opiniones...(I show respect for my child's opinions...)	1.00 [.89 - 1]	1.00 [.89 - 1]
22. Permito que mi hijo/a opine...(I allow my child to give input...)	1.00 [.89 - 1]	1.00 [.89 - 1]
23. Regaño y critico...(I scold and criticize...)	.93 [.78 - 1]	1.00 [.89 - 1]
24. Consiento a mi hijo/a (I spoil my child)	.87 [.69 - 1]	.67 [.46 - 1]
25. Le explico a mi hijo/a las razones...(I give my child reasons...)	1.00 [.89 - 1]	1.00 [.89 - 1]
26. Uso amenazas como forma de castigo...(I use threats as punishment...)	.93 [.78 - 1]	1.00 [.89 - 1]
27. Tengo momentos de cercanía y calidez...(I have warm and intimate times...)	1.00 [.89 - 1]	1.00 [.89 - 1]
28. Castigo a mi hijo/a poniéndolo solo/a...(I punish by putting my child off...)	.93 [.78 - 1]	1.00 [.89 - 1]
29. Ayudo a mi hijo/a a entender...(I help my child to understand...)	1.00 [.89 - 1]	1.00 [.89 - 1]
30. Regaño o critico duramente...(I scold or criticize...)	.93 [.78 - 1]	1.00 [.89 - 1]
31. Explico a mi hijo/a las consecuencias...(I explain the consequences...)	1.00 [.89 - 1]	1.00 [.89 - 1]
32. Le pego una cachetada...(I slap my child...)	1.00 [.89 - 1]	1.00 [.89 - 1]

Item analysis

Table 4 shows the descriptive data of the items. The results show that items 28 and 32 present severe skewness with absolute values > to 3. More specifically, item 28 presents severe kurtosis problems (> 10) and item 32 extreme kurtosis problems (> 20), this shows lack of normality in those items (Kline, 2015). McDonald's Omega shows that all three subscales have adequate levels of internal consistency. The elimination of any item in the instrument would not improve those coefficients. Regarding item-total correlations all items show acceptable results.

Table 4. Descriptive data of the items (N = 688)

Item	M	SD	Skewness	Kurtosis	r IT-c	McDonald's ω if deleted
Democratic (ω= .92)						
1	4.35	0.78	-1.15	1.09	.67	0.92
3	3.37	1.07	-0.31	-0.70	.50	0.92
5	4.06	1.07	-0.97	0.08	.56	0.92
7	4.50	0.88	-1.89	3.07	.71	0.91
9	4.31	1.01	-1.36	0.94	.64	0.92
11	4.37	0.91	-1.45	1.55	.66	0.92
12	4.23	0.94	-1.19	0.89	.62	0.92
14	4.35	0.93	-1.43	1.46	.53	0.92
18	4.31	0.86	-1.24	1.32	.63	0.92
21	4.42	0.85	-1.39	1.20	.76	0.91
22	3.37	1.32	-0.27	-1.13	.43	0.92
24	3.85	1.14	-0.55	-0.87	.36	0.92
25	4.43	0.86	-1.52	1.78	.73	0.91
27	4.59	0.75	-2.09	4.76	.65	0.92
29	4.27	0.95	-1.22	0.76	.69	0.91
31	4.40	0.94	-1.56	1.74	.69	0.91
Authoritarian (ω= .76)						
4	1.92	0.98	1.14	0.97	.35	0.75
8	2.21	1.05	0.72	-0.15	.39	0.75
13	1.92	0.96	1.05	0.64	.43	0.74
15	1.75	0.90	1.21	1.07	.43	0.74
16	1.71	0.80	1.32	2.33	.50	0.73
17	2.07	1.10	0.98	0.29	.51	0.73
20	1.93	1.03	1.15	0.77	.49	0.73
23	2.39	1.23	0.66	-0.55	.37	0.74
26	1.57	0.82	1.55	2.28	.46	0.74
Permissive (ω= .75)						
2	1.48	0.66	1.64	4.11	.51	0.70
6	1.52	0.83	1.96	4.25	.53	0.70
10	1.92	1.11	1.21	0.67	.39	0.73
19	1.55	0.86	1.81	3.20	.42	0.72
28	1.25	0.65	3.16	11.15	.36	0.72
30	2.00	1.11	1.14	0.65	.46	0.73
32	1.17	0.55	4.17	20.09	.32	0.74

Note: M = Mean; SD = Standard Deviation.

Evidence of validity based on internal structure

An EFA was carried out with subsample 1 (n = 344). Sample adequacy was tested with Bartlett's test of sphericity and the KMO measure of adequacy. Bartlett's test of sphericity was significant ($X^2 = 4421$; $df = 496$; $p < .001$), with KMO adequacy index = .89, considered satisfactory (Lloret-Segura et al., 2014). The results of the parallel analysis (PA) and the Hull method evidence a three-factor solution that explains 37.7% of the total variance. Table 5 presents the three factors

resulting from the EFA and the factor loadings of the items, showing that several of the items that in the original version belong to the authoritarian style were grouped with items of the permissive style.

CFAs were performed with subsample 2 (n = 344). First, the fit of the data to the original three-factor structure proposed by Robinson et al. (2001) was tested. The results show that the data do not fit the proposed structure ($X^2/df = 2.66$; RMSEA = .072 [IC 90% .067-.077]; CFI = .80; TLI = .78). Then, the decision was made to eliminate items 28 and 32 that showed unacceptable skewness and kurtosis values and did not load on any factor in the EFA. We also eliminated items 13 "Grito o lloro cuando mi hijo/a se porta mal" (I yell or shout when my child misbehaves) and 24 "Consiento a mi hijo/a" (I spoil my child), which obtained values lower than those recommended by inter-judge agreement for the aspects of semantic clarity and coherence and relevance and loaded on a factor different than the expected one, and items 4, 16 and 26 for this last reason.

Table 5. Exploratory factor analysis PSDQ (n = 344)

Item	Original scale	EFA: factor 1	EFA: factor 2	EFA: factor 3
21	Democratic	.78		
25	Democratic	.77		
31	Democratic	.74		
7	Democratic	.74		
29	Democratic	.72		
1	Democratic	.70		
27	Democratic	.69		
11	Democratic	.69		
18	Democratic	.66		
9	Democratic	.66		
12	Democratic	.65		
14	Democratic	.59		
5	Democratic	.58		
3	Democratic	.49		
22	Democratic	.45		
24	Permissive	.43		.38
17	Permissive		.63	
8	Permissive		.54	
15	Permissive		.53	
20	Permissive		.50	
16	Authoritarian		.58	
13	Authoritarian		.50	
26	Authoritarian		.48	
4	Authoritarian		.31	
6	Authoritarian			.77
2	Authoritarian			.67
10	Authoritarian			.44
23	Authoritarian		.34	.38
30	Authoritarian		.33	.36
19	Authoritarian			.34
32	Authoritarian			
28	Authoritarian			

A new version of the scale with 25 items (15 authoritative/democratic style items, six authoritarian style items, four permissive style items) achieved acceptable good fit on the AFC with indices: $X^2/df = 1.67$; RMSEA = .046 [CI 90% .038-.053]; TLI = .93; CFI = .94 (Figure 1).

To evaluate the measurement invariance of the Spanish version of the PSDQ in Colombians and Uruguayans, a multigroup CFA was performed. The results show that, based on the configural invariance,

Figure 1. Results AFC PSDQ 25 items

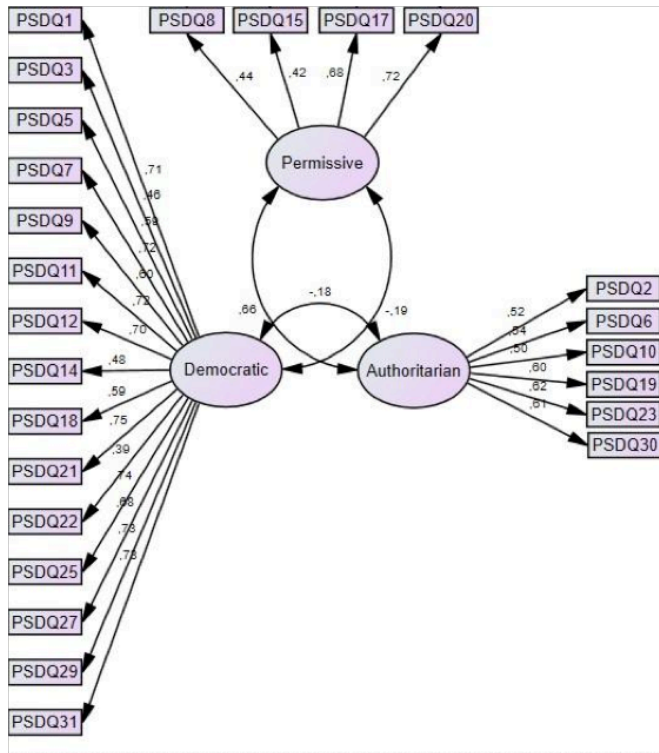


Table 7. Correlations between PSDQ and PBI scales (N = 688)

	Hostility/Coercive	Supportive/Engaged
Democratic	-.05	.71**
Authoritarian	.58**	-.10*
Permissive	.47**	-.08*

* $p < .05$; ** $p < .001$

the three-factor structure with 25 items was maintained in both samples. This means that the latent variables of authoritative/democratic, authoritarian, and permissive styles seem to have the same configuration of free and fixed loadings between groups. This information allowed us to continue with the evaluation of metric invariance. Regarding metric invariance, it was observed that, after restricting the factor loadings to be equal in both groups, the change in the CFI did not exceed the value of .02 and in turn, the RMSEA change value was less than .03 (Rutkowski & Svetina, 2014). This supports the metric invariance of the instrument in both samples. Subsequently, it was observed that by restricting the item intercepts together with the factor loadings it is not possible to account for the existence of scalar invariance across groups.

Table 6. Tested models, and fit indexes between Colombians and Uruguayans

Models	$\chi^2(df)$	CFI	RMSEA	$\Delta\chi^2$	(Δdf)	ΔCFI	$\Delta RMSEA$
Configural	933.35(520)***	.93	.03	-	-	-	-
Metric	1004.41(542)***	.92	.04	71.06	1	.01	.01
Scalar	1420.81(567)***	.86	.05	141.08	6	.04	.01

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$

χ^2 = Chi square, $\Delta\chi^2$ = chi square difference test, df = degrees of freedom, Δdf = degrees of freedom, CFI = comparative fit index, ΔCFI = comparative fit index difference, RMSEA = root mean square error of approximation

Reliability of the PSDQ scales (25 items)

The scale corresponding to the democratic style obtained a coefficient $\omega = .91$, the authoritarian style scale $\omega = .79$ and the permissive style scale $\omega = .69$.

Evidence of validity in relation to other variables

Correlations were calculated between the democratic, authoritarian, and permissive styles scales, with the hostile/coercive and supportive/engaged scales of the PBI (Lovejoy et al., 1999). The results of the K-S test were statistically significant ($p < .001$) showing that the parenting style scales do not present a normal distribution. Table 7 presents the results of Spearman's ρ correlations between the parental styles assessed with the PSDQ and the parental behaviors assessed with the PBI, where it is possible to observe a significantly high correlation between the democratic style of the PSDQ and the supportive/engaged dimension in the PBI, and the authoritarian and permissive styles and the hostility/coercive dimension.

Discussion

The purpose of this instrumental study was to analyze the psychometric properties of the abbreviated PSDQ (Robinson et al., 2001) in a sample of 688 Colombian and Uruguayan families. Considering that this study used a Spanish translation made in Chile, the relevance and adequacy of the wording of the items of the instrument was evaluated by means of a pilot test with families and in consultation with expert judges. The first procedure resulted in the linguistic adjustment of eight items. The analysis by expert judges revealed low levels of agreement for two items: item 13 "Grito o lloro cuando mi hijo/a se porta mal" (I scream or cry when my child misbehaves) of the authoritarian dimension, and item 24 "Consiento a mi hijo/a" (I spoil my child) of the permissive dimension. This last item also evidenced problems in the study conducted by Figueiredo et al. (2015), where it is suggested that, in Latin American cultures, pampering or spoiling is a way of giving affection to children.

When performing the descriptive analyses of the items, it became evident that both item 28 "Castigo a mi hijo/a poniéndolo solo/a en algún lugar sin dar mucha explicación" (I punish by putting my child off somewhere alone with little if any explanation), and item 32 "Le pego una cachetada a mi hijo/a cuando se porta mal" (I slap my child when the child misbehaves), presented serious problems of asymmetry and kurtosis, showing that the items do not help to discriminate or contribute to the evaluated construct.

The EFA conducted to analyze the internal structure of the instrument gave support to the three-factor structure, but some of the items did not group as expected. Items 4 "Cuando mi hijo/a pregunta por qué el/ella tiene que conformarse, digo: porque soy tu papá/mamá y quiero que lo haga" (When my child ask why he/she has to conform, I state: because I said to, or I am your parent and I want you to), item 16 "Exploto de ira con mi hijo/a" (I explode in anger towards my child),

and item 26 “*Uso amenazas como forma de castigo sin demasiada justificación*” (*I use threats as punishment with Little or no justification*), originally belonging to the authoritarian style, were grouped with other items of the permissive style. For the CFA, all the aforementioned items were eliminated, resulting in a 25-item version that showed an adequate fit of the data to the three-dimensional model. The same item elimination procedure was performed by Tagliabue et al. (2014) for the Italian version, which could reaffirm the idea that some of the items are not suitable for use in Latin cultures.

Regarding invariance, support for configural and metric invariance was found. This indicates that the latent construct is measured by the same indicators in all groups and that the model works with equivalent factor loadings for all groups. Regarding scalar invariance, the substantive change observed in the global adjustment seems to indicate that the PSDQ measurement model is not presented in the same way in the two countries, which means that it is not possible to make comparisons of the latent means between these groups. In that sense, it is not possible to compare averages of the construct between the groups. These results could be attributed to the sociodemographic differences present in the samples collected in both countries.

When analyzing the reliability of the three scales, adequate levels of internal consistency were found for the authoritative/democratic and authoritarian dimensions, but not for the permissive style scale. It is worth mentioning that in the original questionnaire (Robinson et al., 2001) and in other psychometric studies conducted with the abbreviated PSDQ (Figueiredo et al., 2015, Martins et al., 2018) this subscale presented weak reliability indices. This could be attributed to differences in how the permissive style is interpreted in different cultures, underscoring the need for testing to ensure the correct measurement of the style in different cultural contexts (Olivari et al., 2013).

Finally, when correlating the results of the PSDQ with the PBI, the results showed excellent validity in relation with the PSDQ. In particular, the authoritative/democratic parental style correlated positively with supportive parental behaviors ($.71, p < .001$). Permissive and authoritarian parenting styles correlated positively with hostile and coercive parenting behaviors ($.47$ and $.58, p < .001$ respectively).

The limitations of this study are mainly due to the sample size and the characteristics of the sample collected in each country. In the case of Uruguay, most of the sample had a high educational and socioeconomic level, while in Colombia the majority had a medium socioeconomic level and low educational level. Although the sample size was sufficient to conduct the analyses, it would have been desirable to have larger samples. These aspects should be corrected when using the PSDQ to identify possible differences in parenting styles in different countries.

The analyses carried out with our Colombian and Uruguayan sample supported the existence of the three original factors of the PSDQ, but with a 25-item version. Further studies should continue reviewing the instrument using qualitative approaches and with greater depth in specific cultural aspects, based on the perceptions that families have about the meaning of each of these parenting styles and the practices involved.

Contemplating the psychometric properties of this instrument, in Latin American samples, contributes to the advancement and promotion of an adequate measurement of parenting styles, which will allow professionals to more accurately identify parenting styles that may be oriented toward practices that do not promote adequate development, and with this basis to be able to establish effective prevention and intervention strategies.

Acknowledgements

The authors thank Dr. Hart for the authorization for the use of PSDQ and reviewing the final manuscript.

Funding

This project was funded by the Ibero-American University Corporation, in its call for teaching research projects 2023.

Conflict of interest

The authors certify that there is no conflict of interest in this manuscript.

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