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ORIGINAL ARTICLE

Measuring Parenting Practices and Family Functioning with Brief and Simple Instruments: Validation of the Spanish Version of the PAFAS

Anilena Mejia · Ania Filus · Rachel Calam · Alina Morawska · Matthew R. Sanders

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Abstract A set of instruments with different response formats is usually used to assess parenting practices in clinical settings and in research studies. These complex protocols can be problematic for parents with low-literacy levels. The Parenting and Family Adjustment Scales (PAFAS) is a brief, easy to read instrument that has been developed to address these concerns. The English version of this instrument suggested that it has good internal consistency (range from .70 to .96), as well as satisfactory construct and predictive validity. The aim of the present study was to explore the validity and reliability of the Spanish version of the PAFAS. A sample of 174 Spanish-speaking parents (85 % mothers; M = 37 years old; SD = 9.1) from Panama in Central America completed the instrument alongside the Parenting Scale and the Depression Anxiety Stress Scale (DASS-21). Psychometric evaluations revealed that the measure had satisfactory construct and concurrent validity as well as good internal consistency (values >.60 for all subscales) and test–retest reliability (ICC >.60 for all subscales). The PAFAS shows promise as a brief outcome measure to assess parenting practices and family functioning with Spanish-speaking parents. Potential uses of the measure and implications for further validation with diverse samples are discussed.

A. Mejia (✉) · R. Calam
School of Psychological Sciences, The University of Manchester, Oxford Road, Manchester M13 9PL, UK
e-mail: anilena.mejia@manchester.ac.uk

R. Calam
e-mail: Rachel.calam@manchester.ac.uk

A. Filus · A. Morawska · M. R. Sanders
School of Psychology, The University of Queensland, Brisbane, Australia

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Introduction

There is a long history of research showing the effectiveness of parenting and family-based interventions [1–5] particularly on outcomes such as antisocial behaviour [6], anxiety disorders [7] and drug problems [8]. In addition, their effectiveness has been proven at the prevention [9–11] and the intervention level [12, 13], and in different delivery formats such as self-directed [14, 15] group [16], seminar [17], and as online interventions [18]. One of the main features of parenting and family-based interventions is the systematic assessment of client outcomes. In most evidence-based programs, participants are invited to complete an assessment prior to and following the program in order to determine the effectiveness of the intervention. These measures tend to be parent-report instruments. It is a common practice to use five or six different instruments (i.e. one to assess each domain or variable), which makes assessment protocols long and complex for parents due to multiple sets of instructions and differing response formats (e.g., [18–20]).

There is now a movement towards the dissemination of evidence-based parenting programs cross-culturally and into low resource settings, as historically most research on the topic has been carried out in high-income countries with English-speaking parents [21]. A literature review of parenting programs in low- and middle-income countries (LMIC) showed that most trials made use of instruments which were developed in affluent countries and were not validated in the LMIC in which the study took place [22]. There is a need for measures that are culturally validated in these contexts and that are

designed specifically for families with low literacy. These instruments need to be brief and easy to respond in order for parents to complete them without difficulty. They also need to have good psychometric properties.

An instrument has recently been developed that integrates the assessment of all the common variables usually included in the evaluation of parenting and family-based programs, in order to establish an alternative to long protocols. This new measure aims to be brief, reliable, cross culturally appropriate and easy to complete, using plain language to facilitate easy comprehension. The Parenting and Family Adjustment Scales (PAFAS) [23] is a 30-item inventory consisting of two scales measuring parenting practices (the Parenting Scale) and parent and family adjustment (the Family Adjustment Scale). Validation of the original English version of the instrument with an Australian sample of parents has been completed [24]. The results indicate that scale has satisfactory construct and predictive validity as well as good internal consistency (.70–.96). Moreover, the readability of the scale indicated that it could be comfortably read by parents with a grade 5 educational level according to the Flesch reading ease and the Flesch-Kincaid grade [25]. These tests assess comprehensive difficulty and provide an estimate of education grade level (grade 1–12) required for understanding.

The present study aimed to determine the psychometric properties of the Spanish version of the PAFAS with parents from low resource communities in a LMIC, Panama. Even though Panama is considered a middle-income country, the World Bank estimates that 37 % of its population lives below the poverty line. Participants for the present project were recruited from low-income neighborhoods in Panama City [26]. This validation program was one of a range of projects taking place at the same time in Panama as the government funded a 4-year project on parenting interventions. The Spanish version of the PAFAS has the potential to be used not only with Spanish-speaking parents from LMIC, but also with Latino parents in the US and with parents from Spain.

The aims of the present study were: (1) to apply standard principles of cultural adaptation of the measure to prepare a Spanish version of the PAFAS, (2) to determine the factor structure and concurrent validity of the measure, and (3) to determine the internal consistency as well as test–retest reliability of the measure.

Method

Participants

One hundred and seventy-four parents (N = 174) completed the PAFAS alongside other measures of parental adjustment and parenting practices. Forty-nine (N = 49) of these parents completed the measures at time 1 (T1) and 2 weeks later (T2) in order to determine test–retest reliability.

Parents were recruited from community schools in Panama, Central America. Schools were selected by convenience but all were located in urban low resource neighborhoods of Panama City. Participants were also selected by convenience. With the consent of the head teacher, letters of invitation to participate in the study were sent to parents in the schools. Parents were also recruited face-to-face, when dropping off and picking up their children at school.

The average age of parents was 37 years (SD = 9.09), while the average age of children was 9 years (SD = 2.37). Most participants were mothers (n = 149, 85.6 %), were cohabitating with their partner (n = 85, 48.9 %) or married (n = 52, 29.9 %) and had completed some (n = 62, 36.3 %) or finished high school (n = 48, 28.1 %). A good gender ratio of target children was obtained with slightly more boys (n = 91, 53.8 %) than girls (n = 78, 46.2 %). Regarding the economic circumstances of the sample, 90 parents (52.9 %) said there was more than one occasion in the last 12 months when their household could not meet its essential expenses (e.g., food, rent payment, bills). One hundred and thirty parents (75.1 %) said they did not have enough money to buy what they wanted after paying for the essential expenses. Finally, 96 parents (55.8 %) reported living on less than USD 399 per month as total family income.

Measures

Parenting and Family Adjustment Scales (PAFAS) [23]

The PAFAS is a 30-item inventory, which consists of two scales assessing parenting practices (Parenting Scale) and parent and family adjustment (Family Adjustment Scale). The 18-item PAFAS Parenting Scale assesses four domains of parenting: Parental consistency (e.g., I follow through with a consequence (e.g., take away the toy) when my child misbehaves), Coercive parenting (e.g., I shout or get angry with my child), Positive encouragement (e.g., I praise my child when they behave well) and Parent–child relationship (e.g., I have a good relationship with my child). The 12-item PAFAS Family Adjustment Scale consists of three subscales: Parental adjustment (e.g., I feel stressed or worried), Family relationships (e.g., Our family members help and support each other) and Parental teamwork (e.g., I work as a team with my partner in parenting). Each item is rated on a 4-point scale from not true of me at all (0) to true of me very much (3). Twenty-three items are reverse scored. For each subscale of the PAFAS Parenting and

PAFAS Adjustment the items are summed to provide scores, with higher scores indicating higher levels of dysfunction. According to Sanders et al. [24] the internal consistency of the English version of PAFAS was satisfactory: .70 (Parental consistency), .78 (Coercive parenting), .75 (Positive encouragement), .85 (Parent–child relationship), .87 (Parental adjustment), .84 (Family relationships), and .85 (Parental teamwork). The English and Spanish versions of the PAFAS have been included in Appendices 1, 2.

Parenting Scale (PS) [27]

The PS is a 30-item questionnaire that measures three dysfunctional discipline styles including laxness (permissive discipline), over-reactivity (authoritarian discipline, displays of anger) and verbosity (overly long reprimands or reliance on talking). Parents indicate on a seven-point scale which end better represents their behavior. In addition, a total score is calculated by averaging all the items. The total score ranges from 1 to 7 with higher scores indicating higher levels of dysfunctional parenting. The Spanish version of this questionnaire was provided by the authors of the scale, however, with no information regarding the psychometric properties of the instrument. In this study, internal consistency was moderate for the total score ($\alpha = .69$).

Depression Anxiety Stress Scale 21 (DASS-21) [28]

DASS-21 is a 21-item measure that assesses symptoms of depression, anxiety and stress in adults on a 4-point scale from 0 = did not apply to me at all to 3 = applied to me very much or most of the time. Each symptom is assessed by seven items. In addition a total score can be calculated by summing all 21 items. An already existing Spanish translation of the scale, published in Daza et al. [29], was used for the present study. In Daza et al. [29], the total scale had a Cronbach's alpha $\alpha = .96$. In this study the internal consistency was also high for the total score ($\alpha = .93$).

Procedure

In a first stage, the PAFAS was translated and back translated into Spanish. Translation and back-translation is a three-step procedure that involves three independent official translators. Firstly, one person translates the instrument from English to Spanish. Then, a second independent person translates the new Spanish translation back into English. Finally, a third independent person compares the original and new English translations and makes any necessary modifications to the Spanish translation. Brislin [30] presents a detailed review on the effectiveness of the translation and back-translation procedure for cross-cultural research in Psychology. For the present study, we used three official and authorized Panamanian translators.

In a second stage, parents who agreed to take part in the study completed all the measures (PAFAS, PS and DASS-21) in groups of ten at their child's school. The principal researcher (and first author) was present during the assessments in order to assist those parents with low literacy levels. As all the measures were self-reported, parents were instructed to complete the questionnaires by themselves one after the other. They were free to ask any question as needed. Each assessment session lasted approximately 2 h.

To establish test–retest reliability, a group of 50 parents was asked to complete the PAFAS for a second time 2 weeks after initial completion. Contact details of these parents were collected during the first assessment (T1). They were given an appointment for a second assessment 2 weeks after (T2), and 2 days before this assessment took place, they received a reminder call from the principal researcher (A.M.). Of the 50 parents that were appointed for a second assessment, 49 attended.

Data Analysis

Factor Structure

In the first step we evaluated the factor structure of the scales through CFA using Mplus version 7.0 [31]. Since the PAFAS variables were both ordinal (4-point Likert scale) and not normally distributed (See Analysis section) we employed the robust MLR estimator, which produces standard errors and fit indices that are robust in relation to non-normality of observations and the use of categorical variables when there are at least four or more response categories [32, 33]. The Chi square (χ^2) goodness-of-fit statistic, the comparative fit index (CFI), the root mean square error of approximation (RMSEA) with 90 % CI, and the standardized root mean square residual (SRMR) were used to evaluate model fit. For the model to be considered to have an acceptable fit: RMSEA and SRMR should be <.08 with CFI >.90 [34, 35]. Models were re-specified based on Modification Indices (MIs), inspection of standardized residuals and theoretical considerations [36]. To assess the extent to which newly specified model exhibits an improvement over its predecessor, we used the χ^2 difference test ($\Delta\chi^2$) for nested models, and Akaike information criterion (AIC) and Bayesian information criterion (BIC) values to compare non-nested models. The Chi square difference test was calculated using the scaled Chi square and Satorra and Bentler's formulas [37].

Smaller values of AIC and BIC indicate better fit of the model [38, 39].

The assessment of the factor structure included investigation of the convergent and discriminant validity [40]. To assess the convergent validity: (1) we evaluated the statistical significance and magnitude of factor loadings; (2) checked that the estimate of the average variance extracted (AVE) that is shared between the construct and its measures is above .50; (3) tested that estimates of composite reliability (CR) were above .70, although values of .60 and more are also acceptable [41, 42].

We also employed three techniques to assess the discriminant validity: (1) we examined that the correlations between the latent constructs are not close or equal to the value of 1.00; (2) used the χ^2 difference test [43][1]; (3) we examined if the comparison of average variance extracted estimates (AVE) for each construct are higher than shared variance (the squared inter construct correlation estimate—SIC) between these constructs.

Reliability

Due to the limitations associated with Cronbach's alpha coefficient when the assumptions of tau-equivalence and uncorrelated errors are violated [44, 45] we assessed the internal consistency of the measures by calculating the H coefficient [46]. The advantage of H coefficient over the traditional construct reliability measures is that it draws the information from all indicators in a manner that corresponds to their own ability to reflect the construct [47]. Values above .70 are considered good indicators of internal consistency; however, values above .60 are also acceptable [46, 48].

Test–retest reliability was assessed using interclass correlation coefficient (ICC) with 95 % Confidence interval (CI). The ICC is an improvement over the traditional Pearson's r or Spearman's ρ, as it takes into account the differences in ratings for individual segments, along with the correlation between the raters [49]. The ICC values range from 0 to 1; values above .60 are considered good indicators of test–retest reliability. The ICCs were computed in SPSS v. 20 using a two factor mixed effects model and type consistency [50, 51].

Concurrent Validity

To determine concurrent validity we examined the associations between the PAFAS and other measures of parenting style and parent stress: the Parenting Scale (PS) for PAFAS Parenting and the Depression Anxiety Stress Scale (DASS-21) for PAFAS Family Adjustment. Pearson product-moment correlations were calculated in SPSS v. 20 to assess associations.

Results

Preliminary Analysis

One hundred and seventy-four participants completed the questionnaires with 1.76 % of values missing for PAFAS Parenting and 5.84 % of values missing for PAFAS Family Adjustment. Little's MCAR test indicated that the data were missing completely at random (MCAR) for PAFAS Parenting χ^2 (358) = 369.33, $p = .328$. For PAFAS Family Adjustment the test resulted in χ^2 (135) = 174.47, $p = .013$ indicating that the data were not MCAR. The results of logistic regression indicated that parents' relationship status (having or not having a stable partner) was significantly related to the missingness in the Family Adjustment Scale ($B = -3.54$, OR = .03, $p < .001$)[2] indicating that the data were missing at random (MAR) [52]. Mplus FIML procedure was used to handle missing data, which is considered state of the art method to handle missingness when the assumptions of MCAR or MAR are met [53, 54].

The data was examined for departures from both univariate and multivariate normality and for the presence of univariate and multivariate outliers. PAFAS items showed significant univariate and multivariate skew and kurtosis.[3] In addition, univariate outliers were detected and as a result 50 (.02 %) extreme data points for PAFAS Parenting and 37 (.02 %) extreme data points for PAFAS Family Adjustment were transformed by changing the value to the next highest/lowest (non-outlier) number. A review of squared Mahalanobis distances (D^2) showed minimal evidence of serious multivariate outliers [55].

Factor Structure

Factor Structure of PAFAS Parenting

The analysis started with a single model factor (Model C) to serve as a comparison for the hypothesized 4-factor model (Model C1). The overall fit of the one-factor model was much worse than the fit of the 4-factor model (See Table 1), therefore, the latter one was chosen as a more adequate representation of the data. However, the fit indices for the 4-factor model were not satisfactory.

[1] In this test a model is analysed, in which the correlation between the factors is fixed at 1.00. The constrained model's χ^2 is compared to the original model's χ^2 where the correlation between the constructs is estimated freely. Significantly lower Chi square value of the unconstrained model implies good discriminant validity.

[2] Parents who had a partner (married or cohabitating) were less likely to have missing values on the PAFAS Adjustment scale than parents who didn't have a partner (single, divorced, widowed).

[3] For more information please contact the first author.

Table 1 Confirmatory factor analysis of the factor structures of Spanish versions of PAFAS

Model	χ^{2a}	Df^b	$\Delta\chi$	Δdf	CFI[c]	SRMR[d]	RMSEA[e]	RMSEA 90 % CI[f]	AIC[g]	BIC[h]
PAFAS parenting Scale										
C. PAFAS parenting 1-factor model	515.02***	135			.577	.147	.128	.116–.139	7,163.55	7,333.83
C1. PAFAS parenting 4-factor model	243.05***	129			.873	.092	.071	.058–.085	6,876.14	7,065.34
C2. PAFAS parenting 4-factor model deleted items 3 and 11	141.10***	98			.946	.060	.050	.030–.068	6,080.39	6,250.66
C3. PAFAS parenting with 2 higher-order factors	145.71***	99	82.28***	1	.941	.063	.052	.033–.070	6,081.48	6,248.60
PAFAS family adjustment Scale										
D. PAFAS adjustment 1-factor model	277.58***	55			.552	.270	.153	.135–.171	4,389.32	4,499.69
D1. PAFAS adjustment 3-factor model	177.13***	51			.746	.119	.120	.101–.139	4,282.44	4,405.42
D2. PAFAS adjustment 2-factor model deleted items 19, 26, 27, 29	22.54***	19			.989	.037	.033	.000–.077	2,335.99	2,414.83
D3. PAFAS adjustment with 1 higher-order factor	22.54***	19			.989	.037	.033	.000–.077	2,335.99	2,414.83

[a] χ^2 = Satorra-Bentler scaled Chi square, [b] *df* degrees of freedom, [c] *CFI* comparative fit index, [d] *SRMR* standardized root mean square residual, [e] *RMSEA* root mean square error of approximation, [f] *CI* confidence interval, [g] *AIC* Akaike's information criterion, [h] *BIC* Bayesian information criterion. All models based on N = 174

*** $p < .001$

Examination of the factor structure coefficients indicated that 2 items (items 3 and 11) had negative and very low loadings (<.20) on the factor they were designated to measure and were removed from further analysis. The revised model showed very good fit to the data (See Table 1, Model C2).

Inspection of the relationships between the four factors showed very high (albeit not perfect) correlations between Coercive parenting and Parental consistency (r = .84, $p < .001$) and between Positive encouragement and Parent–child relationship ($p = .78$, $p < .001$). This raised the question on whether there may be two higher-order factors accounting for the relationships between the lower-order factors. A second order factor model was tested (see Table 1, Model C3), in which Coercive parenting and Parental consistency loaded on one higher order factor and Positive encouragement and Parent–child relationship loaded on the second higher order factor. The Chi square difference test showed a significant decrease in model fit ($\Delta\chi^2 = 82.28$, $p < .001$). In addition the model showed an inadmissible parameter estimate (i.e. Heywood case) [56]; the variances of both Parental consistency and Positive encouragement were negative (−.70 and −.02 respectively). Thus, we decided that the first-order solution provided a much better account of the relationships between the variables (See the graphic illustration in Fig. 1).

Factor Structure of PAFAS Family Adjustment

The analysis started with a single model factor (Model D) to serve as a comparison for the hypothesized 3-factor model (Model D1). As presented in Table 1, the overall fit of the one-factor model was much worse than the fit of the 3-factor model. The inspection of the 3-factor structure indicated that four items (items 19, 26, 27 and 29) did not load significantly on the designated factors and were removed from further analysis. As a result, the Family relationships and Parental teamwork factors both consisted of only two items, which was not enough for proper factor representation [36]. The two remaining items of the Family relationships construct and the two remaining items of Parental teamwork all referred to overall family functioning. Therefore we decided to combine these four items into one construct. The revised, 2-factor model of PAFAS Family Adjustment showed very good fit indices (See Table 1, Model D2).

The results showed very high correlation between the two factors of the scale (r = .94, $p < .001$). Therefore we tested whether there is one higher-order factor that underlines the two domains of PAFAS Family Adjustment (see Table 1, Model D3).[4] The model resulted in an inadmissible parameter estimate as the variance of the Parental adjustment factor was estimated to a negative value (−.15). Therefore we decided that the first-order solution provided

[4] Since the higher order factor was represented by only 2 indicators both loadings were constrained to equally to make the model just-identified. Thus, the higher-order solution produced exactly the same goodness-of-fit as the previous, firs-order model.

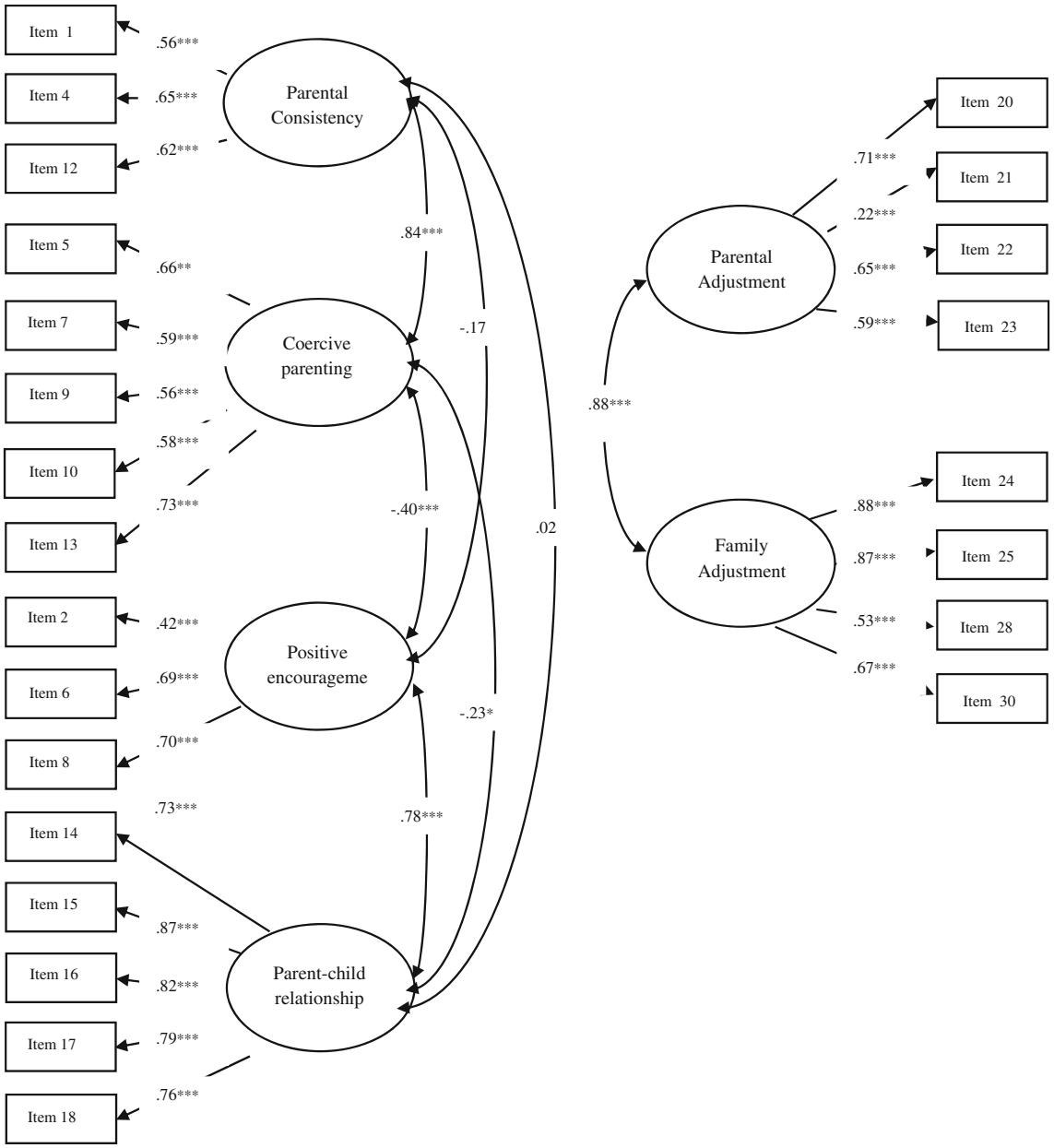

Fig. 1 Factor structures of PAFAS parenting and PAFAS family adjustment with standardized estimates

much better representation of the relationships between the variables and its graphic illustration is presented in Fig. 1.

Convergent and Discriminant Validity

For the convergent validity of both PAFAS Parenting and PAFAS Family Adjustment all the indicators had significant loadings on the designated factors (see Fig. 1). For the PAFAS Parenting the AVE estimate for Parent–child relationship factor exceeded the cut-of value (.63), for the remaining three factors the AVE values were below the cut-off value of .50 (See Table 3). The composite reliability estimates (CR) were satisfactory for both PAFAS Parenting (.64, .76, .64 and .89 for Parental Consistency, Coercive parenting, Positive encouragement and Parent–child relationship, respectively) and PAFAS Family Adjustment (.76 and .91 for Parental adjustment and Family functioning, respectively).

In terms of discriminant validity, as shown in Fig. 1 the correlations between the Coercive parenting and Parental

Table 2 The Chi square difference tests for the PAFAS parenting and the PAFAS family adjustment- the comparison of free estimated model with the constrained ones

Constrained covariance	Df^a	$\Delta\chi^2$
PAFAS parenting Scale		
Parental consistency and coercive parenting	1	146.32–141.10 = 3.38
Parental consistency and positive encouragement	1	200.39–141.10 = 59.29***
Parental consistency and parent–child relationship	1	200.80–141.10 = 59.07***
Coercive parenting and positive encouragement	1	187.24–141.10 = 24.45***
Coercive parenting and parent–child relationship	1	296.68–141.10 = 55.21***
Positive encouragement and parent–child relationship	1	154.49–141.10 = 5.60*
PAFAS family adjustment Scale		
Parental adjustment and family relationships	1	29.21–22.54 = 7.33**

[a] *df* = degrees of freedom

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 3 Average variance extracted estimates as compared with squared intercorrelation estimates for the PAFAS parenting and the PAFAS family adjustment

	AVE[a]	SIC[b]
PAFAS parenting		
Parental consistency	.38	.72, .03, .00
Coercive parenting	.40	.72, .15, .05
Positive encouragement	.39	.03, .15, .60
Parent–child relationship	.63	.00, .05, .60
PAFAS family adjustment		
Parental adjustment	.33	.77
Family relationships	.56	.77

[a] *AVE* average variance extracted—estimate representing the shared variance between the construct and its indicators (observable items)

[b] *SIC* squared interconstruct correlation—represents the shared variance between two constructs

consistency factors and between the Positive encouragement and Parent–child relationship factors were high in PAFAS Parenting. Also the relationship between the two factors of PAFAS Family Adjustment was high. The Chi square difference tests indicated a lack of discriminant validity between the Parental consistency and Coercive discipline constructs of PAFAS Parenting. For the remaining constructs of the PAFAS Parenting and for the two constructs of PAFAS Family Adjustment Chi square difference tests provided strong evidence for discriminant validity (See Table 2).

Table 4 Reliability, means and standard deviations of PAFAS

	M[a]	SD[b]	Coefficient H	ICC[c]	95 % CI[d] of ICC
1. PAFAS parenting	3.78	2.63	.65	.80	.62–.89
Parental consistency					
2. PAFAS parenting	7.96	3.79	.77	.77	.55–.87
Coercive parenting					
3. PAFAS parenting	1.78	2.01	.68	.70	.43–.84
Positive encouragement					
4. PAFAS parenting	1.35	2.73	.91	.79	.60–.89
Parent–child relationship					
5. PAFAS family adjustment	2.47	2.35	.82	.87	.74–.93
Parental adjustment					
6. PAFAS family adjustment	1.91	2.59	.95	.83	.65–.92
Family relationships					

[a] *M* mean, [b] *SD* standard deviation, [c] *ICC* intraclass correlation coefficient, [d] *CI* confidence interval

The comparison of AVE estimates with SIC estimates (see Table 3) showed large amount of shared variance and only a small amount of specific factor variance for the relationships between Coercive parenting and Parental consistency and Positive encouragement and Parent–child relationship of PAFAS parenting and between Parental adjustment and Family functioning of PAFAS Family Adjustment.

Reliability

As Table 4 shows, PAFAS showed good internal consistency (coefficient H >.60 for all subscales). The instrument also showed satisfactory test–retest reliability (ICC values above .60, See Table 4).

Concurrent Validity

As Table 5 demonstrates, both scales of PAFAS Family Adjustment correlated positively with the DASS 21. As far as PAFAS Parenting is concerned, the Parental consistency, Coercive parenting and Parent–child relationship all correlated positively with the PS, however, the Positive encouragement subscale did not correlate significantly with the Parenting Scale.

Table 5 Pearson correlations (r) amongst the PAFAS, the PS and the DASS-21

	PS[a]	DASS-21[b]
1. PAFAS parenting	.23*	
Parental consistency		
2. PAFAS parenting	.19*	
Coercive parenting		
3. PAFAS parenting	.12	
Positive encouragement		
4. PAFAS parenting	.18*	
Parent-child relationship		
5. PAFAS family adjustment		.20*
Parental adjustment		
6. PAFAS family adjustment		.23*
Family relationships		

[a] Parenting Scale; [b] Depression anxiety stress Scale 21

* $p < .05$

Discussion

The PAFAS was developed to replace long and complex protocols to measure parenting practices and family adjustment. In this paper the psychometric properties of the Spanish version of the instrument is described. The CFA confirmed a four-factor structure of PAFAS Parenting. However, the post hoc analyses revealed that two items needed to be removed from the Parental consistency subscale to make the entire scale valid. These were items 3 "I follow through with a planned consequence (e.g. take away a toy) when my child misbehaves" and items 11 "I deal with my child's misbehavior the same way all the time". Both items had high means and low variability, indicating that they do not discriminate well enough the consistency of parental behaviors among parents from Panama.

As far as PAFAS Family Adjustment is concerned, we hypothesized that the scale would consist of three factors referring to parental emotional adjustment, family relationships and parental teamwork. However, the CFA provided support for a two-factor structure assessing parental emotional adjustment and family relationships. The analysis also revealed that four items needed to be removed in order to make the entire scale valid. These items referred to negative emotional states as well as negative family relationships: item 19 "I feel stressed or worried", item 26 "Our family members fight or argue", 27 "Our family members criticize or put each other down" and 29 "I disagree with my partner about parenting". These items were characterized by low means and very low variability. Latino cultures can be described by the term *sympatia* that, among others, refers to seeking to strive for harmony in interpersonal relationships [57, 58]. The emphasis is placed on being polite, pleasant, agreeable, respectful, and well-mannered [59, 60]. Thus, items asking directly about negative emotional states or negative family relationship may be highly prone to social desirability in Latino cultures and may not be useful in valid assessment of parent or family relationships and functioning. This is only a preliminary hypothesis to explain the low means and low variability found on these items with this sample. Further studies with different samples should pay particular attention to these items in case they need to be removed or need to be reworded.

The PAFAS Parenting and PAFAS Family Adjustment showed adequate convergent validity as measured by examination of factor loadings and composite reliability estimates. However, the examination of AVE estimates indicated that for the majority of the subscales there is on average more error than there is variance explained by the factors. This indicates that the convergent validity of the scales could be improved and further research is warranted. As far as discriminant validity is concerned, our analyses revealed that there is high amount of shared variance and a relatively minor amount of specific factor variance between Parental consistency and Coercive parenting factors and between Positive encouragement and Parent–child relationship factors of PAFAS Parenting and between the two factors of the PAFAS Family Adjustment. However, analysis of higher-order CFA indicated that there are no common higher-order factors that would account for the high correlations between the first order factors indicating that these construct, although highly interrelated, should be treated as separate.

Finally, both PAFAS Parenting and PAFAS Family Adjustment revealed satisfactory concurrent validity by showing significant and positive correlations with the Parenting Scale for PAFAS Parenting and DASS-21 for PAFAS Family Adjustment. It should be noted that the Positive encouragement subscale of PAFAS Parenting did not correlate significantly with the Parenting Scale. This is understandable as the PS measures disciplinary style, whereas the Positive encouragement subscale refers to parental encouragement of child's desirable behaviors.

The present study has several limitations that should be noted. First, it was not possible to test adequately the concurrent validity for the Family relationships subscale of PAFAS Family Adjustment. The reason for not including an alternative measure of couple interaction was not to overwhelm parents with too many questionnaires, as most of them had low literacy levels. Second, future studies should determine whether the scale can differentiate between clinical and non-clinical populations, and the validity of the scale should be examined with a more diverse sample. It is important to establish the psychometric properties of the scale with Spanish-

speaking parents from other countries in Latin America, Latino parents in the US and parents from Spain. Furthermore, samples should be diverse in terms of socio-demographic variables such as educational level and income.

Conclusion

Psychometric properties of the Spanish version of the PAFAS indicate that the questionnaire shows promise as an easy to administer, quick, valid and reliable measure of family functioning and parenting practices in parents of young children from low resource settings. It is particularly suitable for research and practice with parents with low educational level as the scale is brief and uses plain language. However, future psychometric studies are needed to further explore convergent validity and to determine if the measure can differentiate between clinical and non-clinical populations.

Summary

The aim of the present study was to explore the psychometric properties of the Spanish version of the PAFAS. The PAFAS is a newly developed instrument for measuring parenting practices and family functioning. It is particularly suitable for parents with low-educational level, as it uses a plain, easy to read language and a simple response scale. A sample of 174 parents from Panama, a Spanish-speaking country of Latin America, completed the PAFAS alongside other measures of parenting practices and parental stress. Psychometric evaluations revealed that the measure had satisfactory construct and concurrent validity as well as good internal consistency and test–retest reliability. However, no measure of family functioning was included in this study, and future studies should aim to explore the applicability of the scale with a more diverse sample of parents in terms of SES. The Spanish version of the PAFAS has the potential to be used in low- and middle-income countries of Latin America, with Latino parents in the US and with parents from Spain.

Appendix 1: Parenting and Family Adjustment Scales (PAFAS)—Final Version

Please read each statement and select a number 0, 1, 2 or 3 that indicates how true the statement was of you over the past four (4) weeks. There are no right or wrong answers. Do not spend too much time on any statement.

Example:				
If my child doesn't do what they're told to do, I give in and do it myself.	0	1	2	3

The rating scale is as follows:

0. Not true of me at all
1. True of me a little, or some of the time
2. True of me quite a lot, or a good part of the time
3. True of me very much, or most of the time

	How true is this of you?			
	Not at all	A little	Quite a lot	Very much
1. If my child doesn't do what they're told to do, I give in and do it myself	0	1	2	3
2. I give my child a treat, reward or fun activity for behaving well	0	1	2	3
3. I follow through with a consequence (e.g. take away a toy) when my child misbehaves	0	1	2	3
4. I threaten something (e.g. to turn off TV) when my child misbehaves but I don't follow through	0	1	2	3
5. I shout or get angry with my child when they misbehave	0	1	2	3
6. I praise my child when they behave well	0	1	2	3
7. I try to make my child feel bad (e.g. guilt or shame) for misbehaving to teach them a lesson	0	1	2	3
8. I give my child attention (e.g. a hug, wink, smile or kiss) when they behave well	0	1	2	3
9. I spank (smack) my child when they misbehave	0	1	2	3
10. I argue with my child about their behaviour/attitude	0	1	2	3
11. I deal with my child's misbehaviour the same way all the time	0	1	2	3
12. I give my child what they want when they get angry or upset	0	1	2	3
13. I get annoyed with my child	0	1	2	3
14. I chat/talk with my child	0	1	2	3
15. I enjoy giving my child hugs, kisses and cuddles	0	1	2	3
16. I am proud of my child	0	1	2	3
17. I enjoy spending time with my child	0	1	2	3

	How true is this of you?			
	Not at all	A little	Quite a lot	Very much
18. I have a good relationship with my child	0	1	2	3
19. I feel stressed or worried	0	1	2	3
20. I feel happy	0	1	2	3
21. I feel sad or depressed	0	1	2	3
22. I feel satisfied with my life	0	1	2	3
23. I cope with the emotional demands of being a parent	0	1	2	3
24. Our family members help or support each other	0	1	2	3
25. Our family members get on well with each other	0	1	2	3
26. Our family members fight or argue	0	1	2	3
27. Our family members criticize or put each other down	0	1	2	3
If you are in the relationship please answer the following 3 questions	How true is this of your child?			
	Not at all	A little	Quite a lot	Very much
28. I work as a team with my partner in parenting	0	1	2	3
29. I disagree with my partner about parenting	0	1	2	3
30. I have a good relationship with my partner	0	1	2	3

Appendix 2: Escala de adaptación de crianza y adaptación familiar (*PAFAS*, por sus siglas en inglés)

Sírvase leer cada oración y seleccione un número 0, 1, 2 o 3 que indique cuán cierta es la oración durante las pasadas cuatro (4) semanas. No hay respuestas correctas o incorrectas. No pierda mucho tiempo en una u otra oración.

La escala de clasificación es:

0. No es cierto en lo absoluto con respecto a mí
1. Un poco o algunas veces cierto con respecto a mí
2. Es muy cierto en muchas ocasiones con respecto a mí
3. Es muy o en la mayoría de las veces cierto con respecto a mí

1. Me rindo y realizo la faena yo mismo/a si mi hijo/a no hace lo que le pido	0	1	2	3
2. Complazco a mi hijo/a con un premio o actividad de diversión por haberse portado bien	0	1	2	3
3. Yo cumplo con la consecuencia programada (quitarle un juguete a él/ella) cuando mi hijo/a se porta mal	0	1	2	3
4. Amenazo a mi hijo/a con algo (por ejemplo que apague la TV) por su mal comportamiento, pero después no cumplo con la amenaza Deliberadamente ignoro un mal comportamiento menor de mi hijo/a	0	1	2	3
5. Grito o me enojo con mi hijo/a cuando él/ella se porta mal Le digo a mi hijo/a que deje de portarse mal tan pronto me doy cuenta	0	1	2	3
6. Alabo a mi hijo/a cuando se porta bien	0	1	2	3
7. Hago sentir mal o culpable a mi hijo/a a propósito por portarse mal para darle una lección	0	1	2	3
8. Le doy atención a mi hijo/a con un abrazo, un guiño de ojo, sonrisa o beso cuando él/ella se portan bien	0	1	2	3
9. Le doy unas nalgadas a mi hijo/a cuando se porta mal	0	1	2	3
10. Discuto con mi hijo/a sobre su mal comportamiento o actitud	0	1	2	3
11. Soy consistente cuando trato con el mal comportamiento de mi hijo/a	0	1	2	3
12. Cedo ante las demandas de mi hijo/a cuando él/ella se disgusta o altera	0	1	2	3
13. Me enojo con mi hijo/a	0	1	2	3
14. Converso con mi hijo/a	0	1	2	3
15. Disfruto con abrazar, besar y acurrucar a mi hijo/a	0	1	2	3
16. Estoy orgulloso/a de mi hijo/a	0	1	2	3
17. Disfruto pasar tiempo con mi hijo/a	0	1	2	3
18. Tengo una buena relación con mi hijo/a	0	1	2	3
19. Me siento estresado/a o preocupado/a	0	1	2	3
20. Me siento feliz	0	1	2	3
21. Me siento triste o deprimido/a	0	1	2	3
22. Me siento satisfecho/a con mi vida	0	1	2	3
23. Sobrellevo las exigencias emocionales de ser padre/madre	0	1	2	3
24. Los miembros de nuestra familia se ayudan y apoyan unos a otros	0	1	2	3
25. Los miembros de nuestra familia se llevan bien entre sí	0	1	2	3
26. Los miembros de nuestra familia pelean o discuten	0	1	2	3
27. Los miembros de nuestra familia se critican entre sí	0	1	2	3
Si usted se encuentra en una relación, sírvase contestar las 3 siguientes preguntas:				
28. Yo trabajo como un equipo con mi pareja en la crianza	0	1	2	3
29. Yo estoy en desacuerdo con mi pareja sobre la crianza	0	1	2	3
30. Yo tengo una buena relación con mi pareja	0	1	2	3

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