

Validation and psychometric properties of a brief measure of parental attributions in a sample from Spain

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Abstract

The parental attribution measure (PAM) is an instrument that assesses the attributions made by parents regarding their children's behavior, for both clinical and community samples. This research has aimed at evaluating the psychometric properties of the PAM in a community sample in Spain. Data were analyzed from several samples of fathers and mothers (N1 = 253; N2 = 458, N3 = 711) who reported on their attributions and level of parental stress on the one hand and on their children's emotional insensitivity traits and behavioral problems on the other. The results did not support the original structure proposed but a unidimensional structure consisting of nine items with good psychometric properties and factorial invariance. The 9-item PAM exhibited a positive relationship with callous unemotional traits and behavioral problems in children and with parental stress. This study provides important new insights into the psychometric properties of the PAM in a Spanish sample. It represents a significant advance, since so far there have been no other instruments to use in assessing parental attributions about their children's behavioral problems in Spanish. In short, this research is intended to evaluate the psychometric properties of the PAM in a sample of a community in Spain. The results supported a unidimensional structure composed of a 9-item instrument with good psychometric properties and factorial invariance.

KEYWORDS

behavioral problems, PAM, parental attributions

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INTRODUCTION

The role of parental attributions in the development of behavioral problems in children and in parents' behavior is a developing area of research. Parental attributions, understood as the set of judgments parents make in an effort to predict, evaluate, or explain their children's behavior, are a developing area of research (Miller, 1995); and are usually classified as positive or negative. Negative attributions are more frequent in parents whose children exhibit behavioral problems and encourage behaviors in caregivers that alienate them from caregiving. Specifically, the literature reports that negative parental attributions are associated with coercive parenting styles (Mackinnon-Lewis et al., 1992; Morrissey-Kane & Prinz, 1999), and taken together they predict the development of behavioral problems in their children (Johnston et al., 2009; Johnston & Ohan, 2005; Snyder et al., 2005). Most conceptualizations of parental attributions describe three dimensions; locus of control (internal vs. external), stability (temporary vs. permanent), and controllability (controllable vs. uncontrollable) (Weiner, 1985).

One of the most frequent ways of intervening in the behavioral problems of children and adolescents is by working with the parents, specifically through behavioral parent training (BPT) programs (Sawrikar & Dadds, 2018), whose objective is to teach parents other resources so that they can interact with their children differently. Some of these programs were created in English but have been applied in Spanish population (e.g., incredible years or parent-child interaction therapy) or have been created in Spain (such as EmPeCemos), showing some evidence of their effectiveness in this type of population (Arruabarrena et al., 2022; Ferro et al., 2010; Romero et al., 2017; Vázquez et al., 2019). For more than two decades, some lines of research have evaluated the impact of parental attributions on BPT outcomes. These studies have found that the worse the negative attributions with respect to stability and controllability, the worse the BPT outcomes in terms of adherence to treatment, engagement, and changes in parental behavior (Kil et al., 2020; Sawrikar et al., 2018, 2020). The modifiable nature of parental attributions suggests that this variable could be a useful element in approaching parent-child interventions with a view to decreasing children's behavioral problems. One study found that after controlling for other variables such as parental and child behavior, a change in parental attributions decreased behavioral problems in children (Katzmann et al., 2017). Nevertheless, research aimed at establishing this is still scant, partly because interventions directed toward parental attributions are not a specific area of work in the most frequently implemented BPT programs (e.g., Triple P or Incredible Years), making it difficult to assess their impact (Sawrikar & Dadds, 2018).

Given the importance of having an assessment of the influence of parents' attributions on their children's behavioral problems available, various instruments have been developed to evaluate this. However, most use vignettes in which parents evaluate different behaviors and are limited by requiring a series of advanced reading skills on the part of the parents and by taking considerable time to complete, and furthermore, scoring and interpretation are complicated (Sawrikar et al., 2018). Moreover, in most cases, they refer to hypothetical behaviors not related to the parents' children.

By contrast, the parent cognition scale (PCS, Snarr et al., 2009) assesses attributions of causality and responsibility, distinguishing between the two, but it suffers from the limitation of not having been designed or validated for clinical samples, and its potential for investigating parental attributions in parent training has therefore not been established for the time being, although a recent study has furnished positive data for a clinical sample (Lysenko et al., 2021). Another limitation is that it focuses mainly on attributions with hostile intent, without assessing other dimensions such as stability or negative dispositional attributions, which may also influence the results of parent training (Sawrikar et al., 2018).

In addition, its length, while not excessive (30 items), is considerable when used in combination with other instruments. To overcome these limitations, the parent attribution measure (PAM, Sawrikar et al., 2018), a brief but reliable self-report instrument validated by both clinical and community samples, was developed to assess parental attributions in clinical and research contexts. Participants in the clinical sample were 318 families with children aged from 3 to 16; in the community sample were 241 parents of children aged between 2 and 16.

The PAM assesses parents' attributions about their children with conduct problems along different dimensions: intentionality, permanence, and dispositional attributions. Each of the first-order dimensions had adequate internal consistency for responses provided by mothers ($\alpha_{\text{Intentionality}}=0.71$, $\alpha_{\text{permanence}}=0.70$, $\alpha_{\text{disposition}}=0.70$) and moderate-to-adequate internal consistency for responses provided by fathers ($\alpha_{\text{Intentionality}}=0.64$, $\alpha_{\text{permanence}}=0.71$, $\alpha_{\text{disposition}}=0.66$). In the original study, they used the Strengths and Difficulties Questionnaire (SDQ) and the University of New South Wales Callous-Unemotional Scale (UNSW CU Scale) to assess behavioral problems in children. From the parents' point of view, the Parental Locus of Control is used to assess parental self-efficacy, the Alabama Parenting Questionnaire to measure parental behaviors, the Brief Symptom Inventory to assess depressive symptoms in parents, and a shortened seven-item version of the Parental Feelings Questionnaire (PFQ) to assess parents' negative feelings toward the child. Their results show significantly positive correlations between the PAM total score and conduct problems, parental depression, corporal punishment, negative parental feelings, child age, and CU Traits. They also highlight the positive correlation between the disposition factor of the PAM and CU traits and suggested that this factor can measure individual differences in parental attributions in context of child temperamental characteristics.

Current study

The findings described above suggest that it is extremely important to have available instruments that have been validated not only in the local language but also in the respective national and cultural contexts. Spain develops intervention programs with families to address their children's behavioral problems. However, the impact that these parents' attributions have on the development and outcomes of the intervention cannot be assessed to date due to the lack of instruments in Spanish that assess this construct. Hence, the primary object of this study was to fill this gap by adapting the Parent Attribution Measure (PAM) to Spanish language and culture. Specifically, three objectives were set for which three different samples were used: (1) To explore the factorial structure of the items, (2) to confirm the factorial analysis obtained in the first analysis, (3) to check the measurement invariance of the PAM Spanish version.

METHOD

Participants

To conduct the study, two samples of participants were collected simultaneously over a period of 4 months, and the same data collection procedure was followed for both samples through the Google Forms platform. The Google Forms form was distributed to four nursery schools, two social services centers, and the general population using different social networks. All data were collected in the Community of Madrid, Spain.

Sample 1

This sample consisted of 253 participants came from a large metropolitan city in Spain (Madrid), 181 mothers (71.5%) and 72 fathers (29.5%). The 42.3% of the children were girls compared to 57.7% of boys. The 78.3% of the sample had siblings, compared to 21.7% who reported having no siblings. The mean age of the children was 9.83 years (S.D. = 5.08 years). In terms of family structure, 9.9% were single-parent families; in 11.5% of cases, the parents were separated or divorced, and in 8.3% of cases, the family was a reconstituted family. As concerns the children, 3.6% were adopted, 7.9% had been born prematurely, and 5.1% had repeated a school year. A total of 8.7% of the sample reported having a medical illness, compared to 91.3% who did not suffer from any illness; 4.0% of the sample indicated having a diagnosed mental disorder, compared to 96% who do not have a mental disorder. In 2% of the cases, the family has had recourse to help from social services, compared to 98% who report not having needed such help. Forty-seven percent of the sample report that during the 6 months prior to data collection, they have experienced high levels of stress due to their work situation, compared to 53% who have not; 24.5% of the sample reports that during the 6 months prior to data collection, they have experienced high levels of stress due to their financial situation, compared to 75.5% who have not; 21.7% of the sample reports that during the 6 months prior to data collection, they have experienced high levels of stress due to their family situation, compared to 78.3% who do not experience stress; 9.1% of the sample report that during the 6 months prior to data collection, they have experienced high levels of stress about their housing, compared to 90.9% who do not. Finally, 21.7% of the sample reports that during the 6 months prior to data collection, they have experienced high levels of stress due to health problems, compared to 78.3% who do not.

Sample 2

This sample consisted of 458 participants, 344 mothers (75.1%) and 114 fathers (24.9%). The 41.9% of the children were girls compared to 58.1% of boys, similar to the composition data for sample 1. The 65.3% of the sample had siblings, compared to 34.7% who reported having no siblings. The mean age of the children in this sample was 4.73 years (S.D. = 2.84 years). In terms of family structure, 17% were single-parent families; in 13.5% of cases, the parents were separated or divorced, and in 9.2% of cases, the family was a reconstituted family. As concerns the children, 0.7% were adopted, 7.2% had been born prematurely and 9.1% had repeated a school year. A total of 10.7% of the sample reported having a medical illness, compared to 89.3% who did not suffer from any illness; 8.5% of the sample indicated having a diagnosed mental disorder, compared to 91.5% who do not have a mental disorder. In 23.6% of the cases, the family has had recourse to help from social services, compared to 76.4% who report not having needed such help; 57.6% of the sample report that during the 6 months prior to data collection, they have experienced high levels of stress due to their work situation, compared to 42.4% who have not; 43% of the sample reports that during the 6 months prior to data collection, they have experienced high levels of stress due to their financial situation, compared to 57% who have not; 22.7% of the sample reports that during the 6 months prior to data collection, they have experienced high levels of stress due to their family situation, compared to 77.3% who do not experience stress; 20.3% of the sample report that during the 6 months prior to data collection, they have experienced high levels of stress about their housing, compared to 79.7% who do not. Finally, 27.3% of the sample report that during the 6 months prior to data collection, they have experienced high levels of stress due to health problems, compared to 72.7% who do not.

Sample 3

This sample was the aggregate of samples 1 and 2. It consisted of 525 mothers (73.8%) and 186 fathers (26.2%), with 42.1% of the children being girls and 57.9% were boys. Both study samples were collected in Madrid, Spain.

Measures

Parent attribution measure (PAM)

The parent attribution measure (Sawrikar et al., 2018) is a 12-item self-report measure designed to assess causal and dispositional attributions of children's behavioral problems by parents. Respondents were asked to rate their agreement to statements on a 3-point Likert scale where 1 was “not at all true” and 3 was “certainly true.” Positively worded items were intended for reverse scoring, with higher scores on the PAM dimensions representing negative attributions for problem behaviors.

A forward–backward translation method was used to increase the linguistic equivalence between the existing English-language PAM and the resulting Spanish-language PAM. Each English item was translated into Spanish by a bilingual researcher familiar with the field of parental attribution. A bilingual linguist familiar with both societies and the attribution process then translated the proposed Spanish-language items back into English. The two translations were then compared, discussed, and reduced to a single mutually agreeable wording and then carefully examined by the authors to determine whether the items seemed to be essentially the same as the English-language originals.

Callous–unemotional traits

The inventory of callous–unemotional traits (Kimonis et al., 2008) is a 24-item instrument used to assess CU traits in children and adolescents. The Spanish validation was performed by López-Romero et al. (2015). The parent indicates on a 4-point Likert scale where 0 was not at all true and 3 was definitely true. Using confirmatory factor analysis, it was possible to identify three independent factors, namely callousness, unemotional, and uncaring. All items were loaded onto a general CU factor. Higher scores indicate an increased presence of CU traits. The internal consistency for the current study estimated using Cronbach's alpha was $\alpha = 0.856$.

Conduct problems

The Eyberg Child Behavior Inventory (ECBI; Eyberg & Ross, 1978; Robinson et al., 1980) contains 36 disruptive behavior problems. The Spanish validation was performed by Fernández de Pinedo et al. (1998). The parent indicates on a 7-point scale how often each behavior occurs, with 1 being never and 7 being always. The parent also indicates if the occurrence of the specific behavior is currently a problem by circling “yes” or “no” for each behavior. This produces two summary scores—an intensity score (IS) and a problem score (PS). The IS represents the total frequency of occurrence of the 36 behaviors (possible range from 36 to 252). The PS represents the total number of the 36 behaviors that are indicated to be problematic (possible range from 0 to 36). The internal consistency for the current study estimated using Cronbach's alpha was IS $\alpha = 0.923$ and PS $\alpha = 0.903$.

Parental stress

The Parental Stress Scale (PSS; Berry & Jones, 1995) is a 17-item self-report instrument used to assess the level of parental stress related to parenting. The Spanish validation was performed by Oronoz et al. (2007). For each statement, respondents rate their level of agreement on a 5-point Likert-type scale (1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, and 5 = strongly agree). Higher scores reflect more parental stress. The internal consistency for the current study estimated using Cronbach's alpha was $\alpha = 0.810$.

Procedure

Data on the participants from schools, social services, and general population were collected using the Google Forms platform. The first section of the form collected sociodemographic data and the second section collected the parents' answers to the questions of the evaluation instruments. In the case of schools, the researchers contacted the school principals asking them to share the link with parents who wanted to participate. In the case of social services, the professionals working with the families were contacted and provided the Google Forms link to the parents. In the case of the general population, the link was shared directly through the University's institutional networks. All data collected were anonymous. Institutional Ethics Committee approval was obtained. To be included in the sample, participants had to document that they were adults (i.e., 18 years of age or older) and had to sign a written online informed consent in which the study was extensively described.

Analysis plan

Step 1: analysis of the structure of PAM's spanish version

Study sample 1 was used to explore the dimensionality of the Spanish version of the PAM. First, we have replicated the model proposed by confirmatory factor analysis (CFA). Second, we have run an exploratory factor analysis (EFA) to analyze dimensionality and items functioning. The number of factors was determined by parallel analysis based on the 95th percentile of the eigenvalue distribution in resampled data.

Step 2: confirmatory factor analysis (CFA) and criterion validity

To validate the factorial structure that emerged in step 1, a CFA was carried out using sample 2. Second, bivariate correlations between PAM and ICU, ECBI, and PSS were carried out to study criterion validity.

Step 3: measurement invariance

Lastly, a multiple-group CFA analysis was performed using the aggregate sample (sample 3) to check the measurement invariance of the test. Invariance between mothers' and fathers' responses and across child age groups. Following Sawrikar et al. (2018), we have considered children aged less than 8 years old as young ($n = 485$, $n_{old} = 226$). We used the steps proposed by Wu & Estabrook (2016, see also, Svetina et al., 2020) for categorical outcomes. First, we estimated

the configuration baseline model with thresholds invariance for both groups, next we evaluated the model with equal thresholds and loadings, and finally, we estimated the model with equal thresholds, loadings, and intercepts. Fit differences between nested models were compared using the chi-square test.

Given the categorical metric nature of our data (Likert 0–2 scale) in all the factorial analyses, the polychoric correlation matrix was analyzed with a robust estimation method (weighted least squares, WLSMV, Abad et al., 2011; Brown, 2015). In confirmatory factorial analyses (CFA), several goodness of fit statistics were used to assess the quality of the models: the absolute fit index χ^2 has been presented. Additionally, the parsimony correction index root mean square of approximation (RMSEA) and its 90% confidence interval was applied. Finally, two comparative indices were also used: the Tucker–Lewis index (TLI, Tucker & Lewis, 1973) and the comparative fit index (CFI, Hu & Bentler, 1999). Acceptable model fit was defined as RMSEA < 0.08, CFI (> 0.95), and TLI (> 0.95) (Abad et al., 2011; Brown, 2015). The internal consistency of the scale was calculated with ordinal approximations of Alpha based on the polychoric correlation matrix (Zumbo et al., 2007). Analyses were conducted in R (R Core Team, 2018), with the packages Psych (Revelle, 2021) for the EFA, lavaan (Rosseel, 2012) for the CFA, and semTools (Jorgensen et al., 2020) for measurement invariance.

RESULTS

Step 1: analysis of the structure of PAM's spanish version

The original factorial structure proposed for the PAM presented a low fit, CFI = 0.828; TLI = 0.777; RMSEA = 0.100 in our data. In addition, loadings in the second-order factor are close to one (0.87, 0.95, 0.99), suggesting an identification between the three factors. Given that most of the reversed items of the scale (Item 1, Item 3, and Item 10) presented a bad functioning in our sample; thus, we have tried to fit the 3-factor second-order model but excluding those three items (specified model, F1: Item 4, Item 7, Item 12; F2: Item 5, Item 8; F3: Item 2, Item 6, Item 9, Item 11). This factorial solution presented a good fit, CFI = 0.689; TLI = 0.534; RMSEA = 0.113, although loadings in the second-order factor remain high (0.87, 0.95, 0.98) indicating a low discrimination among factors.

Parallel analysis suggested a one-factor structure (eigenvalues: empirical data: 5.22, 1.63, resampled data: 2.00, 1.58). The one-factor EFA indicated that three of the four reverse scored items (Item 1, Item 3, Item 10) generally failed to function properly (Table 1). We therefore decided to remove them from the questionnaire, leaving a 9-item questionnaire (Table 1). Extracting one factor from the last structure explained 51% of item variance. The internal consistency of these nine items was $\alpha = 0.87$.

Step 2: confirmatory factor analysis (CFA) and criterion validity

Confirmatory factor analysis

CFA analyses revealed an adequate fit to the one-factor structure ($n = 458$), $\chi^2(27) = 52.78$, $p = 0.002$; RMSEA = 0.046; 90% CI [0.027–0.064]; $p = 0.626$; CFI = 0.980 and TLI = 0.974. Only item 11 presented a minor load on the factor, but loading was statistically significant and greater than 0.3 (Table 2). The internal consistency of the scale in this sample was $\alpha = 0.89$.

TABLE 1 Factor loading and communality of the EFA in the 12- and 9-item models.

Item wording	12-item EFA		9-item EFA	
	Loading	h^2	Loading	h^2
(Item 1) Mi hijo/a no se comporta mal a propósito* [My child doesn't mean to do the wrong thing]	-0.25	0.06		
(Item 2) Mi hijo/a no despierta buenos sentimientos en otras personas [My child doesn't bring out good feelings in other people]	0.51	0.26	0.49	0.24
(Item 3) El mal comportamiento sólo es una fase que mi hijo/a está atravesando* [This misbehaviour is just a phase that my child is going through]	0.30	0.09		
(Item 4) Mi hijo/a me saca de quicio a propósito [My child 'pushes my buttons' on purpose]	0.61	0.38	0.59	0.35
(Item 5) Mi hijo/a siempre será un problema [My child will always be a problem]	0.85	0.72	0.87	0.75
(Item 6) Es difícil apreciar a mi hijo/a tal cual es [It is difficult to like who my child is]	0.81	0.65	0.82	0.67
(Item 7) Mi hijo/a hace deliberadamente cosas horribles [My child deliberately does awful things]	0.94	0.88	0.91	0.83
(Item 8) Los problemas de mi hijo/a es probable que continúen a lo largo de su vida [My child's problems are likely to continue throughout their life]	0.83	0.70	0.84	0.71
(Item 9) Me preocupa que mi hijo/a sea una mala persona [I worry that my child is a bad person]	0.47	0.22	0.48	0.23
(Item 10) Mi hijo/a con el tiempo superará sus problemas* [My child will eventually overcome his/her problems]	0.24	0.06		
(Item 11) Mi hijo/a tiene buen corazón* [My child has a good heart]	-0.45	0.20	-0.45	0.21
(Item 12) Mi hijo/a disfruta con mi angustia [My child takes pleasure in my distress]	0.76	0.58	0.77	0.59
Percentage of variance	40%		51%	

*Reverse scored items; h^2 , communality.

TABLE 2 Factor loading of the CFA model.

	<i>Loading</i>	<i>SE</i>	<i>Z-value</i>	<i>p-value</i>
Item 2	0.45	0.072	6.27	<0.001
Item 4	0.78	0.038	20.37	<0.001
Item 5	0.87	0.039	22.20	<0.001
Item 6	0.81	0.038	21.07	<0.001
Item 7	0.87	0.052	16.63	<0.001
Item 8	0.74	0.045	16.62	<0.001
Item 9	0.36	0.064	5.72	<0.001
Item 11	0.31	0.142	2.19	0.029
Item 12	0.87	0.050	17.59	<0.001

Note: The wording of the items can be found in [Table 1](#).

TABLE 3 Correlations between the nine-item PAM scale and the inventory of callous–unemotional traits (ICU), the intensity and problematic behavior dimensions of the Eyberg Child Behavior Inventory (ECBI), and parental stress (PSS).

	ICU	ECBI intensity	ECBI problematic behavior	Parental stress
9-item PAM	$r=0.405$ $p<0.001$	$r=0.367$ $p<0.001$	$r=0.460$ $p<0.001$	$r=0.441$ $p<0.001$

Criterion validity

[Table 3](#) sets out the correlations between the total nine-item PAM with the ICU, ECBI intensity, ECBI problems, and parental stress (PSS) variables. All correlations were significant and positive, indicating that when parental attributions are more negative, they are related to higher callous–unemotional scores, higher intensity and number of problematic child behavior scores, and higher levels of parental stress.

Step 3: measurement invariance

Invariance between fathers and mothers

The model presented adequate adjustment for fathers and mothers. When analyzing configural invariance (where factor loadings and intercepts are freely estimated across groups), it also exhibited a reasonable fit to the data. We then constrained the loadings to make them equal between the groups, with no evidence of a significant reduction in the fit, $\Delta X^2(8)=4.77$; $p=0.782$. Finally, we also constrained the intercepts to make them equal between the groups and likewise found no evidence of a reduction in the fit, $\Delta X^2(8)=12.74$; $p=0.121$ ([Table 4](#)). The internal consistency of the scale in mothers was $\alpha=0.85$ and $\alpha=0.90$ in the case of fathers.

Invariance between age groups

The model presented an adequate adjustment in young and old children. When analyzing configural invariance also showed a reasonable fit to the data ([Table 5](#)). Then, we constrained loadings to be equal between groups, with no evidence of a significant reduction of fit, $\Delta X^2(8)=6.16$; $p=0.629$, and CFI change is below 0.01. Finally, we have constrained also intercepts to be equal between groups, and we also did not find evidence of a reduction of fit, $\Delta X^2(8)=6.64$; $p=0.576$, and CFI change is below 0.01.

TABLE 4 Results of the factorial invariance testing.

	X^2	Df	Model comparison			<i>RMSEA [95% CI]</i>	<i>CFSI</i>	<i>TLI</i>
			ΔX^2	Δdf	<i>p-value</i>			
Fathers	34.06	27				0.038 [0.000–0.072]	0.993	0.990
Mothers	53.86	27				0.044 [0.026–0.060]	0.978	0.971
Configural invariance	88.52	54				0.042 [0.026–0.058]	0.984	0.979
Loadings' invariance	91.50	62	4.77	8	0.782	0.037 [0.019–0.052]	0.986	0.984
Loadings and intercepts' invariance	104.12	70	12.74	8	0.121	0.037 [0.021–0.051]	0.984	0.984

TABLE 5 Results of the factorial invariance testing across child age groups.

	X^2	Df	Model comparison			<i>RMSEA [95% CI]</i>	<i>CFI</i>	<i>TLI</i>
			ΔX^2	Δdf	<i>p-value</i>			
Young	61.15	27				0.051 [0.034–0.068]	0.982	0.976
Old	32.51	27				0.030 [0.000–0.063]	0.990	0.986
Configural invariance	92.62	54				0.045 [0.029–0.060]	0.984	0.978
Loadings' invariance	98.07	62	6.16	8	0.629	0.041 [0.024–0.055]	0.985	0.982
Loadings and intercepts' invariance	96.87	70	6.64	8	0.576	0.033 [0.014–0.048]	0.989	0.988

DISCUSSION

The attributions about their children's behavior that parents make have been shown to be a very important variable in predicting the successful treatment of children who present behavioral problems. Recently, Sawrikar et al. (2020) found that mothers with problematic parental attributions (i.e., negative before starting treatment and resistant to change during treatment) were associated with less improvement in positive parental feelings at the end of treatment and, in turn, greater use of harsh discipline (e.g., negative before treatment and resistant to change during treatment). It is therefore important to take the parental attributions variable into account when working with parents with children who have behavioral problems. However, the absence of measures assessing parental attributions of children with conduct problems in Spanish prevents us from assessing how they differ from other countries, in the same way that other aspects such as attendance or engagement are assessed (for more details, see Kofler et al., 2018).

In the present study, we evaluated the psychometric properties and adaptation to Spanish of the Parental Attribution Measure instrument (Sawrikar et al., 2018). Based on our exploratory

factor analysis data indicating a unidimensional factor structure, our questionnaire consisted of nine items (3 items fewer than the original instrument). Confirmatory factor analysis supported that structure and presented a good fit to the index values. However, we were unable to replicate the three dimensions comprising the original instrument (intentionality, permanence, and dispositional attributions). The three items that were eliminated were: “Mi hijo/a no se comporta mal a propósito” (“*My child doesn't mean to do the wrong thing*” item 1, intentionality dimension), “El mal comportamiento sólo es una fase que mi hijo/a está atravesando” (“*This misbehaviour is just a phase that my child is going through*” item 3, permanence dimension), and “Mi hijo/a con el tiempo superará sus problemas” (“*My child will eventually overcome his/her problems*” item 10, permanence dimension). There are some studies that show differences in parental attributions as a function of parents' culture of origin. Some cultures, for example, tend to create more stability and intentionality attributions than others, or are more likely to make external locus attributions for children's social withdrawal (for more details see Kil et al., 2021). However, these three items have presented a level of dispersion and lack of relatedness that does not allow their interpretation in these terms. It is noteworthy that all three of the deleted items were reverse scored items that speak to a more positive attribution of the child's behavioral problems (intentionality and permanence dimensions). Recent research has indicated that the use of reverse scored items may have undesirable effects on the psychometric properties of the instrument (Suárez-Álvarez et al., 2018; Vigil-Colet et al., 2020). Therefore, it is conceivable that this type of wording could have caused confusion in our sample when respondents were answering the questions and did not work as expected. In any case, the general factor of a higher order as a global measure of parental attribution in the original instrument coincides with the unidimensionality found in our sample and with previous research suggesting that parents of children with conduct problems show a negative attribution style defined by internal, stable, and controllable causal explanations of the problematic behavior (Baden & Howe, 1992; Sawrikar et al., 2019). In any case, the cultural element should always be taken into account in instrument validations. Specifically, cultural differences in parental attributions can have significant implications for parenting practices and child development. Understanding these differences can help researchers and practitioners develop culturally sensitive interventions and support systems for families.

Our data on criterion validity support previous research linking more negative parental attributions with greater behavioral problems (Sawrikar et al., 2018, 2020) and CU traits (Palm et al., 2019; Sawrikar et al., 2019) in children as well as higher parental stress (Beckerman et al., 2020; Miragoli et al., 2018). Specifically, the presence of behavioral problems in children appears to be related to greater global attributions of the misbehavior compared to samples of communities of parents (Dix & Lochman, 1990; Macbrayer et al., 2003; Wilson et al., 2006). This relationship might be explained from a circular perspective mediated by parental parenting styles. The more negative the parental attributions about their children's behavior, the more coercive and punitive the parenting style, and this is detrimental to their children's behavior (Johnston & Ohan, 2005). Behavioral problems in children tend in turn to bring about stronger attempts at parental control, usually through coercive measures, and this feeds back into more stable thoughts in parents as to the malevolent and intentional sources of their children's misbehavior.

Similarly, Snyder et al. (2005) conducted a longitudinal study and found that ineffective discipline and hostile attribution in parents predicted intensification of child conduct problems both at school and at home. In contrast, Katzmann et al. (2017) reported that child behavior improved when parental attributions improved as a result of parental interventions. They even found that changes in parental behavior were not predictive of changes in child behavior problems when dysfunctional parental attributions were taken into account. These studies have underscored the importance of measuring, addressing, and promoting changes in parental attributions as part of interventions in the case of parents focused on improving their children's behavior.

Lastly, we studied instrument invariance between the fathers and mothers and between age groups in our sample. In this analysis, the couples reported on different children, intended to overcome a limitation in the Sawrikar et al. (2019) study, where the data were not independent because both parents reported on the same child. The results indicated that the performance of the assessment instrument for parental attributions was similar regardless of the parent's gender, and between young and old children. This is very positive because it suggests that parental attribution levels by males and females are comparable.

Limitations

The current study has several limitations that should be noted and considered priorities for future research. First, not replicating the three-dimensional factorial structure means that there is a limitation when using this test to plan interventions, because the single overall score obtained prevents us from initially discriminating whether a component of intentionality, permanence, or dispositional attribution contributes more to explaining the parental attributions. Second, it would be advisable to repeat this factorial structure for fathers and mothers reporting on the same child to gather information that would enable us to refine and adjust the intervention program for each parent.

Lastly, some aspects about the data collection method and demographic information collected can be pointed out. On the one hand, although the collection of data through online platforms favors accessibility, it makes it more difficult to control the context in which the participants collaborate with the research. Likewise, it is important to mention that collecting information from different people (parents and children) from the same informant can be improved in terms of validity. In this sense, the information could be strengthened by involving other informants such as the other parent (if applicable), the children themselves or other agents who may know the child well, such as teachers. On the other hand, in our different samples, we have not asked about the race, ethnicity, or nationality of the participants and Madrid is a very cosmopolitan city, so this is considered a limitation. Likewise, having collected data only in the city of Madrid may also be a limitation as it does not take into account more rural environments. For future research, it would be useful to expand the study sample. Since parenting practices and parental beliefs have been found to be closely related to a parent's cultural group (e.g., Julian et al., 1994; Varela et al., 2004), it would have been opportune to know this type of information about the participants to better understand the functioning of the questionnaire and, especially, of the items that did not work for us as the original author of the measure. Finally, given the stratification of our sample, we cannot test invariance between fathers and mothers in each age group as Sawrikar et al. (2018) did. Thus, given the heterogeneity that exists between children of such different ages, this is an issue to be studied in the future.

Future directions

Some important future lines of research derive from this work. First, it is considered that research on the validity of the PAM in a Spanish sample should continue in order to be able, on the one hand, to increase the evidence on the appropriateness of this measure in the Spanish cultural context and, on the other hand, to be able to extract from the data a description of the specific characteristics of the Spanish population in terms of their parental attributions when they have children with behavioral problems. Second, this measure offers the possibility of conducting cross-cultural analyses around parental attributions where Spanish population can be represented and compared with other populations. Likewise, this validation gives the

rest of the Spanish-speaking community the opportunity to evaluate the adjustment of this translation to their different cultures.

Finally, a new brief self-reported measure of parental attributions also opens a window of opportunity to study more fully the impact of parental variables on the development of children with conduct problems. Assessing parental attributions together with other variables such as parental self-efficacy and stress, parenting styles, or parent–child bonding may shed light on the weight that each of these variables has on child conduct problems development and, therefore, improve the accuracy of parental interventions aimed at increasing better parent–child relationships and the adequate development of children. It also allows for a deeper understanding of the effectiveness of BPT programs in Spanish-speaking countries where they have been implemented for some time (see Triple P evidence-base about Latinx families in Fawley-King et al., 2014 or Parent–Child Interaction Therapy for Puerto Rican population in Matos et al., 2009).

CONCLUSION

Despite the above-mentioned limitations, this study provides important new insights into the psychometric properties of the PAM in a Spanish sample. It represents a significant advance, since until now there have been no other validated instruments in Spanish to assess parental attributions about their children's behavioral problems, for use in both research and clinical practice. It would also be interesting to extend the analysis of the psychometric properties of the PAM to other Spanish-speaking countries or regions in which its application may prove particularly useful and can thus help to broaden the scope of the research carried out in this area, as it is the case of the lack of literature on parental attributions and BPT outcomes.

DATA AVAILABILITY STATEMENT

This manuscript involves a dataset that has not been included in other submitted or published papers, is not being considered by another journal, nor has it been published elsewhere, and has not been posted on a website.

ETHICAL APPROVAL

The treatment of the subjects was in accordance with established ethical guidelines and appropriate institutional approval has been obtained.

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